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In captivity, it has a reputation of being both anxious and difficult to breed. (Full article...) Recently featured: Cher Malcolm X Margaret Sanger Archive By email More featured articles About Holly-Anne Hull of Remember Monday ... that Elizabeth II once asked a future member (pictured) of the "What the Hell Just Happened?" girlband Remember Monday why she was not wearing shoes? ... that John P. Metras held all-night recruitment parties including a bathtub full of ice and beer? ... that Priamurye Governorate-General, a Russian colony in East Asia, issued passports in order to segregate East Asian migrants from the general population? ... that Meng Sufen led a 1993 investigation in Guizhou's Mashan region, sparking a donation campaign raising over 1.6 million yuan for poverty alleviation? ... that Britart and the Turner Prize are both lampooned in the Jilly Cooper romance novel Pandora? ... that the larvae of the elm zigzag sawfly create distinctive zig-zags in the leaves of elm trees? ... that while attempting to "bulk up" for the Olympics, judoka Vlado Paradžik lost 11 pounds (5.0 kg) due to food shortages? ... that the developers of UTM needed to make a "slow edition" of their software to get it approved on the App Store? ... that NFL player Miles Turpin wrestled alligators when young, calling it "a lot of fun"? Archive Start a new article Nominate an article Luis Montenegro In the Portuguese legislative election, the Democratic Alliance (leader Luis Montenegro pictured) wins the most seats in parliament. Austria, represented by JJ with the song "Wasted Love", wins the Eurovision Song Contest. In the Philippines, the Alyansa para sa Bagong Pilipinas wins the most seats in the Senate election, while Lakas-CMD, one of its component parties, wins the most seats in the House elections. Former president of Uruguay José Mujica dies at the age of 89. Ongoing: Gaza war M23 campaign Russian invasion of Ukraine timeline Sudanese civil war timeline Recent deaths: Eddie Sheldrake Domingos Maubere Duncan Campbell Luigi Alva Richard Garwin Tommy Vigorito Nominate an article May 21: World Day for Cultural Diversity for Dialogue and Development Busoni c. 1897 1138 – The Crusades: The siege of Shaizar ended, and the Emir of Shaizar became a vassal of the Byzantine Empire. 1864 – American Civil War: The inconclusive Battle of Spotsylvania Court House in Virginia ended with combined Union and Confederate casualties totaling around 31,000. 1894 – The Manchester Ship Canal, linking Manchester in North West England to the Irish Sea, officially opened, becoming the world's largest navigation canal at the time. 1925 – The opera Doktor Faust, unfinished when composer Ferruccio Busoni (pictured) died, was premiered in Dresden. 2014 – A Taiwanese man carried out a stabbing spree on a Taipei Metro train, killing four people and injuring 24 others. Feng Dao (d. 954)Tommaso Campanella (d. 1639)Armand Hammer (b. 1898)Linda Laubenstein (b. 1947) More anniversaries: May 20 May 21 May 22 Archive By email List of days of the year About The black-crowned barwing (Actinodura sodangorum) is a non-migratory bird from Mainland Southeast Asia in the family Leiothrichidae, the laughingthrushes. The species's first sighting was reported in April 1996 at Ngoc Linh, Vietnam, and it was formally described in 1999. The black-crowned barwing is the only bird in the genus Actinodura to have a black crown. It has transverse barring on the wings (wingbars) and a crest, which are characteristic of the genus. Its natural habitats are subtropical or tropical moist montane forest, high-altitude shrubland, high-altitude grassland, and plantations. This black-crowned barwing was photographed in the Ngọc Linh Nature Reserve, Vietnam. Photograph credit: JJ Harrison Recently featured: Rhina Aguirre Chester Cathedral El Tatio Archive More featured pictures Community portal – The central hub for editors, with resources, links, tasks, and announcements. Village pump – Forum for discussions about Wikipedia itself, including policies and technical issues. Site news – Sources of news about Wikipedia and the broader Wikimedia movement. Teahouse – Ask basic questions about using or editing Wikipedia. Reference desk – Ask research questions about encyclopedic topics. Content portals – A unique way to navigate the encyclopedia. Wikipedia is written by volunteer editors and hosted by the Wikimedia Foundation, a non-profit organization that also hosts a range of other volunteer projects: CommonsFree media repository MediaWikiWiki software development Meta-WikiWikimedia project coordination WikibooksFree textbooks and manuals WikidataFree knowledge base WikinewsFree-content news WikiquoteCollection of quotations WikisourceFree-content library WikispeciesDirectory of species WikiversityFree learning tools WikivoyageFree travel guide WiktionaryDictionary and thesaurus This Wikipedia is written in English. Many other Wikipedias are available; some of the largest are listed below. 1,000,000+ articles العربية Deutsch Español فارسی Français Italiano Nederlands 日本語 Polski Português Русский Svenska Українська Tiếng Việt 中文 250,000+ articles Bahasa Indonesia Bahasa Melayu Bân-lâm-gú Български Català Čeština Dansk Eesti Esperanto Euskara עברית Հայերեն Magyar Norsk bokmål Română Simple English Slovenčina Srpski Srpskohrvatski Suomi Türkçe O'zbekcha 50,000+ articles Asturianu Azərbaycanca 閩南語 Bosanski کوردی Ελληνικά Frysk Gaeilge Galego Hrvatski ქართული Kurdî Latviešu Lietuvių Македонски മലയാളം Norsk nynorsk ਪੰਜਾਬੀ Shqip Slovenščina தமிழ் తెలుగు اردو Retrieved from " 2 Calendar year Years Millennium 2nd millennium Centuries 11th century 12th century 13th century Decades 1110s 1120s 1130s 1140s 1150s Years 1135 1136 1137 1138 1139 1140 1141 vte 1138 by topic Leaders Political entities State leaders Religious leaders Birth and death categories Births – Deaths Establishments and disestablishments categories Establishments – Disestablishments Art and literature 1138 in poetry vte 1138 in various calendarsGregorian calendar1138MCXXXVIIIAb urbe condita1891Armenian calendar587年上 G은Assyrian calendar5888Balinese saka calendar1059-1060Bengali calendar545Berber calendar2088English Regnal year3 Ste. 1 – 4 Ste. 1Buddhist calendar1682Burmese calendar500Byzantine calendar6646-6647Chinese calendar丁巳年 (Fire Snake)3835 or 3628 — to —戊午年 (Earth Horse)3836 or 3629Coptic calendar854-855Discordian calendar2304Ethiopian calendar1130-1131Hebrew calendar4898-4899Hindu calendars - Vikram Samvat1194-1195 - Shaka Samvat1059-1060 - Kali Yuga4238-4239Holocene calendar11138Igbo calendar138-139Iranian calendar516-517Islamic calendar532-533Japanese calendarHōen 4(保延 4年)Javanese calendar1044-1045Julian calendar1138MCXXXVIIIKorean calendar774 before ROC民前774年 Nanakshahi calendar−330Seleucid era1449/1450 AGThai solar calendar1680-1681Tibetan calendar阴火蛇 (female Fire-Snake)1264 or 883 or 111 — to —阳土马年(male Earth-Horse)1265 or 884 or 112 King Conrad III (r. 1138-1152) Year 1138 (MCXXXVIII) was a common year starting on Saturday of the Julian calendar. March 7 - Conrad III is elected as King of Germany, in the presence of the papal legate Theodwin at Koblenz. He is crowned at Aachen six days later (on March 13), and acknowledged in Bamberg by several German princes of southern Germany.[1] Henry X (the Proud), son-in-law and heir of the late King Lothair III, refuses his allegiance to Conrad. He is deprived of all his Saxon territories, which are given to Leopold IV (the Generous). Summer – A civil war breaks out in the Holy Roman Empire, a struggle begins between the Guelphs and Ghibellines, while the family name Welf of Henry X will be corrupted into Guelph. October 20 – Boleslaw III (Wrymouth) dies after a 31-year reign. He divides Poland among his sons: Władysław II (the Exile) receives Silesia and the Senioral territories – which includes the Kraków and Łęczyca regions, as well as parts of Kujawy and Wielkopolska ("Greater Poland"). Bolesław IV (the Curly) receives Masovia and Mieszko III receives the newly established Duchy of Greater Poland. The 7-year-old Henry becomes duke of Sandomierz. Bolesław's last son, Casimir II receives nothing, as he is born after his father's death.[2] May - Earl Robert FitzRoy rebels against King Stephen, supporting Matilda (his step-sister) in her claim for the English throne. Matilda is given refuge by Earl William de Albini at Arundel Castle. Stephen builds siege works around the castle, but is unable to break the castle's defences. In France, Matilda's husband Duke Geoffrey V (the Fair) takes advantage of the situation by re-invading Normandy. August 22 - Battle of the Standard: King David I of Scotland gives his full support to Matilda (daughter of the late King Henry I), and invades the north of England – travelling as far south as Lincolnshire. The Scottish army (some 15,000 men) is defeated by English forces under Earl William le Gros in Yorkshire. David retreats to Carlisle and reassembles an army. The Earldom of Pembroke, created for Gilbert de Clare, becomes the first earldom created by Stephen within the borders in Wales. Gilbert receives the rape and Pevensey Castle. Spring – Emperor John II (Komnenos) leads a Byzantine expeditionary force into Syria and arrives before the walls of Aleppo on April 20. The city proves too strong to attack, but the fortresses of Biza'a, Athareb, Ma'arrat Nu'man and Kafartab are taken by assault. While the Byzantines besiege the city of Shaizar, the Crusader allies Prince Raymond of Poitiers of Antioch and Count Joscelin II of Edessa remain in their camp playing dice.[3] Siege of Shaizar: The Byzantines under John II besiege the capital of the Munqidhite Emirate. They capture the lower city on May 20, but fail to take the citadel. John negotiates with Emir Abu'l Asakir Sultan – who offers to pay a large indemnity and becoming a vassal of the Byzantine Empire. John, disgusted by his Crusader allies, accepts the terms and raises the siege on May 21.[4] October 11 – An earthquake in Aleppo, Syria, kills about 230,000 people. Al-Rashid Billah (Deposed caliph of Baghdad) fled to Isfahan where he was assassinated by a team of four Nizari Ismailis (Assassins) in June 1138. This was celebrated in Alamut for a week by Shias.[5] November 5 – Lý Anh Tông is enthroned as emperor of Đại Việt at the age of two, starting a 37-year reign. April 10 – Robert Warelwast is nominated as bishop of Exeter at a royal council in Northampton, England. Casimir II (the Just), duke of Poland (d. 1194) Conan IV (the Young), duke of Brittany (d. 1171) Fujiwara no Narichika, Japanese nobleman (d. 1178) Hōjō Tokimasa, Japanese nobleman and regent (d. 1215) Saladin (the Lion),[6] sultan of Egypt and Syria (d. 1193) Taira no Shigemori, Japanese nobleman (d. 1179) Tancred (the Monkey King"), king of Sicily (d. 1194) January 13 or January 14 – Simon I, duke of Lorraine (b. 1076) February 19 – Irene Doukaina, Byzantine empress May 11 – William de Warenne, 2nd Earl of Surrey May 27 – Hadmar I of Kuenring, German nobleman June 6 – Al-Rashid, caliph of Baghdad (b. 1109) August 12 – Suero Vermúdez, Asturian nobleman October 28 – Boleslaw III (Wrymouth) of Poland (b. 1086) Anihudih Mor mar Fir Rhisigh, Irish poet and cleric Arwa al-Sulayhi, queen and co-ruler of Yemen (b. 1048) Avempace, Andalusian polymath and philosopher (b. 1085) Chen Yuyi, Chinese politician of the Song dynasty (b. 1090) David IV the Scot, bishop of Bangor (approximate date) Kiya Burzurj Ummid, ruler of the Nizari Isma'ili State Rodrigo Martínez, Leonese nobleman and diplomat Rudolf of St. Trond, French Benedictine chronicler Someshvara III, ruler of the Western Chalukya Empire Vakhtang (or Tsuata), Georgian nobleman (b. 1118) ^ Daniel Quitz (May 19, 2014). Die Königswahl Konrad III. 1138 und seine Politik gegenüber den Welfen. GRIN Cerlag. pp. 1–. ISBN 978-3-656-65725-5. ^ Richard Brzezinski (1998). History of Poland – Old Poland and the Piast Dynasty. pp. 20–21. ISBN 83-7212-019-6. ^ Steven Runciman (1952). A History of The Crusades. Vol II: The Kingdom of Jerusalem. pp. 173–174. ISBN 978-0-241-29876-3. ^ Steven Runciman (1952). A History of The Crusades. Vol II: The Kingdom of Jerusalem, pp. 173–175. ISBN 978-0-241-29876-3. ^ Daftary, Farhad (1992). The Isma'ilis: Their History and Doctrines. Cambridge University Press. p. 384. ISBN 978-0-521-42974-0. ^ Lyons, Malcolm; Jackson, D. E. P. (2008). Saladin: The Politics of the Holy War. Cambridge University Press. p. 2. ISBN 978-0521317399. Retrieved from " 3One hundred years, from 1001 to 1100 Millennia 2nd millennium Centuries 10th century 11th century 12th century Timelines 10th century 11th century 12th century State leaders 10th century 11th century 12th century Decades 1000s 1010s 1020s 1030s 1040s 1050s 1060s 1070s 1080s 1090s Categories: Births – Deaths Establishments – Disestablishments vte Politicalal boundaries in Eastern Hemisphere in early half of 11th century Political boundaries in Eastern Hemisphere at the end of the 11th century The 11th century is the period from 1001 (represented by the Roman numerals MI) through 1100 (MC) in accordance with the Julian calendar, and the 1st century of the 2nd millennium. In the history of Europe, this period is considered the early part of the High Middle Ages. There was, after a brief ascendancy, a sudden decline of Byzantine power and a rise of Norman domination over much of Europe, along with the prominent role in Europe of notably influential popes. Christendom experienced a formal schism in this century which had been developing over previous centuries between the Latin West and Byzantine East, causing a split in its two largest denominations to this day: Roman Catholicism and Eastern Orthodoxy. In Song dynasty China and the classical Islamic world, this century marked the high point for both classical Chinese civilization, science and technology. Even the classical civilizations of southern India flourished during this time: Chola dynasty in India reached their zenith in military might and international influence. The Western Chalukya Empire (the Chola's rival) also rose to power by the end of the century. In Japan, the Fujiwara clan continued to dominate the affairs of state. In the Americas, the Toltec and Mixtec civilizations flourished in Central America, along with the Huari Culture of South America and the Mississippian culture of North America. The Tiwanaku Empire centered around Lake Titicaca collapsed in the first half of the century. The Brihadesswarar Temple of Chola era southern India, completed in 1010, during the reign of Rajaraja I In European history, the 11th century is regarded as the beginning of the High Middle Ages, an age subsequent to the Early Middle Ages. The century began