

Software Testing

Test Cases



[Agenda]

- What is a test case?
- Why do we need test cases?
- Test case attributes
- The well-written test case is...
- Test execution & results
- Test case maintenance
- Test management systems (TMS)



Name	Successful purchase item with Visa CC	
Priority	High	
Description	Test case validates that user can successfully purchase item in the store with Visa CC	
Prerequisites	1) User is logged in www.mywebshop.com 2) User has registered Visa CC with sufficient balance	
Test Data	Available user: Username: usr01 / Password: supersecretpass	
Step ID	Actions	Expected Result
1	1) Navigate to Best offers page 2) Select any of the available offers and press 'Add to Cart' button 3) Select 'Visa' payment method and provide mandatory details 4) Click 'Make payment' button 5) Verify result	"Purchase successful" notification message is shown
2	1) Verify user's balance section	Balance is decreased with the amount of the purchase

[What is a test case?]

- **Test cases** are written instructions what and how to test, in order to validate a specific behavior of the system/application under test.

ISTQB Definition:

A set of input values, execution preconditions, expected results and execution post-conditions, developed for a particular objective or test condition, such as to exercise a particular program path or to verify compliance with a specific requirement.



[Why do we need test cases?]

- **Traceability** – what was tested, how, by whom
- **Measure** test coverage against requirements
- **Separate** design phase from execution phase



[Test case attributes]

- ID
- Name
- Preconditions
- Steps (Actions + Expected result)
- Priority



** Many additional attributes can be added, dependent on project needs and test management system (TMS) configuration.*



[The well-written test case is...]

- **Correct** – actions and expected results correspond to requirements
- **Clear** – does not leave much room for interpretation
- **Focused** – checks a specific situation; does not duplicate validations done in other cases
- **Independent** – does not depend on other *test cases* to be executed
- **To the point** – uses short and simple sentences / bullets
- **Prioritized** – follows clearly defined prioritization process
- **Easy to find** – has meaningful, non-duplicate name that reveals its purpose
- **Reviewed** – by at least one more member of the team
- **Traceable** – point to requirements they validate



[Test case types]

Common separation of test case by nature of expected result:

- **Positive**
 - *Example: Validate login with correct credentials*
- **Negative**
 - *Example: Validate login with incorrect credentials*
- **Failover/Destructive**
 - *Example: Validate login during server restart is in progress*



[Test suites]

- **Test suite** - a combination of test cases that check a concrete part of our product or a concrete specification
- Different ways of constructing test suites:
 - By specification area object of testing
 - By components of testing
 - By types of testing
 - By priority



Test case execution

- The process of following the test case steps and comparing expected with actual result during testing is called **test execution**
- Result of test execution is reflected in the test **Status**
 - PASSED** – Actual Result matches Expected Result
 - FAILED** – Actual result does not match Expected Result
 - BLOCKED** – preconditions not fulfilled (environment problems, defects, etc.)
- Failed test cases need proper investigation - causes of failure may be real software bugs, or other testing incidents (change in specification, incorrect expected result, etc.)
- Linking found defects to the related test execution improves traceability



[Test case maintenance]

- Test cases and test suites are 'living' documentation and need to be kept up-to-date
- Common reasons to update / add test cases:
 - Requirements change
 - Escaped/production defects are found
 - As a result of review process



[Test management systems]

- A test management system (TMS) is a specialized software used to manage tests (automated or manual) that have been previously specified by a test procedure
- TMS provide test case creation, maintenance, execution and reporting capabilities
- Various TMS solutions, both paid and free license

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