



# VIT<sup>®</sup>

## Vellore Institute of Technology

(Deemed to be University under section 3 of UGC Act, 1956)

CSE 3001

# Software Engineering

## LAB ASSESSMENT - 5

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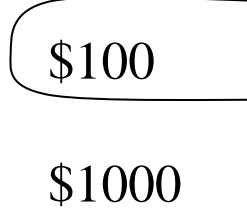
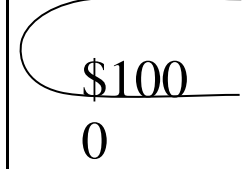
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**Q1. A savings account in a bank has a different rate of interest depending on the balance in the account. In order to test the software that calculates the interest due, we can identify the ranges of balance values that earn the different rates of interest. For example, 3% rate of interest is given if the balance in the account is in the range of \$0 to \$100, 5% rate of interest is given if the balance in the account is in the range of \$100 to \$1000, and 7% rate of interest is given if the balance in the account is \$1000 and above,**

- a. Perform boundary value analysis and create test cases that test the boundary cases.**
- b. Partition the given specification into equivalent classes and generate the test case for each class.**

**Ans 1.**

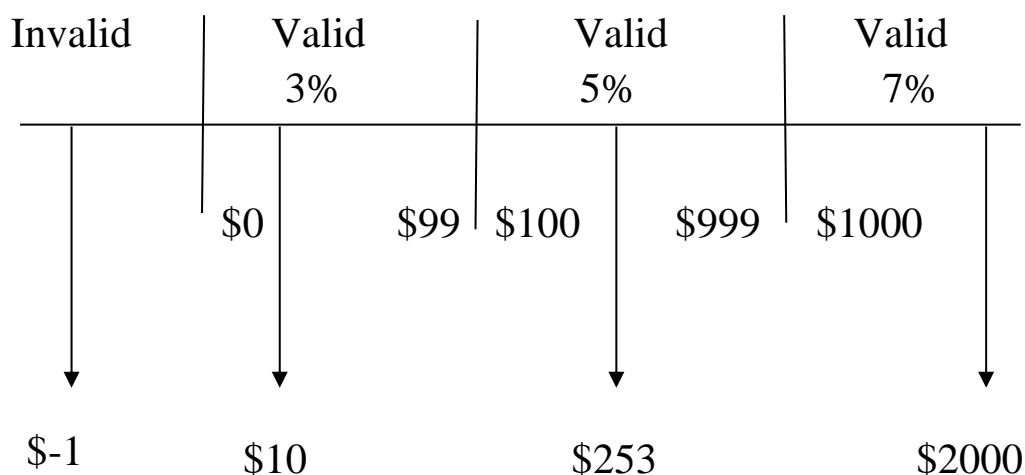
**a) Boundary Value Analysis:**

<b>Invalid</b>	<b>Valid</b>	<b>Valid</b>	<b>Valid</b>
			
<b>0%</b>	<b>3%</b>	<b>5%</b>	<b>7%</b>

**Test Cases of Boundary Cases:**

Test Scenario #	Test Scenario Description	Expected Outcome
1	Boundary Value =\$ -1	System should not accept
2	Boundary Value =\$0	System should accept with rate of 3%
3	Boundary Value =\$99	System should accept with rate of 3%
4	Boundary Value =\$100	System should accept with rate of 5%
5	Boundary Value =\$999	System should accept with rate of 5%
6	Boundary Value =\$1000	System should accept with rate of 7%
7	Boundary Value =\$1001	System should accept with rate of 7%

## b) Equivalent Classes



### Generation of the Test Case:

Test Scenario #	Test Scenario Description	Expected Outcome
1	Amount less than \$0	System Should not Accept
2	Amount between \$0 and \$99	System should accept with rate of 3%
3	Amount between \$100 and \$999	System should accept with rate of 5%
4	Amount greater than or equal to \$1000	System should accept with rate of 7%

**Q2. Identify any software tool and make a note on how to perform testing.**

**Ans 2.**

There are a number of tools to perform testing. Some of them are : Selenium, appium, Xray, TestPad etc.

1. Selenium

Selenium is a framework for automating website and mobile apps tests. This is done by simulating user activities and by taking remote control of browsers. Actions like opening a page, scrolling, clicking on single elements or text fields are all possible. In this manner Selenium offers countless possibilities to automate the process of a website test. These commands can be used in several different programming languages. This is how a test script emerges to check a website's functions: it performs all the actions one after another and evaluates results.

A big advantage of Selenium is its compatibility with common systems, as this is an important requirement for testing desktop devices.