while the translatio imperii of 962 was still somewhat novel and ended in the midst of the Investiture Controversy. It saw the final Christianisation of Scandinavia and the emergence of the Peace and Truce of God movements, the Gregorian Reforms, and the Crusades which revitalised a church and a papacy that had survived tarnished by the tumultuous 10th century. In 1054, the Great Schism saw the political and religious culmination and a formal split between the Western and Eastern church. In Germany, the century was marked by the ascendancy of the Holy Roman Emperors, who hit their high-water mark under the Salians. In Britain, it saw the transformation of Scotland into a single, more unified and centralised kingdom and the Norman conquest of England in 1066. The social transformations wrought in these lands brought them into the fuller orbit of European feudal politics. In France, it saw the nadir of the monarchy and the zenith of the great magnates, especially the dukes of Aquitaine and Normandy, who could thus foster such distinctive contributions of their lands as the pious warrior who conquered Britain, Italy, and the East and the impious peacelover, the troubadour, who crafted out of the European vernacular its first great literary themes. There were also that the Fujiwara of the intellectual movement known as Scholasticism, which emphasized dialectic arguments in disputes of Christian theology as well as a classical philosophy. In Italy, the century began with the integration of the kingdom into the Holy Roman Empire and the royal palace at Pavia was summoned in 1024. By the end of the century, Lombard and Byzantine rule in the Mezzogiorno had been usurped by the Normans and the power of the territorial magnates was being replaced by that of the citizens of the northern cities. In Northern Italy, a growth of population in urban centers gave rise to an early organized capitalism and more sophisticated, commercialized culture by the late 11th century, most notably in Venice. In Spain, the century opened with the successes of the last caliphs of Córdoba and ended in the successes of the Almoravids. In between was a period of Christian unification under Navarrese hegemony and success in the Reconquista against the taifa kingdoms that replaced the fallen caliphate. In Eastern Europe, there was a golden age for the principality of Kievan Rus.A Scholar in a Meadow, Chinese Song dynasty, 11th century In this century, there was a triangular affair of continued war and peace settlements between the Song dynasty, the Tanguts-led Western Xia in the northwest, and the Khitans of the Liao dynasty in the northeast. Meanwhile, opposing political factions developed at the Song imperial court of Kaifeng. The political reformers at court, called the New Policies Group (新法, Xin Fa), were led by Emperor Zhenzong of Song and the chief councilors Fan Zhongyan and Wang Anshi, while the political conservatives were led by Chancellor Sima Guang and Empress Dowager Gao, regent of the young Emperor Zhezong of Song. Heated political debate and sectarian intrigue followed, while political enemies were often dismissed from the capital to govern frontier regions in the deep south where malaria was known to be very fatal to northern Chinese people (see History of the Song dynasty). This period also represents a high point in classical Chinese science and technology, with figures such as Su Song and Shen Kuo, as well as the age where the matured form of the Chinese pagoda was accomplished in Chinese architecture. In Japan, the Fujiwara clan dominated central politics by acting as imperial regents, controlling the actions of the Emperor of Japan, who acted merely as a 'puppet monarch' during the Heian period. In Korea, the rulers of the Goryeo Kingdom were able to concentrate more central authority into their own hands than in that of the nobles, and were able to fend off two Khitan invasions with their armies. In the Middle East, the Fatimid Empire of Egypt reached its zenith only to face steep decline, much like the Byzantine Empire in the first half of the century. The Seljuks came to prominence while the Abbasid caliphs held traditional titles without real, tangible authority in state affairs. In India, the Chola dynasty reached its height of naval power under leaders such as Rajaraja Chola I and Rajendra Chola I, dominating southern India (Tamil Nadu), Sri Lanka, and regions of Southeast Asia. The Ghaznavid Empire would invade northern India, an event that would pave the way to a series of later Muslim expansions into India. In Southeast Asia, the Pagan Kingdom reached its height of political and military power. The Khmer Empire would dominate in Mainland Southeast Asia while Srivijaya would dominate Maritime Southeast Asia. Further east, the Kingdom of Butuan, centered on the northern portion of Mindanao island flourished as the dominant trading polity in the archipelago. In Vietnam, the Lý dynasty began, which would reach its golden era during the 11th century. In Nigeria, formation of city states, kingdoms and empires, including Hausa kingdoms and Borno dynasty in the north, and the Oyo Empire and Kingdom of Benin in the south. An 11th-century rock crystal ewer of Fatimid Egypt Saladin, a Muslim leader of Ghazni, begins a series of raids into Northern India; he finishes in 1027 with the destruction of Somnath. c. 1001: Norsemen, led by Leif Erikson, establish short-lived settlements in and around Vinland in North America. 1001–1008: Japanese Lady Murasaki Shikibu writes The Tale of Genji. 1001 ± 40 years: Baïroushan volcano on what would be the Chinese-Korean border, erupts with a force of 6.5, the fourth largest Holocene blast. 1001: The ancient kingdom of Butuan, through its King, Rajah Kiling, made contact with the Chinese, Song dynasty recorded the first appearance of Butuan tributary mission through Lijehan and Jiaminan at the Chinese Imperial Court on March 17, 1001 AD. 1003: Robert II of France invades the Duchy of Burgundy, then ruled by Otto-William, Duke of Burgundy; the initial invasion is unsuccessful, but Robert II eventually gains the acceptance of the Roman Catholic Church in 1016 and annexes Burgundy into his realm. 1004: Song dynasty court prohibited Butuan from exporting several items with their predilection due to issues on rules and regulation. 1004: The library and university Dar Al-Hekma is founded in Egypt under the Fatimids. 1005: The Treaty of Shanyuan is signed between the Chinese Song dynasty and the Khitan Liao dynasty. 1006: King Dharmawangsa's Mataram kingdom falls under the invasion of King Wurawari from Lwaram (highly possible Srivijayan ally in Java).[1] 1007: Butuan sent King Kiling through the ambassador I-hsu-han sent a formal memorial on Song dynasty Imperial court requesting equal status with Champa but the request was denied on the ground that "Butuan is beneath Champa." due to Champa being an older tributary state since the 4th century. 1008: The Fatimid Egyptian sea captain Domiyat travels to the Buddhist pilgrimage site in Shandong, China, to seek out the Chinese Emperor Zhenzong of Song with gifts from his ruling Imam Al-Hakim bi-Amr Allah, successfully reopening diplomatic relations between Egypt and China that had been lost since the Tang dynasty. 1009: Lý Thái Tổ overthrows the ministrer of Vietnam, establishing the Lý dynasty. 1009–1010: The Lombard known as Melus of Bari leads an insurrection against the Byzantine Catepan of Italy, John Curcuas, as the latter was killed in battle and replaced by Basil Mesardonites, who brought Byzantine reinforcements. Defeat of the Bulgarians by the Byzantines depicted in the Madrid Skylitzes 1010–1011: The Second Goryeo-Khitan War; the Korean king is forced to flee the capital temporarily, but is unable to establish a foothold and fearing a counterattack, the Khitan forces withdrew. 1011-1021: Ibn al-Haytham (Alhacen), a famous Iraqi scientist working in Egypt during his madness in fear of angering the Egyptian caliph Al-Hakim bi-Amr Allah, and is kept under house arrest from 1011 to 1021. During this time, he writes his influential Book of Optics. 1011: Under a new Rajah named Sri Bata Shaja, Butuan finally succeeded in attaining diplomatic equality with Champa after being denied in an older request made 4 years earlier to the Song dynasty court by sending the flamboyant ambassador Likanhsieh. 1013: Danish king Sweyn Forkbeard conquers England. 1014: The Byzantine armies of Basil II are victorious over Samuel of Bulgaria in the Battle of Kleidion. 1014: The Gaelic forces of Munster and most other Irish kingdoms under High King Brian Boru defeated a combined Leinster-Viking force in the Battle of Clontarf but Brian Boru is killed at the end of the battle. 1014-1020: The Book of Healing, a vast philosophical and scientific encyclopaedia, is written by Avicenna, Persian scholar.[2] 1015: In the Battle of Nesjar in Oslofjord, Norway, the forces of Olav Haraldsson fought the forces of Svein Håkonarson, with a victory for Olav. 1018: The First Bulgarian Empire is conquered by the Byzantine Empire 1018: The Byzantine armies of Basil Boioannes are victorious at the Battle of Cannae against the Lombards under Melus of Bari. 1018: The Third Goryeo-Khitan War; the Korean General Kang Kam-ch'an inflicted heavy losses to Khitan forces at the Battle of Kwiju. The Khitans withdrew and both sides signed a treaty. 1019: Airlangga establishes the Kingdom of Kahuripan.[3] Celadon statue of an imperial guardian lion of the Chinese Song dynasty, 11th or 12th century 1021: the ruling Fatimid Caliph Al-Hakim bi-Amr Allah disappears suddenly, possibly assassinated. 1025: Rajendra Chola I moves the capital city of the empire from Thanjavur to Gangaikonda Cholapuram 1025: Rajendra Chola, the Chola king from Cholamandala in South India, conquers Pannai and Kadaram from Srivijaya and occupies it for some time. The Cholas continue a series of raids and conquests of parts Srivijayan empire in Sumatra and the Malay Peninsula.[4] 1028: the King of Srivijaya possibly Sriwijaran ally in Java).[1] 1007: Butuan Rajah Killing through the ambassador I-hsu-han sent a formal memorial on Song dynasty Imperial court requesting equal status with Champa but the request was denied on the ground that "Butuan is beneath Champa." due to Champa being an older tributary state since the 4th century. 1028: Oleg Vladiskov was captain Domiyat travels to the Buddhist pilgrimage site in Shandong, China, to seek out the Chinese Emperor Zhenzong of Song with gifts from his ruling Imam Al-Hakim bi-Amr Allah, successfully reopening diplomatic relations between Egypt and China that had been lost since the Tang dynasty. 1009: Lý Thái Tổ overthrows the ministrer of Vietnam, establishing the Lý dynasty. 1009–1010: The Lombard known as Melus of Bari leads an insurrection against the Byzantine Catepan of Italy, John Curcuas, as the latter was killed in battle and replaced by Basil Mesardonites, who brought Byzantine reinforcements. Defeat of the sacred forest and Kingdom of Sunda. (to 1579) 1033: An earthquake strikes the Jordan Valley, followed by a tsunami along the Mediterranean coast, killing tens of thousands.[5] 1035: Raoul Glaber chronicles a devastating three-year famine induced by climatic changes in southern France 1035: Canute the Great dies, and his kingdom of present-day Norway, England, and Denmark was split amongst three rivals to his throne. 1035: William from Arm ventures to the Mezzogiorno 1037: Ferdinand I of León conquers the Kingdom of Galicia. Territories of Zirids and Hammadids after the invasions of Banu Hilal, of Norman incursions and the weakening of the Almoravids 1040: Duncan I of Scotland slain in battle. Macbeth succeeds him. 1041: Samuel Aba became King of Hungary. 1041: Airlangga divides Kahuripan into two kingdoms Janggala and Kadiri and abdicates in favour of his successors.[6] 1042: the Normans establish Melfi as the capital of southern Italy. 1041–1048: Chinese artisan Bi Sheng invents ceramic movable type printing 1043: the Byzantine Empire and Kievan Rus engage in a naval confrontation, although a later treaty is signed between two parties that includes the marriage alliance of Vsevolod I of Kiev to a princess daughter of Constantine IX Monomachos. 1043: the Byzantine General George Maniaces, who had served in Sicily in 1038, is proclaimed emperor by his troops while he is catepan of Italy; he leads an unsuccessful rebellion against Constantine IX Monomachos and is killed in battle in Macedonia during his march towards Constantinople. 1043: the Song dynasty Chancellor of China, Fan Zhongyan, and prominent official and historian Ouyang Xiu introduce the Qingli Reforms, which would be rescinded by the court in 1045 due to partisan resistance to reforms. 1043: the Kingdom of Nri of West Africa is said to have started in this year with Eze Nri Ìfikuánim 1044: the Chinese Wujing Zongyao, written by Zeng Gongliang and Yang Weide, is the first book to describe gunpowder formulas;[7] it also described their use in warfare, such as blackpowder-impregnated fuses for flamethrowers.[8] It also described an early form of the compass, a thermoremanence compass.[9] 1044: Henry III of the Holy Roman Empire defeats the Kingdom of Hungary in the Battle of Ménfő; Peter Urseolo captured Samuel Aba after the battle, executing him, and restoring his claim to the throne; the Kingdom of Hungary then briefly becomes a vassal to the Holy Roman Empire. 1045: The Zirids, a Berber dynasty of North Africa, break their allegiance with the Fatimid court of Egypt and recognize the Abbasids of Baghdad as the true caliphs. A flat casket carved out of ivory from Al-Andalus (Islamic Spain), c. 1050 1052: Fujiwara no Yorimichi converts the rural villa at Byōdō-in into a famous Japanese Buddhist temple. 1053: the Norman commander Humphrey of Hauteville is victorious in the Battle of Civitate against the Lombards and the papal coalition led by Rudolf of Benevento; Pope Leo IX himself is captured by the Normans. 1054: the Great Schism, and his kingdom of present-day Catholic) and Eastern Orthodox churches separated from each other. Similar schisms in the past had been later repaired, but this one continues after nearly 1000 years. 1054: a large supernova is observed by astronomers, the remnants of which would form the Crab Nebula. 1054: the Battle of Atapuerca is fought between García V of Navarre and Ferdinand I of León. 1055: the Seljuk Turks capture Baghdad, taking the Buyid Emir Al-Malik al-Rahim prisoner. 1056: Ferdinand I of León, king of Castile and King of León, is crowned Imperator totius Hispaniae (Emperor of All Hispania). 1056: William II of England the son of William the Conqueror, was born. 1057: Anawratha, ruler of the Pagan Kingdom, defeated the Mon city of Thaton, thus unifying all of Myanmar. 