

# **Noakhali Science & Technology University**



## **Institute Of Information Technology**



**Course Name: Software Testing and Quality Assurance**

**Course Code: SE3210**

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## STLC of Student Management System

### Introduction

Student Management System (SMS) is software application for the education that can be used to managed student information and data. Student Management System manages student information like

- ❖ Student List
- ❖ Registration of new Student
- ❖ Student attendance
- ❖ Student CT exam marks
- ❖ Student Results
- ❖ Class routine

### Phase 1[Requirement Analysis]

This is the very first phase of Software testing Life cycle (STLC). In this phase testing team goes through the Requirement document with both Functional and non- functional requirements details in order to identify the testable requirements.

From our project,

#### Functional Requirements:

1. Add new session
2. View sessions
3. Register new student
4. View students
5. Add CT exam result
6. View CT exam result
7. Add final exam result
8. View final exam result
9. Add class routine
10. View class routine
11. List student's session wise
12. List CT result by session, term, course code
13. List final exam result by session, year, term
14. List class routine by year, term
15. Provide template for ct exam, final exam, class routine.
16. View individual student information
17. View recent activities done by the user

#### Non-functional requirements:

1. Student id and email should be unique
2. Student info such as id, name, session, email, personal mobile number, parent mobile number, gender data must need to be filled up.
3. Student address and date of birth are optional input data.
4. Class routine, CT exam, Final exam result document must need to be in CSV (comma separated value) format.
5. Class routine, CT exam, Final exam result document must need to be within 10 MB size.
6. Track and store only when registering new student, adding session, adding CT exam result, adding final exam result, adding class routine.

**Phase 2[Test Planning & Strategies]**

Test Planning phase starts soon after the completion of the Requirement Analysis phase. In this phase, prepare the Test Plan and Test Strategy documents.

**1.Unit testing**

**Definition:** Test individual unit of SMS

**Tested by:** Developer

**Methodology:** Test individual unit of SMS

**2.Integration and System Testing**

**Definition:** Integration testing test two or more than two integrated models System testing test functional and nonfunctional user requirement.

**Tester by:** Tester

**Methodology:** It is used for integrated model, functional and nonfunctional user requirement.

**3.Performance Testing**

**Definition:** It measure performance / response under critical, load and stress condition

**Tested by:** Tester

**Methodology:** Measure performance under critical, stress and load system

**4.Regression Testing**

**Definition:** Used to uncover new errors in existing functionality after changes have been made.

**Tested by:** Tester

**Methodology:** Test system response after functional enhancements in existing system.

**Phase 3[Test Case Development]**

In this phase we write test cases. Creation of Test Data is done in this phase.

Test Case ID	Test scenario	Test steps	Test data	Expected results	Actual results	Pass/Fail
TC01	Check user login with valid data.	1. Go to student-management website. 2. Enter user name and password. 3. Click 'Sign In' button	User name: demo_01 User password: demo01	User should login into the system and see a dashboard page.	As expected	Pass
TC02	Check user login with invalid data.	1. Go to student-management website. 2. Enter user name and password.	User name: demo_01 User password: demo01	User should not login into the system and will see a error	As expected	Pass

Test Case ID	Test scenario	Test steps	Test data	Expected results	Actual results	Pass/Fail
		3. Click 'Sign In' button.		message.		
TC03	Check user login with valid data	1. Go to student-management website. 2. Enter user mail and password. 3. Click 'Sign In' button.	User mail: demo01@demo01.com User password: demo01	User should login into the system and see a dashboard page.	User can not login into the system and saw an error message.	Fail
TC04	Log out from the system	1. Click on the user name drop down in the navigation bar. 2. Click on the Sign Out drop down item.	Not applicable	User should log out from the system and sign in page will show.	As expected	Pass
TC05	Check teacher list information	1. Click on Teacher navigation item.	Not applicable	User should see a new page with list of teachers in table format.	As expected	Pass
TC06	Check session information	1. Click on 'Session' drop down from the navigation bar. 2. Click on 'View Session Info'.	Not applicable	User should see a new page with the list of available sessions for the department in a table format.	As expected	Pass
TC07	Check add session information with valid data	1. Click on 'Session' drop down from the navigation bar. 2. Click on 'Add New Session'. 3. Enter session and batch. 4. Click on 'Submit' button.	Session: 2017-2018 Batch: 13	User should successfully add the session in the system and a pop-up notification will show.	As Expected	Pass
TC08	Check add session information with invalid data	1. Click on 'Session' drop down from the navigation bar. 2. Click on 'Add New Session'. 3. Enter session and batch. 4. Click on 'Submit' button.	Session: 0909 Batch: 90	User should not be able to add the session information.	As expected	Pass
TC09	Check add session	1. Click on 'Session' drop down from the	Session: 2016-2017	Session information will	As expected	Pass

