# Laboratory 9

Title of the Laboratory Exercise: Unit Testing with JUnit

1. Introduction and Purpose of Experiment

Students will apply JUnit framework to implement test cases and test the developed software

1. Aim and Objectives

Aim

* To develop and apply test cases in a Java project using JUnit

Objectives

At the end of this lab, the student will be able to

* + Analyse failure conditions
  + Create Unit test cases
  + Develop test suites in Java using JUnit framework

1. Experimental Procedure

* Work in teams of 7 students
* Each team should read the developed code and identify failure cases and correct cases of execution
* Each team will then split workload and develop and implement test cases individually
* Each individual will then write their lab manual, documenting their observations

1. Calculations/Computations/Algorithms

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| --- | --- | --- | --- | --- | --- | --- |
| **Requirement No. And Description** | **Test Case Number** | **Procedure** | **Input** | **Expected Output** | **Actual Output** | **Status** |
| FR1  The software must allow the user to login | TC1 | The user must enter the username or email-id in username field and the password in password field and then click the submit button. | ECP  ***Email-id:***  Invalid1:  133@xyz  Valid:  abc@xyz.com  Invalid2:  #123h.com  Invalid 3:  Abcx$yz  ***Password:***  Invalid1:  <5  123hgys  Valid:  4-10  abcxyz123  Invalid2:  >10  12ghvhva | **The application will allow the user to home page** |  |  |
| FR2-  The software should display the list of products based on category | TC2 | After login into the software the user should click on the display button and press enter. | Valid: bag  Invalid: bus | Valid:  Display all the available bags.  Invalid:  Display the bus which is not present. |  |  |
| FR3 –  The Software must display complete product details of a valid product. | TC3 | The software should be able to display and products and it should be able to display the details of the products. | Valid: black and grey colured bagpack, padded mesh back, 2 main compartments with zip closure.  Invalid: pink coloured monkey | Display the complete details of the available bag  Invalid:  Display item which is not available. |  |  |
| FR3-  The software allows users to search and sort the valid products. | TC4 | Launch the application and select the search option and enter the item name after choosing search option. | Valid: Bag  Invalid: Toy | Valid:  Display all the available bags.  Invalid:  Display item not present” |  |  |
|  | TC5 | Select the sort option and choose based on what it should sort the items. | Valid: discount  Invalid: rating | Valid: display the items based on sort. |  |  |
| FR5 –  The software must allow valid users to add valid products to cart. | TC6 | Software must allow the user to shop by category and it must allow the user to add the selected item to cart. | Valid:  Only one cart  Invalid:  Two carts | Valid: display the selected item in the cart. |  |  |

1. Presentation of Results
2. Analysis and Discussions
3. Conclusions
4. Comments

1. Limitations of Experiments

2. Limitations of Results

3. Learning happened

4. Recommendations

|  |  |  |
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| **Component** | **Max Marks** | **Marks Obtained** |
| **Viva** | **6** |  |
| **Results** | **7** |  |
| **Documentation** | **7** |  |
| **Total** | **20** |  |