1057: Macbeth, king of Scotland, dies in battle against the future king Malcolm III. 1057: Invasion of the Banu Hilal, Kairouan destroyed, Zirids reduced to a tiny coastal strip, remainder fragments into petty Bedouin emirates.[10] The Bayeux Tapestry depicting events leading to the Battle of Hastings in 1066 1061-1091: Norman conquest of Sicily in the Mediterranean Sea 1064-1065: The Great German Pilgrimage, consisting of around unarmed 7,000 pilgrims, travels to Jerusalem under the leadership of Gunther of Bamberg.[11] 1065: Seljuks first invasion to Georgia under leadership of Alp Arslan 1065: Independence of the Kingdom of Galicia and Portugal under the rule of García I 1066: in the Battle of Stamford Bridge, the last Anglo-Saxon King Harold Godwinson defeated his brother Tostig Godwinson and Harold III of Norway. 1066: Edward the Confessor dies; Harold Godwinson is elected King of England. This is what most experts think of as the end of the Viking age. 1066: the Jewish vizier Joseph ibn Naghrela and many others are killed in the 1066 Granada massacre. 1068-1073: the reign of Japanese Emperor Go-Sanjō brings about a brief period where central power is taken out of the hands of the Fujiwara clan. 1068: Virarajendra Chola begins sending military raids into Malaysia and Indonesia. 1068: Seljuks destroyed Georgia for the second time 1069-1076: with the support of Emperor Shenzong of Song, Chancellor Wang Anshi of the Chinese Song dynasty introduces the 'New Policies', including the Baojia system of societal organization and militias, low-cost loans for farmers, taxes instead of corvée labor, government monopolies on tea, salt, and wine, reforming the land survey system, and eliminating the poetry requirement in the imperial examination system to gain bureaucrats of a more practical bent. An 11th-century Chola dynasty bronze figurine of Arthanarisvara 1070: the death of Athala of Castile and the ascension of Kulothunga Chola I marks the transition between the Medieval Cholas and the Chalukya Cholas. 1071: Defeat of the Byzantine Empire at the Battle of Manzikert by the Seljuk army of Alp Arslan, ending three centuries of a Byzantine military and economic power. 1072: Oleg Svyatoslavich of Castile and Alfonso VI of Castile 1073: the Seljuk Turks capture Ankara from the Byzantines. 1074: the Seljuk Turks capture Jerusalem from the Fatimids, and cut pilgrim transit. 1075: Henry IV suppresses the rebellion of Saxony in the First Battle of Langensalza. 1075: the Investiture Controversy is sparked when Pope Gregory VII asserted in the Dictatus papae extended rights granted to the pope (disturbing the balance of power) and a new interpretation of God's role in founding the Church; this conflict and diplomat Shen Kuo asserts the Shon dynasty's rightful border lines by using court archives against the bold bluff of Emperor Daozong of Liao, who had asserted that Liao dynasty territory exceeded its earlier-accepted bounds. 1075-1076: a civil war in the Western Chalukya Empire of India; the Western Chalukya monarch Someshvara II plans to defeat his own ambitious brother Vikramaditya VI by allying with a traditional enemy, Kulothunga Chola I of the Chola Empire; Someshvara's forces suffer a heavy defeat, he is eventually captured and imprisoned by Vikramaditya, who proclaimed himself king. 1075-1077: the Song dynasty of China and the Lý dynasty of Vietnam fight a border war, with Vietnamese forces striking first on land and with their navy, and afterwards Song armies advancing as far as modern-day Hanoi, the capital, but withdraw after Lý makes peace overtures; in 1082, both sides exchange the territories that they had captured during the war, and later a border agreement is reached. 1076: the Ghana Empire is attacked by the Almoravids, who sack the capital of Koumbi Saleh, ending the rule of king Tunka Manin 1076: the Chinese Song dynasty places strict government monopolies over the production and distribution of sulfur and saltpetre, in order to curb the possibility of merchants selling gunpowder formula components to enemies such as the Tanguts and Khitans. 1076: the Song Chinese allies with southern Vietnamese Champa and Cambodian Chenla to conquer the Lý dynasty, which is an unsuccessful campaign. 1077: the Walk to Canossa by Henry IV of the Holy Roman Empire. 1077: Chinese official Su Song is sent on a diplomatic mission to the Liao dynasty and discovers that the Khitan calendar is more mathematically accurate than the Song calendar; Shen Kuo later sponsors Su Song's astronomical clock tower in order to compete with Liao astronomers. 1078: Oleg I of Chernigov is defeated in battle by his brother Vsevolod I of Kiev; Oleg escapes to Tmutarakan, but is imprisoned by the Khazars, sent to Constantinople as a prisoner, and then exiled to Rhodes. 1078: the revolt of Nikephoros III against Byzantine ruler Michael VII 1079: Malik Shah I reforms the Iranian Calendar. 1079: Franks start to settle around the Way of Saint James (Today, modern North Spain) A page of the Domesday Book of England 1080-1081: The Chinese statesman and scientist Shen Kuo is put in command of the campaign against the Western Xia, and although he successfully halts their invasion route to Yanzhou (modern Yan'an), another officer disobeys imperial orders and the campaign is ultimately a failure because of it. 1081: birth of Urraca of León and Castile, future Queen of Castile and León. 1084: the enormous Chinese Zizhi Tongjian is compiled by scholars under Chancellor Sima Guang, completed in 294 volumes and included 3 million written Chinese characters 1085: Alfonso VI of Castile captures the Moorish Muslim city of Toledo, Spain. 1085: the Katedralskolan, Lund school of Sweden is established by Canute IV of Denmark 1086: compilation of the Domesday Book by order of William I of England; it was similar to a modern-day government census, as it was used by William to thoroughly document all the landholdings within the kingdom that could be properly taxed. 1086: the Battle of az-Zallaqah between the Almoravids and Castilians 1087: a new office at the Chinese international seaport of Quanzhou is established to handle and regulate taxes and tariffs on all mercantile transactions of foreign goods coming from Africa, Arabia, India, Sri Lanka, Persia, and South East Asia. 1087: the Italian cities of Genoa and Pisa engage in the African Mahdia campaign 1087: William II of England, son of William the Conqueror, is crowned king of England. 1088: the renowned polymath Chinese scientist and official Shen Kuo made the world's first reference to the magnetic compass in his book Dream Pool Essays,[12][13] along with encyclopedic documentation and inquiry into scientific discoveries. 1088: The University of Bologna is established. 1088: Rebellion of 1088 against William II of England led by Odo of Bayeux. Siege of Jerusalem (1099) 1091: Normans from the Duchy of Normandy take control of Malta and surrounding islands. 1091: the Byzantine Empire under Alexios I Komnenos and his Cuman allies defeat Pechenegs at the Battle of Levounion 1093: army of Kulothunga Chola I in the Battle of Vengi. 1093: when the Chinese Chalukya Empire, defeats the army of Kulothunga Chola I in the Battle of Vengi. 1093: when the conservative faction had followed Sima Guang is ousted from court, the liberal reforms of Wang Anshi are reinstated, and Emperor Zhezong held all negotiations with the Tanguts of the Western Xia, resuming in armed conflict with them. 1093: Malcolm III of Scotland is killed by the forces of William II of England. 1094: the astronomical clock tower of Kaifeng, China—engineered by the official Su Song—is completed. 1094: El Cid, the great Spanish hero, conquers the Muslim city of Valencia 1094: a succession crisis following the reign of the Fatimid Caliph Ma'ad al-Mustansir Billah sparks a rebellion which leads to the split of Ismaili Shia into the new Nizari religious branch. 1095: Pope Urban II calls upon Western Europeans to take up the cross and reclaim the Holy Lands, officially commencing the First Crusade. c. 1095–1099: earliest extant manuscript of the Song of Roland 1096: University of Oxford in England holds its first lectures 1097: the Siege of Nicaea during the First Crusade 1097: Diogo Rodriguez, a son of El Cid, dies in the Battle of Consuegra, an Almoravid victory 1098: the Siege of Antioch during the First Crusade 1098: Pope Urban II makes an appearance at the Synod of Bari 1098: the Dongpo Academy of China is built in honor of the Song dynasty Chinese poet and official Su Shi, who was exiled for criticizing reforms of the New Policies Group. 1098: the birth of Hildegard of Bingen, Doctor of the Church, abbess, monastic leader, mystic, prophetess, medical, German composer and writer, polymath. 1099: the Siege of Jerusalem by European Crusaders 1099: after the Kingdom of Jerusalem is established, the Al-Aqsa Mosque is made into the residential palace for the kings of Jerusalem. 1099: death of the great Spanish hero Rodrigo Díaz "El Cid Campeador". 1099: after building considerable strength, David IV of Georgia discontinues tribute payments to the Seljuk Turks. 1100: On August 5, Henry I is crowned King of England. 1100: On December 25, Baldwin of Boulogne is crowned as the first King of Jerusalem in the Church of the Nativity in Bethlehem. King Anawrahta of Myanmar made a pilgrimage to Ceylon, returning to convert his country to Theravada Buddhism. The Tuareg migrate to the Aïr region. Kanem-Bornu expands southward into modern Nigeria. The first of seven Hausa city-states are founded in Nigeria. The Hodh region of Mauritania becomes desert. Fortified Chinese trade bases were established in the Philippines, to gather forest products and distribute imports.[14] Alfonso VI of Castile begins to use the title of Emperor in Spain as well and his wife Æ羅gifu of Northampton present the Winchester Cross to the church, dated 1031 The Atlantes – columns in the form of Toltec warriors in Tula. Statue of Lady Li Qingzhao in the Grand Hall of Poets in Du Fu Cao Tang, China Matilda of Tuscany military leader from Italy Emperor Shenzong of Song. Lady Sei Shōnagon, wrote her Pillow Book about life in the Japanese court Pope Urban II of Rome Statue of William the Conqueror, holding Domesday Book on the West Front of Lichfield Cathedral. 11th century mosaic of Constantine IX Monomachos, Empress Zoe, and Jesus Christ in the Hagia Sophia. An 11th-century reliquary of gold and cloisonné over wood, from the Duchy of Brabant, Maastricht Cathedral, now housed in the Louvre. Main article: 11th century in architecture Ani Cathedral in Turkey, completed 1001 or 1010 St Albans Cathedral of Norman-era England is completed in 1089 The Gonbad-e Qabus Tower, built in 1006 by Qabus ibn Wushmagir of Ziyarid dynasty of Iran Pagoda of Fogong Temple, built in 1056 in Shanxi, China by the Khitan Liao dynasty Kandariya Mahadeva Temple, mid 11th century Svetitskhoveli Cathedral, Georgia, is entirely renewed in 1029 The St Albans Cathedral of Norman-era England is completed in 1013. The Iron Pagoda of Kaifeng, China is built in 1049. The Phoenix Hall of Byōdō-in, Japan, is completed in 1053. The Brihadeeswarar Temple of India is completed in 1010 during the reign of Rajaraja Chola I. The Fruttuaria of San Benigno Canavese, Italy, is completed in 1007. The Kedareshwara Temple of Balligavi, India, is built in 1060 by the Western Chalukyas. Construction work begins in 1059 on the Parma Cathedral of Italy. The Saint Sophia Cathedral in Novgorod is completed in 1052, the oldest existent church in Russia. Construction begins on the Saint Sophia Cathedral in Kiev, Kievan Rus, in 1037. The Byzantine Greek Hosios Loukas monastery sees the completion of its Katholikon (main church), the earliest extant domed-octagon church from 1011 to 1012. The Lingxiao Pagoda of Zhengding, Hebei province, China, is built in 1045. The Pagoda of Fogong Temple of Shanxi province, China, is completed under the Liao dynasty in 1056. The Nikortsminda Cathedral of Georgia is completed in 1014. The Speyer Cathedral in Speyer, Germany is completed in 1061. The Chinese official Cai Xiang from 1053 to 1059 had built the Luoyang Bridge 1092 showing the clepsydra tank, waterwheel, escapement mechanism, chain drive, striking clock jacks, and armillary sphere of his clock tower. Main article: 11th-century Westminster Abbey, London, England, is completed in 1065. The nanda Temple of the Myanmar ruler King Kyanzittha is completed in 1091. The Vāng Miễu, or Temple of Literature, in Vietnam is established in 1070. Construction of Richmond Castle in England begins in 1071. The tallest pagoda tower in China, the Liaodi Pagoda, is completed in 1055, standing at a height of 84 m (275 ft). The Tower of Gonbad-e Qabus in Iran is built in 1006. Construction begins on the Sassovivo Abbey of Foligno, Italy, in 1070. The Palace of Aljafería is built in Zaragoza, Spain, during the Al-Andalus period. The Rotonda di San Lorenzo is built in Mantua, Lombardy, Italy, during the late 11th century. Construction of the Ponte della Maddalena bridge in the Province of Lucca, Italy begins in 1080. St. Mary's Church, Hildesheim in Germany is completed in 1031. The Basilica of Sant'Abbondio of Lombardy, Italy is completed in 1095. Construction begins on the Great Zimbabwe National Monument, sometime in the century. Construction of the Bagrati Cathedral in Georgia in 1003. The St. Michael's Church, Hildesheim in Germany is completed in 1031. The Basilica of Sant'Abbondio of Lombardy, Italy is completed in 1095. Construction begins on the Great Zimbabwe National Monument, sometime in the century. Construction of the Jamé Mosque of Isfahan, Iran begins in 1086 to 1087. 