**PART A**

**EXPERIMENT NO. 10**

**A.1 AIM: -** To Design Test Cases

**A.2 Outcome**

After successful completion of this experiment students will be able to design the test cases

1. Learn different testing methods and design test cases for their project

**A.3 Theroy**

* Testing is the process of analyzing a system or system component to detect the differences between specified (required) and observed (existing) behavior.
* Activities involved in testing are:
  + Establish the test objectives
  + Design the test cases
  + Write the test cases
  + Test the test cases
  + Execute the tests
  + Evaluate the test results
  + Change the system
  + Do regression testing

1. Select what has to be tested
   * Analysis: Completeness of requirements
   * Design: Cohesion
   * Implementation: Source code
2. Decide how the testing is done
   * Review or code inspection
   * Proofs (Design by Contract)
   * Black-box, white box,
   * Select integration testing strategy (big bang, bottom up, top down, sandwich)
3. Develop test cases
   * A test case is a set of test data or situations that will be used to exercise the unit (class, subsystem, system) being tested or about the attribute being measured
4. Create the test oracle
   * An oracle contains the predicted results for a set of test cases

The test oracle has to be written down before the actual testing takes place.

**Important testing documents are**

* Test plan
  + Focuses on managerial aspects of testing
  + Documents the scope, approach, resources and schedule of testing activities
  + Requirements and the components to be tested are identified in this document
* Test case specification
  + Writing **effective test cases** is a skill and that can be achieved by some experience and in-depth study of the application on which test cases are being written
* Test Incident Report
  + Each execution of each test is documented by test incident report
  + Actual results of the tests and differences from the expected output are recorded
* Test summary reports
  + It lists all the failures discovered during the tests that need to be investigated
  + Developers analyze and prioritize each failure
  + And plan for changes in the system.
  + These changes in turn can trigger new test cases and new test executions

Test Case Specification Template:

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test case id** | **Test cases** | | **Priority** | **Preconditions** | **Input test data** | **Steps to be executed** | **Expected results** | **Actual results** | **Pass/fail** | **Comments** |
| 1 | | Test if user is able to login successfully. | A | User must be registered already | correct username,correct password | 1)Enter input(correct )username and password on the respective fields 2)click submit/login | User must successfully login to the web page | (note down the results you have observed) |  |  |
| 2 | | Test if unregistered users is not able to login to the site | A |  | incorrect username,incorrect password | 1)Enter input(incorrect )username and password on the respective fields 2)click submit/login | Proper error must be displayed and prompt to enter login again | (note down the results you have observed) |  |  |

**A.4 Task:**

**For Selected case Study write appropriate test cases.**

**PART B**

(PART B: TO BE COMPLETED BY STUDENTS)

*(Students must submit the soft copy as per the following segments within two hours of the practicals. The soft copy must be uploaded on Blackboard LMS or emailed to the concerned Lab in charge Faculties at the end of practical; in case Blackboard is not accessible)*

|  |  |
| --- | --- |
| Roll No: C101 | Name: Samkeet Shah |
| Class: C | Batch: B3 |
| Date of Experiment: | Date of Submission: |
| Grade: |  |

**B.1 Conclusion**

Understood the need and requirement of a test case specification and implemented the same for the selected project case by performing the tests.

Test Case Specification Template:

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test case id** | **Test cases** | | **Priority** | **Preconditions** | **Input test data** | **Steps to be executed** | **Expected results** | **Actual results** | **Pass/fail** | **Comments** |
| 1 | | Test if the user is able to login successfully. | Very High | User must be registered already | Username : [Shahsamkeet7699@gmail.com](mailto:Shahsamkeet7699@gmail.com) and Password : Pass@123 used | 1. Enter correct Username and Password  2. Click login | User must successfully login to the E-challan View | User Login Successful | Pass | Correct |
| 2 | | Check for Unregistered user | High | Valid email id & alphanumeric password required | New email id: : samkeet.shah@[769@gmail.com](mailto:769@gmail.com), Password : Pass@123 and Name : Sam Shah | 1. Enter input (incorrect) username & password on the resp. fields  2. Add name of new user  3. Click login | New user added to the database and access to E-Challan View | New user added & login successful | Pass | User added to DB |