Test Case ID	Test scenario	Test steps	Test data	Expected results	Actual results	Pass/Fail
	information with existing session information	navigation bar. 2. Click on 'Add New Session'. 3. Enter session and batch. 4. Click on 'Submit' button.	Batch: 12	not be added to the system and a pop-up notification will show that there is already a session added with that information.		
TC10	Check student information	1. Click on 'Student' drop down from the navigation bar. 2. Click on 'Student list' 3. Enter session from session list. 4. Click on 'Submit'.	Session: 2017-2018	A new student page will show. Also a list of students associated with the selected session will show in a table format.	As expected	Pass
TC11	Check register student list information with valid data	1. Click on 'Student' drop down from the navigation bar. 2. Click on 'Register new student' 3. Enter student id, student name, session from session list, student email, student mobile number, parent mobile number, date of birth, select gender type, address. 4. Click on 'Submit'.	Student id: ASH1825211M Student name: test Session: 2016-2017 Email: test1825211@mail.com Mobile: 01666666688 Parent mobile: 01666666688 Date of birth: 03 March 1999 Gender: Male Address: Test	A new student information will be added.	As expected	Pass
TC12	Check register student list information with invalid student id	1. Click on 'Student' drop down from the navigation bar. 2. Click on 'Register new student' 3. Enter student id, student name, session from session list, student email, student mobile number, parent	Student id: ASHM Student name: test Session: 2016-2017 Email: test1825211@mail.com Mobile:	Student information will not be added to the system.	Student information added into the system.	Fail

Test Case ID	Test scenario	Test steps	Test data	Expected results	Actual results	Pass/Fail
		mobile number, date of birth, select gender type, address. 4. Click on 'Submit'.	01666666688 Parent mobile: Date of birth: 03 March 1999 Gender: Male Address: Test			
TC13	Check register student list information with existing student information	1. Click on 'Student' drop down from the navigation bar. 2. Click on 'Register new student' 3. Enter student id, student name, session from session list, student email, student mobile number, parent mobile number, date of birth, select gender type, address. 4. Click on 'Submit'.	Student id: ASH1825211M Student name: test Session: 2016-2017 Email: test1825211@mail.com Mobile: 01666666688 Parent mobile: Date of birth: 03 March 1999 Gender: Male Address: Test	Student information will not be added to the system and a pop-up message will show that student already registered.	As expected	Pass
TC14	Check existing CT exam result	1. Click on 'CT Exam' drop down from the navigation bar. 2. Click on 'View CT exam result' 3. Select session, term, course code from the list. 4. Click on 'Submit'.	Session: 2017-2018 Term: 1 Course Code: CSE1101	A table with the exam score will show for all the student in the selected session.	Nothing is showing after providing the information.	Fail
TC15	Check add CT exam result with valid input file	1. Click on 'CT Exam' drop down from the navigation bar. 2. Click on 'Add CT exam result' 3. Select session, term, course code from the list. 4. Upload a result CSV file. 5. Click on 'Submit'.	Input file: test.csv Session: 2017-2018 Term: 1 Course Code: CSE1101	CT exam result CSV file will be uploaded with the following session, term and course code.	As expected	Pass
TC16	Check add CT	1. Click on 'CT Exam'	Session: 2017-	No exam result	As expected	Pass