11th-century Tower of London in England was built in 1078. The St. Gorgor's Church of Kecharis Monastery in Armenia is built in 1003. The Martin-du-Canigou monastery on Mont Canigou in southern France is built in 1009. The St. Mary's Cathedral, Hildesheim in Germany is completed in 1020. The One Pillar Pagoda in Hanoi, Vietnam, is constructed in 1049. The St Michael at the Northgate, Oxford's oldest building, is built in Saxon England in 1040. Oxford Castle in England is built in 1071. The Florence Baptistery in Florence, Italy is founded in 1059. The Kandariya Mahadeva temple in India is built in 1050. St Mark's Basilica in Venice, Italy is rebuilt in 1063. Canterbury Cathedral in Canterbury, England is completed by 1077. Construction begins on the Cathedral of Santiago de Compostela in Spain in 1075. Latin translation of the Book of Optics (1021), written by the Iraqi physicist, Ibn al-Haytham (Alhazen) showing the African examines patients' urine; he taught ancient Greek medicine and Islamic medicine at the Schola Medica Salernitana. The original diagram of Su Song's book Xin Yi Xiang Fa Yao (published 1092) showing the clepsydra tank, waterwheel, escapement mechanism, chain drive, striking clock jacks, and armillary sphere of his clock tower. Main article: 11th century in science 1011 – Karaite scholar Abu al-Faraj furqan ibn asad (Jeshua ben Judah) writes about the spherical astrolabe, first described during Muslim medieval Islamic astronomy, was introduced to Europe by Gerbert of Aurillac, later Pope Sylvester II. Main article: Timeline of historic inventions c. 1000 – Ibn Yunus of Egypt publishes his astronomical treatise Al-Zij al-Hakimi al-Kabir. c. 1000 – Abu Sahl al-Quhi (Kuhi) c. 1000 – Law of sines is discovered by Muslim mathematicians, but it is uncertain who discovers it first between Abu-Mahmud al-Khujandi, Abu Nasr Mansur, and Abu al-Wafa. c. 1000 – Ammar ibn Ali al-Mawsili 1000-1048 – Abū Rayhān al-Bīrūnī writes more than a hundred books on many different subjects.[15] 1001–1100 – the demands of the Chinese iron industry for charcoal led to a huge amount of deforestation, which was curbed when the Chinese discovered how to use bituminous coal in smelting cast iron and steel, thus sparing thousands of acres of prime timberland.[16] 1003 – Pope Sylvester II, born Gerbert of Aurillac, dies; however, his teaching continued with his work included a book on arithmetic, a study of the Hindu-Arabic numeral system,[18] a hydraulic-powered organ,[19] the reintroduction of the abacus to Europe[20] and a possible treatise on the astrolabe[18] that was edited by Hermann of Reichenau five decades later. The cantorial astronomical work from these era. The reintroduced armillary sphere that was lost to European science after the Greco-Roman era; from Reicher's description, Gerbert's placement of the equator was exact.[21][22] He reintroduced the liberal arts education system of trivium and quadrivium, which he had borrowed from the educational institution of Islamic Córdoba.[23] Gerbert also studied and taught Islamic medicine.[24][25] 1013 – One of the Four Great Books of Song, the Prime Tortoise of the Record Bureau compiled by 1013 was the largest of the Song dynasty encyclopedias. Divided into 1000 volumes, it consisted of 9.4 million written Chinese characters. 1020 – Ibn Samh of Al-Andalus builds a geared mechanical astrolabe. 1021 – Ibn al-Haytham of Basra Iraq, finishes his influential Book of Optics from 1011 to 1021 (while he was destroyed by fire. The Haly Abbas, and overtake this trend, issuing the central government's official banknote in the 1120s. 1025 – Avicenna of Persia publishes his influential The Canon of Medicine, which remains the most influential medical text in both Islamic and Christian lands for over six centuries, and he wrote the astronomical engineer Yan Su recreates the mechanical compass-vehicle of the south-pointing chariot, first invented by Ma Jun in the 3rd century.[26] 1028-1087 – Abū Isḥāq Ibrāhīm al-Zarqālī (Arzachel) builds the equatorium and universal latitude-independent astrolabe. 1031 – Abū Rayhān al-Bīrūnī writes Kitab al-qanun al-Mas'udi 1031–1095 – Chinese scientist Shen Kuo creates a theory for land formation, or geomorphology, theorized that climate change occurred over time, discovers the concept of true north, improves the design of the astronomical sighting tube to view the pole star indefinitely, hypothesizes the retrogradation theory of planetary motion, and by observing lunar eclipse and solar eclipse he hypothesized that the sun and moon were spherical.[27][28][29][30][31] Shen Kuo also experimented with camera obscura just decades after Ibn al-Haytham, although he was not the first to treat it with quantitative attributes.[32][33] He also took an interdisciplinary approach to studies in archaeology.[34] 1041-1048 – Wujing Zongyao dynasty China invents movable type printing using individual ceramic characters.[35] Mid-11th century – Hartwelle Triptych, is made. It is now kept at Musée du Louvre, Paris. Mid-11th century – Yu Daoning paints Fishing in a Mountain Stream. Northern Song dynasty. 1068 – First known use of the drydock in China.[36] 1070 – With a team of scholars, the Chinese official Su Song also published the Ben Cao Tu Jing in 1070, a treatise on pharmacology, botany, zoology, metallurgy, and mineralogy.[37][38] Some of the drug concoctions in Su's book included ephedrine, mica minerals, and beeswax.[39][40][41] 1075 – the Song Chinese innovate a partial decarbonization method of repeated forging of cast iron under a cold blast that Hartwell and Needham consider to be a predecessor to the 18th century Bessemer process.[42] 1077 – Constantine the African introduces ancient Greek medicine to the Schola Medica Salernitana in Salerno, Italy. c. 1080 – the Liber pantegni, a compendium of Hellenistic and Islamic medicine, is written by Constantine the African. Italy by the Carthaginian Christian Constantine the African, paraphrasing translated passages from the medical text.[43] 1088 – as written by Shen Kuo in his Dream Pool Essays, the upright trebuchet with laborious hauling, thus allowing smooth travel of government ships holding cargo of up to 700 tan (4912 tons) and large privately owned-ships holding cargo of up to 1600 tan (11,224 tons).[44] 1088 – the Chinese mechanical engineer and astronomer Su Song incorporates an escapement mechanism and the world's first known chain drive to operate the armillary sphere, the astronomical clock, and the striking clock jacks of his clock tower in Kaifeng.[45] The Ostromir Gospels of Novgorod, 1057 1000 – The Remaining Signs of Past Centuries is written by Abū Rayhān al-Bīrūnī. c. 1000 – The Al-Tasrif is written by the Andalusian physician and scientist Abu al-Qasim al-Zahrawi (Abulcasis). c. 1000 – The Zij al-Kabir al-Hakimi is written by the Egyptian astronomer Ibn Yunus. 1002-1003 – Book of Lamentations is written by Gregory of Narek, one of the Doctors of the Church. 1000-1037 – Hayy ibn Yaqdhan is written by Ibn Tufail. 1008 – The Leningrad Codex, one of the oldest full manuscripts of the Hebrew Bible, is completed. c. 1001 – The oldest known copy of the epic poem Beowulf was written around this year. 1013 – The Prime Tortoise of the Record Bureau, a Chinese encyclopedia, is completed by a team of scholars including Wang Qinruo. 1020 – The Bamberg Apocalypse commissioned by Otto III is completed. 1021 – Lady Murasaki Shikibu writes the novel The Tale of Genji. 1021 – The Book of Optics by Ibn al-Haytham (Alhazen or Alhacen) is completed. 1037 – The Jiyun, a Chinese rime dictionary, is published by Ding Du and expanded by later scholars. 1037 – The Book of Healing by Avicenna (Ibn Sina) is completed. 1044-1065 – In Paetow, Louis J. (ed.), The Crusades and Other Historical Essays Presented to Dana C. Munro by his Former Students. New York: Crofts. pp. 3–43. Retrieved 21 March 2023. ^ Bowman, 599. ^ Mohn, 1. ^ "Asian maritime & trade chronology to 1700 CE". Maritime Asia. ^ Ebrey et al. (2006), 158. ^ Darlington, 474-475. ^ Seife, 77. ^ Darlington, 473. ^ Tester, 131-132. ^ Darlington, 467-468. ^ Tester, 130-131, 156. ^ Salhab, 51. ^ Darlington, 475. ^ Holmes, 646. ^ Needham, Volume 4, Part 2, 291. ^ Needham, Volume 3, 603 - 604, 614, 618. ^ Sivin, III, 23. ^ Chan, Clancey, & Loy, 15. ^ Sivin, III, 16-19. ^ Needham, Volume 3, 415 – 416. ^ Needham, Volume 4, Part 1, 98. ^ Sivin, III, 34. ^ Fraser & Haber, 227. ^ Needham, Volume 5, Part 1, 201. ^ Needham, Volume 1, 47. ^ Bowman, 596. ^ Needham, Volume 4, Part 3, 660. ^ Wu (2005), 5. ^ Unschuld, 60. ^ Needham, Volume 3, 648. ^ Hartwell, 54. ^ Peterkin, 193-195. ^ Needham, Volume 4, 3. ^ 592. ^ Needham, Volume 3, 417-418. ^ Bowman, John S. (2000). 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Presentation application, part of Microsoft 365 File extension .ppt, .pptx (for PowerPoint documents) ... PowerPoint is a presentation program, developed by Microsoft.[1] It was originally created by Robert Gaskins, Tom Rudkin, and Dennis Austin[8] at a software company named Forethought, Inc.[8] It was released on April 20, 1987,[9] initially for Macintosh computers only.[8] Microsoft acquired PowerPoint for $14 million three months after it appeared.[10] This was Microsoft's first significant acquisition,[11] and Microsoft set up a new business unit for PowerPoint in Silicon Valley where Forethought had been located.[11] PowerPoint became a component of the Microsoft Office suite, first offered in 1989 for Macintosh[12] and in 1990 for Windows,[13] which bundled several Microsoft apps. Beginning with PowerPoint 4.0 (1994), PowerPoint was integrated into Microsoft Office development, and adopted shared common components and a converged user interface.[14] PowerPoint's market share was very small at first, prior to introducing a version for Microsoft Windows, but grew rapidly with the growth of Windows and of Office.[15]:402–404 Since the late 1990s, PowerPoint's worldwide market share of presentation software has been estimated at 95 percent.[16] PowerPoint was originally designed to provide visuals for group presentations within business organizations, but has come to be widely used in other communication situations, both in business organizations and beyond.[17] The wider use led to the development of the PowerPoint presentation as a new form of communication,[18] and of critics reacting negatively to the spread of this use.[19][20]

History: The concept for PowerPoint began at Forethought, Inc., which had been used to produce overhead transparencies,[21] the second.[Clarification needed] (Windows and Macintosh 1992) introduced video output of virtual slideshows to digital projectors, which would over time replace physical transparencies and slides.[22] A dozen major versions since then have added additional features and modes of operation[14] and have made PowerPoint available beyond Apple Macintosh and Microsoft Windows, adding versions for iOS, Android, and web access.[23] Microsoft PowerPoint 2013-2019 logo PowerPoint was created by Robert Gaskins and Dennis Austin at a software startup in Silicon Valley named Forethought, Inc.[24] Forethought had been founded in 1983 to create an integrated environment and applications for future personal computers that would provide a graphical user interface, but it had run into difficulties requiring a "restart" and new plan.[25] On July 5, 1984, Forethought hired Robert Gaskins as its vice president of product development.[26]:51 to create a new application that would be specially suited for the new graphical personal computers, such as the Apple Macintosh and later Microsoft Windows.[27] Gaskins produced his initial description of PowerPoint about a month later (August 14, 1984) in the form of a 2-page document titled "Presentation Graphics for Overhead Projection."[28] By October 1984, Gaskins had selected Dennis Austin to be the developer for PowerPoint.[29] Gaskins and Austin first worked together on the definition and design of the new product for nearly a year, and produced the first specification document dated August 21, 1985.[30] This first design document showed a product as it would look in Microsoft Windows 1.0,[31] which at that time had not been released.[32] Development from that spec was begun by Austin in November 1985, for Macintosh first.[26]:104 About six months later, on May 1, 1986, Gaskins and Austin chose a second developer to join the project, Thomas Rudkin.[26]:149 Gaskins prepared two final product specification marketing documents in June 1986; these described a product for both Macintosh and Windows.[33][34] At about the same time, Austin, Rudkin, and Gaskins produced a second and final major design specification document, this time using a Macintosh look.[35] Throughout this development period, the product was called "Presenter." Then, just before release, there was a last-minute check with Forethought's lawyers to register the name as a trademark, and "Presenter" was unexpectedly rejected when a new Apple Computer venture capital fund, called Apple's Strategic Investment Group,[37] selected PowerPoint to be its first investment.[26]:169-171 A month later, on February 22, 1987, Forethought announced PowerPoint at the Personal Computer Forum in Phoenix. John Sculley, the CEO of Apple, appeared at the announcement and said "We see desktop presentation as potentially a bigger market for Apple than desktop publishing."[38] PowerPoint 1.0 for Macintosh shipped from manufacturing on April 20, 1987, and the first production run of 10,000 units was sold out.[39] By early 1987, Microsoft was starting to plan a new application to create presentations, an activity led by Jeff Raikes, who was head of marketing for the Applications Division.[40] Microsoft assigned an internal group to write a specification and plan for a new presentation product.[41] They contemplated an acquisition to speed up development, and in early 1987 Microsoft sent a letter of intent to acquire Dave Winer's product called MORE, an outlining program that could print its outlines as bullet charts.[42] During this preparatory activity Raikes discovered that a program specifically to make overhead presentations was already being developed by Forethought, Inc., and that it was nearly completed.[40] Raikes and others visited Forethought on February 6, 1987, for a confidential demonstration.[26]:173 Raikes later recounted his reaction to seeing PowerPoint and his report about it to Bill Gates, who was initially skeptical:[40] I thought, "software to do overheads—that's a great idea." I came back to see Bill. I said, "Bill, I think we really ought to do this." And Bill said, "No, no, no, no, no, that's just a feature of Microsoft Word, just put it into Word." ... And I kept saying, "Bill, no, it's not just a feature of Microsoft Word, it's a whole genre of how people do these presentations." And to his credit, he listened to me and ultimately allowed me to go forward and ... buy this company in Silicon Valley called Forethought, for the product named PowerPoint. When PowerPoint was in development, its initial press was favorable; the Wall Street Journal reported on early reactions: "'I see about one product a year I get this excited about,' says Amy hora, a consultant in Bala Cynwyd, Pa. 'People will buy a Macintosh just to get access to this product.'"[43] On April 28, 1987, a week after shipment, a group of Microsoft's senior executives spent another day at Forethought to hear about initial PowerPoint sales on Macintosh and plans for Windows.[26]:191 The following day, Microsoft sent a letter to Dave Winer withdrawing its earlier letter of intent to acquire his company,[44] and in mid-May 1987 Microsoft sent a letter of intent to acquire Forethought.