Its Key features include:

- It is one of the best qa tools which offers the support for parallel test execution that reduces the time taken in executing parallel tests.
- Selenium needs very lesser resources when compared to other manual testing tools.
- Test cases prepared using this testing tool can be executed on any OS
- It supports the many known programming languages like Java, Python, C#, Perl, PHP, and JavaScript.

## 2. Appium

Appium is the most popular open-source framework for mobile app automation testing. It allows QAs to automate tests for popular mobile platforms like Android, iOS, and Windows. Appium uses the mobile JSON wire protocol (an extension of Selenium JSON wire protocol) to drive native, mobile web and hybrid applications.

The Appium server is scripted in Node.js and is compatible with leading client libraries like Java, Python, Ruby, PHP, and a few others.

Its Key Features include:

- Test the same application which is going to the marketplace.
- It is a simple application which needs very little memory for our testing process.

Testing Native apps do not need SDK, it offers standard automation APIs which can be used on all types of platforms.

### Q3. Sample generation of any test cases in your project.

Ans 3.

Topic - College Management System (J component Project)

## 1. Student Registration

College Management System					
Test Case ID :	RT_1	Test Designed by : Avnish Tiwari			
Test Priority (Low/Medium/High) :	High	Test Designed Date : 18/05/21			
Module Name :	Registration Window	Test Executed By : Avnish Tiwari			
Test Title :	Register with valid details	Test Execution Date: 18/05/21			
Description :	Test the registration page				
Pre-Conditions :					
Dependencies :					
Step	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)
1	Navigate to the registration page				
2	Provide valid username	User=avnish01	User should be	The user is	Pass
3	Provide valid student name	name=avnish	registered	successfully	
4	Provide valid email	email=avnish@gmail.com		registered	
5	Provide valid password	1234			
6	confirm the password	1234			
7	Click on Register Button				
Post Conditions:					
User is validated with data base and sucessfully registered to website.					

## 2. College Registration

A	B	C	D	E	F
College Management System					
Test Case ID :	RT_2	Test Designed by : Avnish Tiwari			
Test Priority (Low/Medium/High) :	High	Test Designed Date : 18/05/21			
Module Name :	Registration Window for college	Test Executed By : Avnish Tiwari			
Test Title :	Register with valid details	Test Execution Date: 18/05/21			
Description :	Test the registration page				
Pre-Conditions :					
Dependencies :					
Step	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)
1	Navigate to the registration page				
2	Provide valid college_username	User=avnish02	College should be	The College is	Pass
3	Provide valid college name	name=avnish_college	registered	successfully	
4	Provide valid email	email=avnish.college@gmail.com		registered	
5	Provide valid password	1234			
6	confirm the password	1234			
7	Click on Register Button				
Post Conditions:					
College is validated with data base and sucessfully registered to website.					

### 3. Student Login

A	B	C	D	E	F
Project Name :					
College Management System					
Test Case ID :		LT_1	Test Designed by : Avnish Tiwari		
Test Priority (Low/Medium/High) :		High	Test Designed Date : 18/05/21		
Module Name :		Login Window	Test Executed By : Avnish Tiwari		
Test Title :		Login with valid details	Test Execution Date: 18/05/21		
Description :		Test the Login page			
Pre-Conditions : The User should be registered on the website					
Dependencies :					
Step	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)
1	Navigate to the Login page				
2	Provide valid username	User=avnish01	User should be	The user is	Pass
3	Provide valid password	password=1234	Logged In	successfully	
4	Click on Login Button			Logged In	
Post Conditions:					
User is validated with data base and has successfully logged in					

### 4. College Login

A	B	C	D	E	F
Project Name :					
College Management System					
Test Case ID :		LT_2	Test Designed by : Avnish Tiwari		
Test Priority (Low/Medium/High) :		High	Test Designed Date : 18/05/21		
Module Name :		Login Window College	Test Executed By : Avnish Tiwari		
Test Title :		Login with valid details	Test Execution Date: 18/05/21		
Description :		Test the College Login page			
Pre-Conditions : The College should be registered on the website					
Dependencies :					
Step	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)
1	Navigate to the Login page				
2	Provide valid username	User=avnish02	College should be	The College is	Pass
3	Provide valid password	password=1234	Logged In	successfully	
4	Click on Login Button			Logged In	
Post Conditions:					
The college is validated with data base and has successfully logged in					

