Continue

What is a Decision Table : Decision tables are used in various engineering fields to represent complex logical relationships. This testing is a very effective tool in testing the software and its requirements management. The output may be dependent on many input conditions and decision tables give a tabular view of various combinations of input conditions and these conditions are in the form of True(T) and False(F). Also, it provides a set of conditions and its corresponding actions required in the testing. Parts of Decision Tables : In software testing, the decision table has 4 parts which are divided into portions and are given below : Condition Stubs : The conditions are listed in this first upper left part of the decision table that is used to determine a particular action or set of actions.Action Stubs : All the possible actions are given in the first lower left portion (i.e, below condition stub) of the decision table.Condition Entries : In the condition entry, the values are inputted in the upper right portion of the decision table. In the condition entries part of the table, there are multiple rows and columns which are known as Rule.Action Entries : In the action entry, every entry has some associated action or set of actions in the lower right portion of the decision table and these values are called outputs. Types of Decision Tables : The decision tables are categorized into two types and these are given below: Limited Entry : In the limited entry decision tables, the condition entries are restricted to binary values.Extended Entry : In the extended entry decision table, the condition entries have more than two values. The decision tables use multiple conditions where a condition may have many possibilities instead of only true and false are known as extended entry decision tables. Applicability of Decision Tables : The order of rule evaluation has no effect on the resulting action.The decision tables can be applied easily at the unit level only.Once a rule is satisfied and the action selected, n another rule needs to be examined.The restrictions do not eliminate many applications. Example of Decision Table Based testing : Below is the decision table of the program for determining the largest amongst three numbers in which its input is a triple of positive integers (x,y, and z) and values are from the interval [1, 300]. Table 1 : Decision Table of largest amongst three numbers : ConditionsR1R2R3R4R5R6R7R8R9R10R11R12R13R14c1: x > = 1?FTTTTTTTTTTTTTc2: x = 1?FTTTTTTTTTTTc4: x = 1?FTTTTTTTTTc6: z y?TTTTFFFFc8: y>z?TTFFTTFFc9: z>x?TFTFTFTFRule Count256128643216811111111a1 : Invalid inputXXXXXXa2 : x is largestXXa3 : y is largestXXa4 : z is largestXXa5 : ImpossibleXX Software Testing Tutorial What is Software Testing? Principles of Software testing - Software Testing Software Development Life Cycle (SDLC) Software Testing Life Cycle (STLC) Types of Software Testing Levels of Software Testing Test Maturity Model - Software Testing Decision table testing is a software testing technique used to test system behavior for different input combinations. This is a systematic approach where the different input combinations and their corresponding system behavior (Output) are captured in a tabular form. That is why it is also called as a Cause-Effect table where Cause and effects are captured for better test coverage.A Decision Table is a tabular representation of inputs versus rules/cases/test conditions. It is a very effective tool used for both complex software testing and requirements management. A decision table helps to check all possible combinations of conditions for testing and testers can also identify missed conditions easily. The conditions are indicated as True(T) and False(F) values. Lets learn with an example.Example 1: How to make Decision Base Table for Login ScreenLets create a decision table for a login screen.The condition is simple if the user provides the correct username and password the user will be redirected to the homepage. If any of the input is wrong, an error message will be displayed.ConditionsRule 1Rule 2Rule 3Rule 4Username (T/F)FTFTPassword (T/F)FFTTOutput (E/H)EEEHLegend:T Correct username/passwordF Wrong username/passwordE Error message is displayedH Home screen is displayedInterpretation:Case 1 Username and password both were wrong. The user is shown an error message.Case 2 Username was correct, but the password was wrong. The user is shown an error message.Case 3 Username was wrong, but the password was correct. The user is shown an error message.Case 4 Username and password both were correct, and the user navigated to the homepage While converting this to a test case, we can create 2 scenarios,Enter the correct username and correct password and click on login, and the expected result will be the user should be navigated to the homepageAnd one from the below scenarioEnter wrong username and wrong password and click on login, and the expected result will be the user should get an error messageEnter correct username and wrong password and click on login, and the expected result will be the user should get an error messageEnter wrong username and correct password and click on login, and the expected