[45] As requested in that letter of intent, Robert Gaskins from Forethought went to Redmond for a one-on-one meeting with Bill Gates in early June 1987,[26]:197 and by the end of July an agreement was concluded for an acquisition. The New York Times reported:[46] ... July 30, 1987— The Microsoft Corporation announced its first significant software acquisition today, paying $14 million [$38.7 million in present-day terms[47]] for Forethought Inc. of Sunnyvale, Calif. Forethought makes a program called PowerPoint that allows users of Apple Macintosh computers to make overhead transparencies or flip charts. ... [The acquisition of Forethought is the first significant one for Microsoft, which is based in Redmond, Wash. Forethought would remain in Sunnyvale, although a Silicon Valley presence. The unit will be headed by Robert Gaskins, Forethought's vice president of development. Microsoft's president Jon Shirley offered his company's motivation for the acquisition: "We made this deal primarily because of our belief in desktop presentations as a product category. ... Forethought was first to market with a product in this category."[48] Microsoft had 50% market share in Macintosh applications, and led in three categories; Raikes said that after the acquisition it would lead in five categories. The company intended for Forethought to be its Silicon Valley base to develop and market future graphics software[49] so set up within its Applications Division, an independent "Graphics Business Unit", the first Microsoft application group distant from the main Redmond location. The company hoped to hire employees uninterested in living in Washington state.[48] All the PowerPoint people from Forethought joined Microsoft, and the new location was headed by Robert Gaskins, with Dennis Austin and Thomas Rudkin leading development. PowerPoint 1.0 for Macintosh was modified to indicate the new Microsoft ownership and continued to be sold. A year after the acquisition, Gaskins reported that all new Forethought PowerPoint employees had stayed with Microsoft, and the Graphics Business Unit had hired 12 employees, many of whom did not want to move to Redmond. The GBU had moved to a new location on Sand Hill Road in Menlo Park, California; it was much larger than needed for 19 people, but Gaskins wrote that he anticipated future capacity as the company grew in Silicon Valley.[50] A new Forethought 2.0 for Macintosh, adding color 35 mm slides, shipped in May 1988,[50] and again received good reviews.[51] The same PowerPoint 2.0 product re-developed for Windows was shipped two years later, in mid-1990, at the same time as Windows 3.0.[52] Much of the color technology was the result of a joint development partnership with Genigraphics, the dominant presentation services company.[53] PowerPoint 2.0 for Windows shipped in 1992 for both Windows and Mac, added live video for projectors and monitors, at the same time that PowerPoint was thereafter used for preparing presentations as well as for preparing them. This was at first an alternative to overhead transparencies and 35 mm slides, but over time would come to replace them.[54] See also: History of Microsoft Office PowerPoint had first been included in Microsoft Office from the beginning. PowerPoint 2.0 for Macintosh was part of the first Office bundle for Macintosh which was offered in mid-1989.[55] When PowerPoint 2.0 for Windows appeared, a year later, it was part of a similar Office bundle for Windows, which was offered in late 1990.[56] Both of these were bundling promotions, in which the independent applications were packaged together and offered for a lower total price.[55] PowerPoint 3.0 (1992) was again separately developed and developed,[14] and was advertised and sold separately from Office.[57] It was, as before, included in Microsoft Office 3.0, both for Windows and the corresponding version for Macintosh.[58] A plan to integrate the applications themselves more tightly had been indicated as early as February 1991, toward the end of PowerPoint 3.0 development, in an internal memo by Bill Gates:[59] Another important question is what portion of our applications sales over time will be a set of applications versus a single product. ... Please assume that we will stay ahead in integrating our future strategies—the product teams WILL deliver on this. ... I believe that we should position the "OFFICE" as our most important application. The move from bundling separate products to integrated development began with PowerPoint 4.0, developed in 1993–1994 under new management from Redmond.[60] The PowerPoint group in Silicon Valley was reorganized from the independent "Graphics Business Unit" (GBU) to become the "Graphics Product Unit" (GPU) for Office, and PowerPoint 4.0 changed to adopt a converged user interface and other components shared with the other apps in Office.[14] When it was released, the computer press reported on the change approvingly: "PowerPoint 4.0 has been re-engineered from the ground up to resemble and work with the latest applications in Office: Word 6.0, Excel 5.0, and Access 2.0. The redesign is so good, you'll have to look twice to make sure you're running PowerPoint and not Word or Excel."[61] Office integration was so successful that beginning with the next version number PowerPoint 7.0 (skipping 5.0 and 6.0) so that all the components of Office would share the same major version number.[62] Although PowerPoint by this point had become part of the integrated Microsoft Office product, its development remained in Silicon Valley. Succeeding versions of PowerPoint introduced important changes, particularly version 12.0 (2007) which had a very different shared Office "ribbon" user interface, and a new shared Office XML-based file format.[63] This marked the 20th anniversary of PowerPoint, and Microsoft held an event to commemorate the anniversary at its Silicon Valley campus for the PowerPoint team there. Special guests were Robert Gaskins, Dennis Austin, and Thomas Rudkin, and the featured speaker was Jeff Raikes, all from PowerPoint 1.0 days, 20 years before.[64] Since then major development of PowerPoint as a product has made it possible to ship versions of PowerPoint 2016 for Windows, Mac, iOS, Android, and web access nearly simultaneously,[citation needed] and to release new features on an almost monthly schedule.[65] PowerPoint development is still carried out in Silicon Valley as of 2017[update].[66] In 2010, Jeff Raikes, who had most recently been President of the Business Division of Microsoft (including responsibility for Office),[67] observed: "of course, now we know that PowerPoint is oftentimes the number two—or in some cases even the number one—most-used tool" among the applications in Office.[40] PowerPoint's initial sales were about 40,000 copies sold in 1987 (nine months), about 85,000 copies in 1988, and about 100,000 copies in 1989, all for Macintosh.[68] PowerPoint's market share in its first three years was a tiny part of the total presentation market, which was very heavily dominated by MS-DOS applications on PCs.[69] The market leader in MS-DOS in 1988–1989[70] were Harvard Graphics (introduced by Software Publishing in 1986[71]) in first place, and Lotus Freelance Plus (also introduced in 1986[72]) as a strong second.[73] They were competing with more than a dozen other MS-DOS presentation products,[74] and Microsoft did not develop a PowerPoint version for MS-DOS.[75] After three years, their sales were disappointing. Jeff Raikes, who had bought PowerPoint for Microsoft, later recalled: "By 1990, it looked like it wasn't a very smart idea [for Microsoft to have acquired PowerPoint], because our very people were using PowerPoint."[40] This began to change when the first version for Windows, PowerPoint 2.0, brought sales to a lot higher level.[40] This was sold about 1 million copies in 1992, of which about 80 percent were for Windows and about 20 percent for Macintosh.[68]:403 and in 1992 PowerPoint's market share of worldwide presentation graphics software sales was reported as 63 percent.[68]:404 By the last six months of 1992, PowerPoint revenue was running at a rate of over $100 million annually ($277 million in present-day terms[47]).[68]:405[76] Sales of PowerPoint 3.0 doubled to about 2 million copies in 1993, of which about 90 percent were for Windows and 10 percent for Macintosh,[68]:403 and in 1993 PowerPoint's market share of worldwide presentation graphics software sales was reported as 78 percent.[68]:404 In both years, about half of total revenue came from sales outside the U.S.[68]:403 By 1997 PowerPoint sales had doubled again, to more than 4 million copies annually, representing 85 percent of the worldwide market.[77] Also in 1997, an internal publication of the PowerPoint group said that by the next over 20 million copies of PowerPoint were in use, and that total revenues from PowerPoint over its first ten years (1987 to 1996) had already exceeded $1 billion.[78] Since the late 1990s, PowerPoint's market share of total worldwide presentation software has been estimated at 95 percent by both industry and academic sources.[79] The earliest version of PowerPoint (1987 for Macintosh) could be used to print slides to photocopied onto sheets of transparent film for projection from slide projectors. PowerPoint was used for planning and preparing a presentation, but not for delivering it (apart from previewing it on a computer screen, or distributing printed paper copies).[80] The operation of PowerPoint changed substantially in its third version (1992 for Windows and Macintosh), when PowerPoint was extended to also deliver a presentation by producing direct video output to digital projectors or large monitors.[80] In 1992 video projection of presentations was rare and expensive, and practically unknown from a laptop computer. Robert Gaskins, one of the creators of PowerPoint, locates this period as the time when PowerPoint usage began to grow: ... It wasn't until the laptop and a digital projector could be connected that this new way of using PowerPoint was possible.[81]:373-375 By about 2003, ten years later, digital projection had become the dominant mode of use, replacing transparencies and 35mm slides and their projectors.[81]:410-414[82] As a result, the meaning of "PowerPoint presentation" narrowed to mean specifically digital projection.[83] ... in the business lexicon, "PowerPoint presentation" had come to refer to a presentation "deck" containing a sequence of pages (called "slides" in the app) which usually have a consistent style (from template masters), and which may contain information imported from other apps or created in PowerPoint, including text, bullet lists, tables, charts, drawn shapes, images, audio clips, video clips, animations of elements, and animated transitions between slides, plus attached notes for each slide.[84] After such a file is created, typical operation is to present it as a slide show using a portable computer, where the presentation file is stored on the computer or available from a network, and the computer's screen shows a "presenter view" with current slide, next slide, speaker's notes for the current slide, and other information.[85] Video is sent from the computer to one or more external digital projectors or monitors, showing only the current slide to the audience, with sequencing controlled by the speaker at the computer. A smartphone remote control built in to PowerPoint for iOS optionally controlled from Apple Watch[86] and for Android[87] allows the presenter to control the show from elsewhere in the room. In addition to a computer slide show projected to a live audience by a speaker, PowerPoint can be used to deliver a presentation in a number of other ways: Displayed on the screen of the presentation computer or tablet (for a very small group).[88] Printed for distribution as paper documents (in several formats)[89] Distributed as files for private viewing, even on computers without PowerPoint[90] Packaged for distribution on CD or a network, including linked and embedded data[91] Transmitted as a live broadcast presentation over the web[92] Embedded in a web page or blog[93] Shared on social networks such as Facebook or Twitter[94] Set up as a self-running unattended display[95] Recorded as video/audio (H.264/AAC), to be distributed as for any other video[96] Some of these ways of using PowerPoint have been studied by JoAnne Yates and Wanda Orlikowski of the MIT Sloan School of Management.[83] The standard form of such presentations involves a single person standing before a group of people, talking and using the PowerPoint slideshow to project visual aids onto a screen. ... In practice, however, presentations are not always delivered in this mode. In our studies, we often found that the presenter sat at a table with a small group of people and talked through the slides over an audio or video channel (e.g., telephone or video conference) as both parties viewed the slides. ... Another common variation was placing a PowerPoint file on a web site for people to view at different times. They found that some of these ways of using PowerPoint could influence the content of presentations, for example when "the slides themselves have to carry more of the substance of the presentation, and thus need considerably more content than they would need for a conventional presentation."[83] PowerPoint Mobile is included with Windows Mobile 5.0. It is a presentation program capable of reading and editing Microsoft PowerPoint presentations, although authoring abilities are limited to adding notes, editing text, and rearranging slides. It can't create new presentations.[97][98] Versions of PowerPoint Mobile for Windows Phone 7 can also watch presentations downloaded from the Internet.[99] In 2015, Microsoft released PowerPoint Mobile for Windows 10 as a universal app. In this version of PowerPoint users can create and edit new presentations, present, and share their PowerPoint documents.[100] Further information: Microsoft Office & Office on the web PowerPoint available as part of Office on the web, which also includes web versions of Microsoft Excel and Microsoft Word. PowerPoint for the web does not support inserting or editing charts, equations, or audio or video onto your PC, but they are all displayed in the presentation if they were added in using a desktop app. Some elements, like WordArt effects or more advanced animations and transitions, are not displayed at all, although they are preserved in the document. PowerPoint for the web also lacks the Outline, Master, Slide Sorter, and Presenter views present in the desktop app, as well as having limited printing options.