## 5. College Dashboard

A	B	C	D	E	F
College Management System					
Test Case ID :		DT_2	Test Designed by : Avnish Tiwari		
Test Priority (Low/Medium/High) :		High	Test Designed Date : 18/05/21		
Module Name :		Dashboard for college	Test Executed By : Avnish Tiwari		
Test Title :		Write Details of the college	Test Execution Date: 18/05/21		
Description :		Test the Dashboard page			
Pre-Conditions : The college should be on the database to give details about itself					
Dependencies : the login page should be working to access into dashboard					
Step	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)
1	Navigate to the Dashboard page				
2	Provide valid college name	College= avnish_college	College details should	The College info	Pass
3	Provide fees	fees=100000	registered on the	successfully	
4	Provide courses	courses=btech	dashboard	registered	
5	Provide contact number	1234567890			
6	Provide other details	avg CTC=600000,NIRF rank=8			
7	Click on Submit Button				
Post Conditions:					
College dashboard is upadted successfully and students can view the college					

## 6. Student Dashboard

<b>Project Name :</b>					
<b>College Management System</b>					
<b>Test Case ID :</b>		DT_1	<b>Test Designed by : Avnish Tiwari</b>		
<b>Test Priority (Low/Medium/High) :</b>		High	<b>Test Designed Date : 18/05/21</b>		
<b>Module Name :</b>		Dashboard for Students	<b>Test Executed By : Avnish Tiwari</b>		
<b>Test Title and</b>		Access all the features	<b>Test Execution Date: 18/05/21</b>		
<b>Description :</b>		of the website for student			
<b>Pre-Conditions :</b> The student should be on the database to acess all the features					
<b>Dependencies :</b> the login page should be working to access into dashboard					
<b>Step</b>	<b>Test Steps</b>	<b>Test Data</b>	<b>Expected Result</b>	<b>Actual Result</b>	<b>Status (Pass/Fail)</b>
1	Navigate to the Student Dashboard				
2	Click on view different colleges to get details about all the colleges		User should be able	The user can	Pass
3	click on sort colleges to get details about the colleges you filtered yourself		to access all the	access all the	
4	Click on report College if you think something is wrong with the info provided by the college		functions properly	functions	
<b>Post Conditions:</b>					
User is validated with data base and can easily access the functions he/she wants to use					



## 7. Sort Colleges

A	B	C	D	E	F	G
<b>Project Name :</b>						
<b>College Management System</b>						
<b>Test Case ID :</b>		ST_1	<b>Test Designed by : Avnish Tiwari</b>			
<b>Test Priority (Low/Medium/High) :</b>		High	<b>Test Designed Date : 18/05/21</b>			
<b>Module Name :</b>		Sorting Colleges for Students	<b>Test Executed By : Avnish Tiwari</b>			
<b>Test Title and</b>		Sorting Colleges for Students	<b>Test Execution Date: 18/05/21</b>			
<b>Description :</b>		to ease their task				
<b>Pre-Conditions :</b> The student should be on the database to access all the features						
<b>Dependencies :</b> the login page should be working to access into dashboard and it is dependent on the dashboard module						
<b>Step</b>	<b>Test Steps</b>	<b>Test Data</b>	<b>Expected Result</b>	<b>Actual Result</b>	<b>Status (Pass/Fail)</b>	
1	Navigate to the Sort Colleges and think how you want sort the colleges					
2	Click on different different options you want to sort colleges with like fees,courses,nirf rank etc.		User should be able to sort the colleges	The user can access all the	Pass	
3	Click on the submit button and you'll find all the colleges you needed		properly and should see the correct result	functions		
<b>Post Conditions:</b>						
User is validated and can easily sort the colleges and view the result						

## 8. Report Colleges

A	B	C	D	E	F	G
Project Name :						
College Management System						
Test Case ID :		RT_1	Test Designed by : Avnish Tiwari			
Test Priority (Low/Medium/High) :		High	Test Designed Date : 18/05/21			
Module Name :		Reporting Colleges by Student	Test Executed By : Avnish Tiwari			
Test Title and		Reporting Colleges by Student	Test Execution Date: 18/05/21			
Description :		if the see a wrong information				
Pre-Conditions : The student should be on the database to report the college						
Dependencies : the login page should be working to access into dashboard and it is dependent on the dashboard module						
Step	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)	
1	Navigate to the Report Colleges if you want to report a college					
2	write the college name that you have to report		User should be able	The user can	Pass	
3	Now write the complain that you have like incomplete information,wrong information etc.		to report the colleges and after reviewing the college would	report the colleges with no issue		
4	Now click on submit button and your complain would be reviewed and acted upon		face consequences			
Post Conditions:						
User is validated and can report the colleges						