result will be the user should get an error messageAs they essentially test the same rule. Example 2: How to make Decision Table for Upload ScreenNow consider a dialogue box that will ask the user to upload a photo with certain conditions like You can upload only .jpg format imagefile size less than 32kbresolution 137*177. If any of the conditions fails the system will throw a corresponding error message stating the issue and if all conditions are met photo will be updated successfullyLets create the decision table for this case.ConditionsCase 1Case 2Case 3Case 4Case 5Case 6Case 7Case 8Format.jpg.jpg.jpg.jpgNot .jpgNot .jpgNot .jpgNot .jpgSizeLess than 32kbLess than 32kb>= 32kb>= 32kbLess than 32kbLess than 32kb>= 32kb>= 32kbresolution137*177Not 137*177137*177Not 137*177137*177Not 137*177137*177Not 137*177OutputPhoto uploadedError message resolution mismatchError message size mismatchError message size and resolution mismatchError message for format mismatchError message format and resolution mismatchError message for format and size mismatchError message for format, size, and resolution mismatchFor this condition, we can create 8 different test cases and ensure complete coverage based on the above table.Upload a photo with format .jpg, size less than 32kb and resolution 137*177 and click on upload. Expected result is Photo should upload successfullyUpload a photo with format .jpg, size less than 32kb and resolution not 137*177 and click on upload. Expected result is Error message resolution mismatch should be displayedUpload a photo with format .jpg, size more than 32kb and resolution 137*177 and click on upload. Expected result is Error message size mismatch should be displayedUpload a photo with format .jpg, size more than equal to 32kb and resolution not 137*177 and click on upload. Expected result is Error message size and resolution mismatch should be displayedUpload a photo with format other than .jpg, size less than 32kb and resolution 137*177 and click on upload. Expected result is Error message for format mismatch should be displayedUpload a photo with format other than .jpg, size less than 32kb and resolution not 137*177 and click on upload. Expected result is Error message format and resolution mismatch should be displayedUpload a photo with format other than .jpg, size more than 32kb and resolution 137*177 and click on upload. Expected result is Error message for format and size mismatch should be displayedUpload a photo with format other than .jpg, size more than 32kb and resolution not 137*177 and click on upload. Expected result is Error message for format, size and resolution mismatch should be displayed Decision Table Testing is Important because it helps to test different combinations of conditions and provides better test coverage for complex business logic. When testing the behavior of a large set of inputs where system behavior differs with each set of inputs, decision table testing provides good coverage and the representation is simple so it is easy to interpret and use.In Software Engineering, boundary value and equivalent partition are other similar techniques used to ensure better coverage. They are used if the system shows the same behavior for a large set of inputs. However, in a system where for each set of input values the system behavior is different, boundary value and equivalent partitioning technique are not effective in ensuring good test coverage.In this case, decision table testing is a good option. This technique can make sure of good coverage, and the representation is simple so that it is easy to interpret and use.This table can be used as the reference for the requirement and for functionality development since it is easy to understand and cover all the combinations.The significance of this technique becomes immediately clear as the number of inputs increases. Number of possible Combinations is given by 2 ^ n , where n is the number of Inputs. For n = 10, which is very common in the web-based testing, having big input forms, the number of combinations will be 1024. Obviously, you cannot test all but you will choose a rich sub-set of the possible combinations using decision based testing technique.Advantages of Decision Table TestingWhen the system behavior is different for different inputs and not the same for a range of inputs, both equivalent partitioning, and boundary value analysis wont help, but a decision table can be used.The representation is simple so that it can be easily interpreted and is used for development and business as well.This table will help to make effective combinations and can ensure better coverage for testingAny complex business conditions can be easily turned into decision tablesIn a case we are going for 100% coverage typically when the input combinations are low, this technique can ensure the coverage.Disadvantages of Decision Table TestingThe main disadvantage is that when the number of inputs increases the table will become more complexDecision Table Testing Video Click here if the video is not accessible Read More

What is decision table testing. Decision table based testing. How to write test cases for table. Test case table example. Decision table test case.