[101] A PowerPoint presentation in progress PowerPoint was originally targeted just for business presentations. Robert Gaskins, who was responsible for its design, has written about his intended customers: "... I did not target either existing large groups of users of presentations, such as school teachers or military officers. ... I also did not plan to target people who were not existing users of presentations ... such as clergy and school children .... Our focus was purely on business users, in small and large companies, from one person to the largest multinationals."[102]:76-77 Business people had for a long time made presentations for sales calls and for internal company communications, and PowerPoint produced the same in the same style and for the same purposes.[102]:420 PowerPoint use in business grew over its first five years (1987-1992) to sales of about 1 million copies annually, for worldwide market share of 63 percent.[68] Over the following five years (1992-1997) PowerPoint sales accelerated, to a rate of about 4 million copies annually, for worldwide market share of 85 percent.[103] The increase in business use has been attributed to "network effects", whereby additional users of PowerPoint increased its salience and value to other users.[104] Not everyone immediately approved of the greater use of PowerPoint for presentations, even in business. CEOs who very early were reported to discourage or ban PowerPoint presentations at internal business meetings included Lou Gerstner (at IBM, in 1993),[105] Scott McNealy (at Sun Microsystems, in 1996),[106] and Steve Jobs (at Apple, in 1997).[107] But even so, Rich Gold, a scholar who studied corporate presentation use of various PARC, could write in 1999: "Within today's corporation, if you want to communicate an idea ... you use PowerPoint."[108] At the same time that PowerPoint was becoming dominant in business settings, it was also being adopted for uses beyond business: "Personal computing ... scaled up the production of presentations. ... The result has been the rise of presentation culture. In an information society, nearly everyone presents."[109] In 1998, at about the same time that Gold was pronouncing PowerPoint's ubiquity in business, the influential Bell Labs engineer Robert W. Lucky could already write about broader uses:[110] ... the world has fun with the giddy power of presentation graphics. A new language is in the air, and it is codified in PowerPoint. ... In a family discussion about what to do on a given evening, for example, I feel like pulling out my laptop and giving a Vugraph presentation... In church, I am surprised that the preachers haven't caught on yet. ... How have we gotten on so long without PowerPoint? Over a decade or so, beginning in the mid-1990s, PowerPoint began to be used in many presentation situations, well beyond its original business application. A list of examples for various situations, with potential for NASA astronauts,[118] giving military briefings,[119] issuing government reports,[120] undertaking diplomatic negotiations,[121][122] writing novels,[123] giving architectural demonstrations,[124] prototyping website designs,[125] creating animated video games,[126] editing images,[127] creating art projects,[128] and even as a substitute for writing engineering technical reports,[129] as an organizing tool for writing general business documents.[130] By 2003, it seemed that PowerPoint was being used everywhere. Julia Keller reported for the Chicago Tribune:[131] PowerPoint ... is one of the most pervasive and ubiquitous technological tools ever concocted. In less than a decade, it has revolutionized the worlds of business, education, science, and communications, swiftly becoming the standard for just about anybody who wants to explain just about anything to just about anybody else. From corporate middle managers reporting on production goals to 4th-graders fashioning a show-and-tell on the French and Indian War to church pastors explicating the seven deadly sins ... PowerPoint seems poised for world domination. As uses broadened, cultural awareness of PowerPoint grew and commentary about it began to appear. "With the widespread adoption of PowerPoint came complaints ... often very general statements reflecting discomfort with both modern and communication practices as well as the dysfunctions of organizational culture."[132] Indications of this awareness included increasing mentions of PowerPoint use in the Dilbert comic strips of Scott Adams.[133] comic parodies of it or inappropriate use such as the Gettysburg Address in PowerPoint[134][135] or summaries of Shakespeare's Hamlet and Nabokov's Lolita in PowerPoint.[136] and a vast number of publications on the general subject of PowerPoint, especially about how to use it.[137][138] Out of all the analyses of PowerPoint over a quarter of a century, at least three general themes emerged as categories of reaction to its broader use: (1) "Use it less": avoid PowerPoint in favor of alternatives, such as using more-complex graphics and written prose, or using nothing;[19] (2) "Use it differently": make a major change to a PowerPoint style that is simpler and pictorial, turning the presentation toward a performance, more like a Steve Jobs keynote;[20] and (3) "Use it better": retain much of the conventional PowerPoint style but learn to avoid making many kinds of mistakes that can interfere with communication.[21] See also: Edward Tufte and Anti-PowerPoint Party An early reaction was that the broader use of PowerPoint was a mistake, and should be reversed. An influential example was Edward Tufte, an authority on information design, who has been a professor of political science, statistics, and computer science at Princeton and Yale, but is best known for his self-published books on data visualization, which have sold nearly 2 million copies as of 2014.[139] In 2003, he published a widely-read booklet titled The Cognitive Style of PowerPoint, revised in 2006.[19] Tufte found a number of problems with the "cognitive style" of PowerPoint, many of which he attributed to the standard default slide templates:[19] PowerPoint's convenience for some presenters is costly to the content and the audience. These costs arise from the cognitive style characteristics of the standard default PP presentation: foreshortening of evidence and thought, low spatial resolution, an intensely hierarchical single-path structure as the model for organizing every type of content, breaking up narratives and data into slides and minimal fragments, rapid temporal sequencing of thin information rather than focused spatial analysis, conspicuous chartjunk and PP Phluff, branding of slides with logotypes, a preoccupation with format not content, incompetent designs for data graphics and tables, and a smirky commercialism that turns information into a sales pitch and presenters into marketeers [italics in original]. Tufte particularly advised against using PowerPoint for reporting scientific analyses, using as a dramatic example some slides made during the flight of the space shuttle Columbia after it had been damaged by an accident at liftoff, slides which poorly communicated the engineers' limited understanding of what had happened.[19]:8-14 For such technical presentations, and for most occasions apart from this initial domain of sales presentations, Tufte advised against using PowerPoint; for those situations, according to Tufte, it would be better to substitute high-resolution graphics or concise prose documents as handouts for the audience to study and discuss, providing a great deal more detail.[19] Many commentators enthusiastically joined in Tufte's vivid criticism of PowerPoint,[140] and at a conference held in 2013 a decade after Tufte's booklet appeared one panel claimed that "Despite all the criticism about his work, Tufte can be considered as the single most influential author in the discourse on PowerPoint. ... While his approach was not rigorous from a research perspective, his articles received wide resonance with the public at large ... "[141] There were also others who disagreed with Tufte's assertion that the PowerPoint program reduces the quality of presenters' thoughts: Steven Pinker, professor of psychology at MIT and later Harvard, had earlier argued that "if anything, PowerPoint, if used well, would ideally reflect the way we think."[142] Pinker later reinforced this opinion: "Any general opposition to PowerPoint is just dumb, ... It's like denouncing lectures—before there were awful PowerPoint presentations, there were awful lectures, unscripted lectures, slide shows, chalk talks, and so on."[143] Much of the early commentary, on all sides, was "informal" and "anecdotal", because empirical research had been limited.[144] See also: Richard E. Mayer and Steve Jobs Keynotes A second reaction to PowerPoint use was to say that PowerPoint can be used well, but only by substantially changing its style of use. This reaction is exemplified by Richard E. Mayer, a professor of psychology at the University of California, Santa Barbara, who has studied cognition and learning, particularly the design of educational multimedia, and who has published more than 500 publications, including over 30 books.[145] Mayer's theme has been that "In light of the science, it is up to us to make a fundamental shift in our thinking—we can no longer expect people to struggle to try to adapt to our PowerPoint habits. Instead, we have to change our PowerPoint habits to align with the way people learn."[20] Mayer made judgment that the information density of text on PowerPoint slides was too low, perhaps only 40 words on a slide, leading to over-simplified messages;[144] Mayer responded that his empirical research showed exactly the opposite, that the amount of text on a slide should be reduced, so that one would be in "PowerPoint overload" that "might impede understanding during presentations.[147] Mayer suggested a few major changes from traditional PowerPoint exercises:[20] replacing brief slide titles with longer "headlines" expressing complete ideas; showing more slides but simpler ones; removing almost all bullet lists (reserving the text for the spoken narration); using larger, higher-quality, and more important graphics and photographs; removing all extraneous decoration, backgrounds, logos and identification, everything but the essential message. Mayer's ideas are claimed by Carmine Gallo to have been reflected in Steve Jobs's presentations:[147] "Mayer outlined fundamental principles of multimedia design based on what scientists know about cognitive functioning. Steve Jobs's slides adhere to each of Mayer's principles ... "[148]:92 Though not unique to Jobs, many people saw the style for the first time in Jobs famous product introductions.[149] Steve Jobs would have been able to big advantage over Apple's Keynote presentation software—it's everywhere ... it's safe to say that the number of Keynote presentations is comparison with PowerPoint. Although most presentation designers who are familiar with both formats prefer to work in the more elegant Keynote system, those same designers will tell you that the majority of their client work is done in PowerPoint.[148]:44 Consistent with its association with Steve Jobs's keynotes, a response to this style has been that it is particularly effective for "ballroom-style presentations" (as often given in conference-room-sized venues where a celebrated and practiced speaker addresses a large passive audience), but less appropriate for "conference room-style presentations" which are often recurring internal business meetings for in-depth discussion with motivated counterparts.[150] See also: Stephen Kosslyn A third reaction to PowerPoint use was to conclude that the standard style is capable of being used well, but that many small points need to be executed carefully, to avoid impeding understanding. This kind of analysis is particularly associated with Stephen Kosslyn, a cognitive neuroscientist who specializes in the psychology of learning and visual communication, and who has been head of the department of psychology at Harvard, has been Director of Stanford's Center for Advanced Study in the Behavioral Sciences, and has published some 300 papers and 14 books.[151] Kosslyn presented a set of psychological principles of "human perception, memory, and comprehension" that "appears to capture the major points of agreement among researchers."[152] He reports that his experiments support the idea that it is not intuitive or obvious how to create effective PowerPoint presentations that conform to those agreed principles, and that even small differences that might not seem significant to a presenter can produce very different results in audiences' understanding. For this reason, Kosslyn says, users need specific education to be able to identify best ways to avoid "flaws and failures".[152] Specifically, we hypothesized and found that the psychological principles are often violated in PowerPoint slideshows across different fields ... and that observers have difficulty identifying many violations of psychological displays in individual slides ... These studies converge in painting the following picture: PowerPoint presentations are commonly flawed; some types of flaws are more common than others; flaws are not isolated to one domain or context; and, although some types of flaws annoy the audience, at the level of slide design they are always obvious to an untrained observer ... The many "flaws and failures" identified were those "likely to disrupt the comprehension or memory of the material." Among the most common examples were "Bulleted items are not presented individually, growing the list from the top to the bottom," "More than four bulleted items appear in a single list," "More than two lines are used per bulleted sentence," and "Words are not large enough (i.e., greater than 20 point) to be easily seen." Among audience reactions commonly reported were "Speakers read word-for-word from notes or from the slides themselves," "The slides contained too much material to be absorbed before the next slide was presented," and "The main point was obscured by lots of irrelevant detail."[152] Kosslyn observes that these findings could help to explain why the many studies of the instructional effectiveness of PowerPoint have been inconclusive and conflicting, if there were differences in the quality of the presentations tested in different studies that went unobserved because "may may feel that 'good design' is intuitively clear."[152] In 2007 Kosslyn wrote a book about PowerPoint, in which he suggested a very large number of fairly modest changes to PowerPoint style and gave advice on recommended ways of using PowerPoint.[21] In a later second book about PowerPoint he suggested nearly 150 clarifying style changes (in fewer than 150 pages).[153] Kosslyn summarizes:[21]:2-3,200 ... there's nothing fundamentally wrong with the PowerPoint program as a medium; rather, I claim that the problem lies in how it is used. ... In fact, this medium is a remarkably versatile tool that can be extraordinarily effective. ... For many purposes, PowerPoint presentations are a superior medium of communication, which is why they have become standard in so many fields. In 2017, an online poll of social media users in the UK was reported to show that PowerPoint "remains as popular with young tech-savvy users as it is with the Baby Boomers," with almost four out of five saying that "PowerPoint was a great tool for making presentations," in part because "PowerPoint presentations are a superior medium of communication, which is why they have become standard in so many fields. In 2017, an online poll of social media users in the UK was reported to show that PowerPoint remains as popular with young tech-savvy users as it is with the Baby Boomers," with almost four out of five saying that "PowerPoint was a great tool for making presentations remains popular with young tech-savvy users as it is with the Baby Boomers, in part because "PowerPoint was a great tool for making presentations," and with more than two-thirds saying that PowerPoint is highly visual, bridges the world of yesterday with the visual future of tomorrow."[154] Also in 2017, the Managerial Communication Group of MIT Sloan School of Management polled their incoming MBA students, finding that "results underscore just how differently this generation communicates as compared with older workers."[155] Fewer than half of respondents reported doing any meaningful, longer-form writing at work, and even that mostly did so very infrequently, but "85 percent of students reported producing presentations as a meaningful part of their job responsibilities. Two-thirds report that they present on a weekly basis—so it's no surprise that in-person presentations is the top skill they hope to improve."[155] One of the researchers concluded: "We're not likely to see future workplaces with long-form writing. The trend toward presentations and, as we don't see any sign of that slowing down."[155] Use of PowerPoint by the U.S. military services began slowly, because they were invested in mainframe computers, MS-DOS PCs and specialized military-specification graphic output devices, all of which PowerPoint did not support.[156] But because of the strong military tradition of presenting briefings, as soon as they acquired the computers needed to run it, PowerPoint became part of the U.S. military.[157] By 2000, ten years after PowerPoint for Windows appeared, it was already identified as an important feature of U.S. armed forces culture, in a front-page story in the Wall Street Journal.[158] Old-fashioned slide briefings, designed to update generals on troop movements, have been a staple of the military since World War II. But in only a few short years PowerPoint has altered the landscape. Just as word processing made it easier to produce long, meandering memos, the spread of PowerPoint has unleashed a blizzard of jazzy but often incoherent visuals. Instead of drawing up a dozen slides on a legal pad and running them over to the graphics department, captains and colonels now can create hundreds of slides in the time it used to take to make a few. This meant that they can build in gobbets of sound effects and images that explode like land mines ... PowerPoint became such an ingrained part of the defense culture that it has seeped into the military lexicon. "PowerPoint Ranger" is a derogatory term for a desk-bound bureaucrat more adept at making slides than tossing grenades. U.S. military use of PowerPoint has influenced its use by armed forces of other countries: "Foreign armed services are beginning to get in on the act. You can't speak with the U.S. military without knowing PowerPoint, says Margaret Hayes, an instructor at National Defense University in Washington D.C., who teaches Latin American military officers how to use the software."[158] After another 10 years, in 2010 (and again on its front page) the New York Times reported that PowerPoint use in the military was then "a military tool that has spun out of control"[159] Like an insurgency, PowerPoint has crept into the daily lives of military commanders and reached the level of near obsession. The amount of time spent on PowerPoint, the Microsoft computer-generated charts, graphs and bullet points, has made it a running joke in the Pentagon and in Iraq and Afghanistan. ... Commanders say behind all the fancy slides are some serious concerns that the program stifles discussion, critical thinking and thoughtful decision-making. Not least, it ties up junior officers ... in the daily preparation of slides, be it for a joint Staff meeting in Washington or for a platoon leader's pre-mission combat briefing in a remote corner of Afghanistan. The New York Times account went on to say that as a result some U.S. generals had banned the use of PowerPoint in their operations:[159] "PowerPoint makes us stupid," Gen. James N. Mattis of the Marine Corps, the Joint Forces commander, said this month at a military conference in North Carolina. (He spoke without PowerPoint.) Brig. Gen. H. R. McMaster, who banned PowerPoint presentations when he led the successful effort to secure the northern Iraqi city of Tal Afar in 2005, followed up at the same conference by likening PowerPoint to an internal threat. "It's dangerous because it can create the illusion of understanding and the illusion of control," General McMaster said in a telephone interview afterward. "Some problems in the world are not bullet-izable." Several incidents, about the same time, gave wide currency to discussions by serving military officers about PowerPoint use and the organizational culture that encouraged it.[160][161][162] In response to the New York Times story, Peter Norvig and Stephen M. Kosslyn sent a joint letter to the editor stressing the institutional culture of the military: ". .. many military personnel bemoan the overuse and misuse of PowerPoint. ... The problem is not in the tool itself, but in the way that people use it—which is partly a result of the training in the military to promote misuse."[163] These two generals who had been responsible for some prominent PowerPoint use in the news began in 2017, when James N. Mattis became U.S. Secretary of Defense,[164] and H. R. McMaster was appointed as U.S. National Security Advisor.[165] Musician David Byrne has been using PowerPoint as a medium for his art for years, producing a book and DVD and showing at galleries his PowerPoint-based artwork.[128] Byrne has written: "I've been working with PowerPoint, the ubiquitous presentation software, as an art medium for a number of years. It started off as a joke (this software is a corporate salesmanship, or lack thereof) but then the work took on a life of its own as I realized I could create pieces that were moving, despite the limitations of the medium."[166] In 2005 Byrne toured with a theater piece using a PowerPoint presentation. When he performed it in Berkeley, on March 8, 2005, the University of California news service reported: "Byrne also defended [PowerPoint's] appeal as more than a business tool—as a medium for art and theater. His talk was titled 'I ♥ PowerPoint.' Berkeley alumnus Bob Gaskins and Dennis Austin were in the audience. Eventually, Byrne said, PowerPoint could be the future of operational theater,' with roots in Brechtian drama and Asian puppet theater."[167] After that performance, Byrne described it in his own online journal: "Did the performance ... the audience of IT legends and academics. I was terrified. The guys that originally named PowerPoint to a program were there, what were THEY gonna think? ... [Gaskins] did tell me afterwards that he liked the PowerPoint Art, and that the current crop of artistic movement which believes that the corporate world can be a unique and exceptional source of inspiration for the artist.[169][170] They say: "The pptArt name refers to PowerPoint, the symbolic and abstract language developed by the corporate world which has become a universal and highly symbolic communication system beyond cultural and borders."[171] The wide use of PowerPoint had, by 2010, given rise to " ... a subculture of PowerPoint enthusiasts [that] is teaching the old application new tricks, and may even be turning a dry presentation format into a full-fledged artistic medium,"[172] by using PowerPoint animation to create "games, artworks, anime, and movies."[173] PowerPoint Viewer is the name for a series of small free programs that can be used on computers without PowerPoint installed, to view, project, or print (but not create or edit) presentations.[174] The first version was introduced with PowerPoint 3.0 in 1992, to enable electronic presentations to be projected using conference-room computers automatically managed all linked video and audio files plus needed fonts when exporting a presentation to a disk or flash drive or network location,[177] and also included a copy of a revised PowerPoint Viewer application so that the result could be presented on other PCs without installing anything.[178] The latest version that runs on Windows "was created in conjunction with PowerPoint 2010, but it can also be used to view newer presentations created with PowerPoint 2013 and PowerPoint 2016. ... All transitions, videos and effects appear and behave the same when viewed using PowerPoint Viewer as they do when viewed using PowerPoint 2010." It supports presentations created using PowerPoint 97 and later.[174] The last version that runs on Macintosh is PowerPoint 98 Viewer for Classic Mac OS and Classic Environment, for Macs supporting System 7.5 to Mac OS X Tiger (10.4).[179] It can present presentations of PowerPoint 3.0, 4.0, and 8.0 (PowerPoint 98), and viewing presentations created on the Mac can be supported using PowerPoint Viewer for Windows.[180] As of May 2018[update], the last versions of PowerPoint Viewer for all platforms have been retired by Microsoft; they are no longer available for download and no longer receive security updates.[181] The final PowerPoint Viewer "for Classic Mac OS (1998)[183][184] are available only from archives. The recommended replacements for PowerPoint Viewer: "On Windows 10 PCs, download the free ... PowerPoint Mobile application from the Windows Store,"[181] and "On Windows 7 or Windows 8/8.1 PCs, upload the file to OneDrive and view it for free using ... PowerPoint Online."[181]

File formats: Innovations included: color, more and necessary features, find and replace, spell-checking, color schemes for presentations, guide to color selection, ability to change color retrospectively, shaded coloring for fills.[239] "It added color 35 mm slides, printing that resulting files over a modem to Genigraphics for imaging on Genigraphics' film recorders and photo processing in Genigraphics labs overnight. Genigraphics film recorders could be purchased directly and operated in-house.[239] System requirements: (Mac) Original Macintosh or better, System 4.1 or higher, 1 MB RAM. Windows: 286 PC or higher, Windows 3.0, 1 MB RAM.[242] PowerPoint 3.0 For Windows. May 1992;[190] for Mac: September 1992[191] Part of Microsoft Office 3.0 and Microsoft Office for Mac 3.0. Innovations included: the first application designed exclusively for the new Macintosh 3.1 platform, full support for TrueType fonts (new in Windows 3.1), presentation templates, editing in outline view, new drawing, including freeform tool, autolayouts, flip, rotate, align, and transforming of imported pictures with drawing primitives to create multiple versions.[239] Genigraphics itself switched to PowerPoint.[241] System requirements: (Mac) Original Macintosh or better, System 4.1 or higher, 1 MB RAM. Windows: 286 PC or higher, Windows 3.0, 1 MB RAM.[242] PowerPoint 4.0 For Windows: January 1994;[192] for Mac: October 1994[193] Part of Microsoft Office for Windows and Microsoft Office for Mac 4.2. Innovations included: autolayouts, Word tables, rehearsal mode, hidden slides, and the "AutoContent Wizard".[240] Introduced a standard "Microsoft Office" look and feel (shared with Word and Excel), with status bar, toolbars, tooltips. Full OLE 2.0 with in-place activation.[239] System requirements: 386 PC or higher, Windows 3.1, 4 MB RAM.[242] PowerPoint 95 (version 7.0). For Windows: July 1995[194] Part of Microsoft Office for Windows 95. Innovations included: 32-bit for Windows 95, animation effects, each cut customizable; Black and white view, autocorrect, insert symbol, meeting support features such as "Meeting Minder".[240] "A complete rewrite of the product from the ground up in C++, full object model with internal VBA programming".[239] System requirements: 386 DX PC or higher, Windows 95, 8 MB RAM. (Mac) PowerPC Mac or better, 16 MB RAM.[242] PowerPoint 97 For Windows: November 1996[196] Part of Microsoft Office 97. Innovations included: custom animation with motion paths, animated GIFs, animation and action buttons, presentation conferencing, save to web, picture bullets, animated GIFs, aliased fonts.[240] System requirements: Windows 95 or Windows NT, 8 MB RAM. (Mac) PowerPC Mac or better, 8 MB RAM.[242] PowerPoint 98 (version 8.0). For Mac: January 1998[198] Part of Microsoft Office 98 Macintosh Edition. First Office version for Mac OS X.[200] System requirements: (Mac) 68020 Mac or better, System 7.5 or better.[242] PowerPoint 2000 (version 9.0) For Windows: June 1999[201] Part of Microsoft Office 2000. Innovations included: an Office Clipboard that could hold multiple objects; automatic "Click and Type" formatting; self-repairing capabilities, tri-pane editing view with outline, slide, and notes.[240] System requirements: Pentium 75MHz+, Windows 95 or higher, 20 MB RAM. (Mac) PowerPC Mac 120MHz+ or better, MacOS 8.5 or higher, 32 MB RAM.[242] PowerPoint 2001 (version 10.0) For Mac: November 2001[204] Part of Microsoft Office for Mac X. Introduced version for Mac OS X.[206] System requirements: (Mac) PowerPC Mac or better, Mac OS X 10.1 or better, 128 MB RAM.[242] PowerPoint 2002/XP (version 10.0) For Windows: May 2001[202] Part of Microsoft Office XP. Innovations included: multiple monitor support, "Package for CD" to write presentations onto CD.[208] "Microsoft Producer for PowerPoint 2003" was a free plug-in from Microsoft, using a video camera, that "creates Web page presentations, with talking head narration, coordinated and timed to your existing PowerPoint presentation" for delivery over the web.[244] The Genigraphics service service had become a presentation for imaging as 35mm slides was removed from this version.[245] System requirements: Pentium 233Mhz+, Windows 2000 or better, 64 MB RAM. (Mac) PowerPC Mac G3 or better, OS X 10.2.8 or later, 256 MB RAM.[242] PowerPoint 2007 (version 12.0) For Windows: January 2007;[210] for Mac: January 2008[213] Part of Microsoft Office 2007 and Microsoft Office for Mac 2008. Innovations included a new user interface (the "Office Fluent") employing a changeable "ribbon" of tools across the top to replace menus and toolbars, SmartArt graphics, many graphical improvements in text and drawing, improved "Presenter View" (from 2003), widescreen slide formats. The "AutoContent Wizard" was removed from this version.[247] A major change in PowerPoint 2007 was from a binary file format (.ppt) to a new XML-based file format (.pptx).[248] (Mac) 500 MHz processor or better, Windows XP SP2 or later, 256 MB RAM.[248] (Mac) 500 MHz processor or higher, MacOS X 10.4.9 or later, 512 MB RAM.[249] PowerPoint 2010 (version 14.0) For Windows: June 2010;[214] for Mac: October 2010[218] Part of Microsoft Office 2010 and Microsoft Office for Mac 2011. Innovations included: Single document interface (SDI), ribbon customization, reading view, redesign of "Backstage" functions (under File menu), save as video, insert video from web, embed video and audio, enhanced editing for video and for pictures, broadcast slideshow.[250] System requirements: (Windows) 500 MHz processor or higher, Windows XP with SP3 or later, 256 MB RAM. (Mac) 500 MHz processor or higher, MacOS X 10.5.8 or later, 1 GB RAM.[249] PowerPoint 2013 (version 15.0) For Windows: January 2013;[227] for iPad: March 2014[228] for iPad: March 2014;[228] for Android: July 2013[227] for Web: February 2014[228] Part of Microsoft Office 2013 and Microsoft Office for Mac 2016. Innovations included widescreen 16:9 aspect ratio, online collaboration to multiple authors, user interface redesigned for touch screens, improved audio, video, and transitions, Presenter View, Clipart collections (replaced with online royalty-free BingImage search), account sign-in to roam settings.[253][254] System requirements: (Windows) 1 GHz processor or faster, x86 or x64-bit processor with SSE2 instruction set, Windows 7 with SP1 or later, 1 GB RAM.[255] For Mac: September 2015[238] and later newest version: January 2018[238] Part of Microsoft Office 2016 and Microsoft Office for Mac 2016. Innovations included: Change default slide shape to 16:9 aspect ratio, online collaboration to multiple authors, user interface redesigned for touch screens, improved audio, video, and transitions, "Zoom" to slides or sections in slideshow,[257] and "PowerPoint Translator" for real-time translation.[258][259] System requirements: (Windows) 1 GHz processor or faster, 2-core, 32-bit or 64-bit, 2 GB RAM.[262] (Mac) Intel processor, Mac OS X 10.10 or later, 4 GB RAM.[256] PowerPoint 16.0 For Windows: June 2015;[231] for Mobile: July 2015;[236] for iOS: July 2015;[232] for Android: September 2015;[237] and Windows Store: January 2018[238] Part of Microsoft Office 2016. Innovations included: Change default slide shape to 16:9, "PowerPoint Designer", Morph transition, real-time collaboration, "Zoom" to slides or sections in slideshow,[257] and "PowerPoint Translator" for real-time translation.[258][259] System requirements: (Windows) 1 GHz processor or faster, 2-core, 32-bit or 64-bit, 2 GB RAM.[262] (Mac) Intel processor, Mac OS X 10.10 or later, 4 GB RAM.[256] me" to search for program controls.[265], "PowerPoint Designer", and "Morph" transition, real-time collaboration.[258] The default file format, added in version.[264] This set of formats were long deprecated, but an open-source libmwaw (used by LibreOffice) exists to read them.[265] A stable binary format (a .ppt file, like all earlier binary formats) that was shared as the default in PowerPoint 97 through PowerPoint 2003 for Windows and in PowerPoint versions 8.0 through 11.0 for Macintosh, also in 1992, to enable it to be shared between versions.[266][267] The specification document is actively maintained and can be freely downloaded.[266] because, although no longer the default, that binary format can be read

written by some later versions of PowerPoint than PowerPoint 2016.[261] After the stable binary format was adopted, versions of PowerPoint continued to be able to read and write differing file formats from earlier versions.[264] But beginning with PowerPoint 2007 and PowerPoint 2008 for Mac (PowerPoint version 12.0), this was the only binary format available for saving: PowerPoint 2007 (version 12.0) no longer supported saving binary file formats used earlier than PowerPoint 97 (version 8.0), ten years before.[268] The ".pps" and ".ppsx" file extensions are technically the same as ".ppt" and ".pptx", except they are launched as presentation instead of for editing by default.[269] Binary interchange extensions[261] .ppt, PowerPoint 97–2003 binary presentation .pps, PowerPoint 97–2003 binary slide show .pot, PowerPoint 97–2003 binary template Binary media types[262] by design application/vnd.ms-powerpoint .pps, application/vnd.ms-powerpoint .pot, application/vnd.ms-powerpoint The big change in PowerPoint 2007 and PowerPoint 2008 for Mac (PowerPoint version 12.0) was that the stable binary file formats of 97–2003 was replaced as the default by a new zipped XML-based Office Open XML format (.pptx files).[270] Microsoft's explanation of the benefits of the change included: smaller file sizes, up to 75% smaller than comparable binary documents; security, through being able to identify and exclude executable macros and personal data; less chance to be corrupted than binary formats; and easier interoperability for exchanging data among Microsoft and other business applications.[271] XML filename convention[272] by design .pptx, PowerPoint 2007 XML presentation .ppsx, PowerPoint 2007 XML slide show .ppam, PowerPoint 2007 XML add-in .potx, PowerPoint 2007 XML template .pptm, PowerPoint 2007 XML macro-enabled template XML media types[262] .pptx, application/vnd.openxmlformats-officedocument.presentationml.presentation .pptm, application/vnd.ms-powerpoint.presentation.macroEnabled.12 .ppsx, application/vnd.openxmlformats-officedocument.presentationml.slideshow .ppsm, application/vnd.ms-powerpoint.slideshow.macroEnabled.12 .ppam, application/vnd.ms-powerpoint.addin.macroEnabled.12 .potx, application/vnd.openxmlformats-officedocument.presentationml.template .potm, application/vnd.ms-powerpoint.template.macroEnabled.12 The specification for the new format was published as an open standard, ECMA-376,[272] through Ecma International Technical Committee 45 (TC45).[273] The Ecma 376 standard was approved in December 2006, and was submitted for standardization through ISO/IEC JTC 1/SC 34 WG4 in early 2007. The standardization process was contentious.[274] It was approved as ISO/IEC 29500 in early 2008.[275] Copies of the ISO/IEC standard specification are freely available.[276][277] These define two related standards known as "Transitional" and "Strict". The two standards were progressively adopted by PowerPoint: PowerPoint version 12.0 (2007, 2008 for Mac) could read and write Transitional format, but could neither read nor write Strict format. PowerPoint version 14.0 (2010, 2011 for Mac) could read and write Transitional, and also read but not write Strict. PowerPoint version 15.0 and later (beginning 2013, 2016 for Mac) can read and write both Transitional and Strict formats. The reason for the two variants was explained by Microsoft:[278] ... the participants in the ISO/IEC standardization process recognized two objectives with competing requirements. The first objective was for the Open XML standard to provide an XML-based file format that could fully support conversion of the billions of existing Office documents without any loss of features, content, text, layout, or other information, including embedded data. The second was to specify a file format that did not rely on Microsoft-specific data types. They created two variants of Open XML—Transitional, which supports previous Microsoft-specific data types, and Strict, which does not rely on them. Prior versions of Office (that is, 2007) have supported reading and writing Transitional Open XML, and Office 2010 can read Strict Open XML documents. With the addition of write support for Strict Open XML, Office 2013 provides full support for both variants of Open XML. The PowerPoint .pptx file format (called "PresentationML" for Presentation Markup Language) contains separate structures for all the complex parts of a PowerPoint presentation.[279][280] The specification documents on the web for the widespread use of PowerPoint, the standardized file formats are considered important for the long-term access to billions of history collections and archives, according to the U.S. Library of Congress.[282] PowerPoint 2013 and PowerPoint 2016 provide options to set default saving to ISO/IEC 29500 Strict format, but the initial default setting remains Transitional, for compatibility with legacy features incorporating binary data in existing documents.[283] PowerPoint 2013 or PowerPoint 2016 will both open and save files in the former binary formats (.ppt), for compatibility with older versions of the program (but not versions older than PowerPoint 97).[261][284] In saving to older formats, new versions of PowerPoint will check to assure that no features have been introduced into the presentation which are incompatible with the older formats.[270] PowerPoint 2013 and 2016 will also save a presentation in many other file formats, including PDF format, MPEG-4 or WMV video, as a sequence of single-picture files (using image formats including GIF, JPEG, PNG, TIFF, and some other formats), and as a single presentation file in which all slides are replaced with pictures. PowerPoint with both open and save files in OpenDocument Presentation format (ODP) for compatibility.[261] Microsoft Office password protection: Encryption for Current Channel releases - Office release notes.[*] Microsoft Learn. Archived from the original on January 10, 2024. Retrieved January 10, 2024. ^ "C++ in MS Office". cppcon. July 17, 2014. Archived from the original on November 7, 2019. Retrieved June 25, 2019. ^ Microsoft Corp. (2017). "Language Accessory Pack for Office". Archived from the original on August 28, 2017. Retrieved August 28, 2017. ^ "Microsoft PowerPoint: Slideshows and Presentations APKs". APKMirror. ^ "Update history for Office for Mac". Microsoft Docs. June 13, 2023. ^ "Microsoft Powerpoint on the Mac App Store". Retrieved March 2, 2023. ^ "Microsoft PowerPoint". App Store. March 22, 2025. ^ a b c "Microsoft PowerPoint". Encyclopedia Britannica. November 25, 2013. Archived from the original on October 8, 2013. Retrieved September 25, 2017. ^ a b "Microsoft PowerPoint, virtual presentation software developed by Robert Gaskins, Tom Rudkin and Dennis Austin for the American computer software company Forethought, Inc. The product, initially named Presenter, was released for the Apple Macintosh in 1987. ^ Mace, Scott (March 2, 1969). "Presentation Package Lets Users Control Look". InfoWorld. Vol. 9, no. 9. p. 5. ISSN 0199-6649. Archived from the original on May 27, 2024. Retrieved August 24, 2017. ^ "The $395 program will be shipped to dealers on April 20, Forethought said. ^ "Microsoft PowerPoint". Encyclopædia Britannica. November 25, 2013. Archived from the original on October 8, 2013. Retrieved September 25, 2017. ... in 1987 ... [i]n July of that year, the Microsoft Corporation, in its first significant software acquisition, purchased the rights to PowerPoint for $14 million. ^ a b "Microsoft Buys Software Unit". Company News. New York Times. Vol. CXXXV, no. 46,717. July 31, 1987. ISSN 0362-4331. Archived from the original on May 27, 2024. Retrieved August 25, 2017. ... the acquisition of Forethought is the first significant one for Microsoft, which is based in Redmond, Wash. Forethought would remain in Sunnyvale, giving Microsoft a Silicon Valley presence. ^ Flynn, Laurie (June 19, 1989). "The Microsoft Office Bundles 4 Programs". InfoWorld. Vol. 11, no. 25. p. 37. ISSN 0199-6649. Archived from the original on May 27, 2024. Retrieved August 24, 2017. ^ a b c d Austin, Dennis (2001). "PowerPoint Version Timeline (to PowerPoint 7.0, 1995)" (PDF). GBU Wizards of Menlo Park. Archived August 24, 2017. ^ Gaskins, Robert (2012). Sweating Bullets: Notes about Inventing PowerPoint. Vinland Books. ISBN 978-0-9851424-0-7. Archived (PDF) from the original on June 24, 2017. Retrieved August 12, 2017. ^ Thielsch, Meinald T.; Perabo, Isabel (May 2012). "Use and Evaluation of Presentation Software" (PDF). Technical Communication. 59 (2): 112–123. ISSN 0049-3155. 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"PowerPoint Turns 20, As Its Creators Ponder A Dark Side to Success". Portals. Wall Street Journal. Vol. CCXLIX, no. 143 (US ed.). p. B1. ISSN 0099-9660. Archived from the original on May 28, 2024. Retrieved August 22, 2017. PowerPoint's two creators ... Robert Gaskins was the visionary entrepreneur ... with major programming done by Dennis Austin, an old charm ... ^ Brock, David C. (October 31, 2017). The Improbable Origins of PowerPoint". History. IEEE Spectrum. 54 (11) (published November 2, 2017): 42–49. doi:10.1109/MSPEC.2017.8093800. ISSN 0018-9235. S2CID 270113411. Archived from the original on November 2, 2017. Retrieved August 24, 2017. PowerPoint was not at all in their original plan. ... [the founders] Pohlman and Campbell's idea was to bring a graphical-software innovation like the Xerox Alto's to the hugely popular but graphically challenged [IBM] PC. ... Rather than liquidate the firm, management and investors decided to "restart" Forethought ... . ^ a b c d e f g Gaskins, Robert (2012). Sweating Bullets: Notes about Inventing PowerPoint. Vinland Books. ISBN 978-0-9851424-0-7. Archived (PDF) from the original on June 24, 2017. Retrieved August 12, 2017. ^ Brock, David C. (October 31, 2017). "The Improbable Origins of PowerPoint". History. IEEE Spectrum. 54 (11) (published November 2, 2017): 42–49. doi:10.1109/MSPEC.2017.8093800. ISSN 0018-9235. S2CID 270113411. Archived from the original on November 2, 2017. Retrieved August 24, 2017. Forethought began to develop a software product of its own. This new effort was the brainchild of Robert Gaskins, an accomplished computer scientist who'd been hired to lead Forethought's product development. ^ Gaskins, Robert (August 14, 1984). "Presentation Graphics for Overhead Projection" (PDF). PowerPoint History Documents. Archived (PDF) from the original on November 6, 2015. 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