Test Case ID	Test scenario	Test steps	Test data	Expected results	Actual results	Pass/Fail
	exam result with no input file	drop down from the navigation bar. 2. Click on 'Add CT exam result' 3. Select session, term, course code from the list. 4. Click on 'Submit'.	2018 Term: 1 Course Code: CSE1101	will be uploaded.		
TC17	Check download template CT exam result CSV file	1. Click on 'CT Exam' drop down from the navigation bar. 2. Click on 'Add CT exam result' 3. Click on 'Download template CSV'.	Not applicable.	A download pop-up will show.	As expected.	Pass
TC18	Check existing final exam result	1. Click on 'Final result' drop down from the navigation bar. 2. Click on 'View final result' 3. Select session, year, term from the list. 4. Click on 'Submit'.	Session: 2017-2018 Year: 1 Term: 1	A table with list of students and list of courses will show associated with the selected session, year and term.	Nothing is showing	Fail
TC19	Check add final exam result with valid input file	1. Click on 'Final result' drop down from the navigation bar. 2. Click on 'Add final exam result' 3. Select session, year term from the list. 4. Upload a result CSV file. 5. Click on 'Submit'.	Session: 2017-2018 Year: 1 Term: 1 Input file: exam_1_1.csv	Final exam result CSV file will be uploaded with the following session, term and year.	Nothing is showing	Fail
TC20	Check add final exam result with no input file	1. Click on 'Final result' drop down from the navigation bar. 2. Click on 'Add final exam result' 3. Select session, year term from the list. 4. Click on 'Submit'.	Session: 2017-2018 Year: 1 Term: 1	No exam result will be uploaded.	As expected	Pass
TC21	Check download	1. Click on 'Final result' drop down from	Not applicable	A download pop-up will	As expected	Pass



Test Case ID	Test scenario	Test steps	Test data	Expected results	Actual results	Pass/Fail
	template final exam result CSV file	the navigation bar. 2. Click on 'Add final exam result' 3. Click on 'Download template CSV'.		show.		
TC22	Check existing class routine	1. Click on 'Class routine' drop down from the navigation bar. 2. Click on 'See existing routine' 3. Select year, term from the list. 4. Click on 'Submit'.	Year: 1 Term: 1	A table will be shown with the time and the week day.	As expected	Pass
TC23	Check add class routine with valid input file	1. Click on 'Class routine' drop down from the navigation bar. 2. Click on 'Add new class routine' 3. Select year and term from the list. 4. Upload a routine CSV file. 5. Click on 'Submit'.	Year: 1 Term: 1 Input file: routine_1_1.csv	New routine will be added with the associated year and term.	As expected	Pass
TC24	Check add routine with no input file	1. Click on 'Class routine' drop down from the navigation bar. 2. Click on 'Add new class routine' 3. Select year and term from the list. 4. Click on 'Submit'.	Year: 1 Term: 1	No exam result will be uploaded.	As expected	Pass
TC25	Check download template class routine CSV file	1. Click on 'Class routine' drop down from the navigation bar. 2. Click on 'Add new class routine' 3. Click on 'Download template CSV'.	Not applicable	A download pop-up will show.	As expected	Pass
TC26	Check add CT exam result with invalid file	1. Click on 'CT Exam' drop down from the navigation bar. 2. Click on 'Add CT exam result'	Input file: test.png Session: 2017-2018 Term: 1	No exam result will be uploaded and show and error message.	It does add the CT exam result and did not show the error message.	Fail

Test Case ID	Test scenario	Test steps	Test data	Expected results	Actual results	Pass/Fail
		3. Select session, term, course code from the list. 4. Upload a result CSV file. 5. Click on 'Submit'.	Course Code: CSE1101			
TC27	Check add final exam result with invalid input file	1. Click on 'Final result' drop down from the navigation bar. 2. Click on 'Add final exam result' 3. Select session, year term from the list. 4. Upload a result CSV file. 5. Click on 'Submit'.	Session: 2017-2018 Year: 1 Term: 1 Input file: exam_1_1.png	No exam result will be uploaded.	As expected	Pass
TC28	Check add class routine with valid input file	1. Click on 'Class routine' drop down from the navigation bar. 2. Click on 'Add new class routine' 3. Select year and term from the list. 4. Upload a routine CSV file. 5. Click on 'Submit'.	Year: 1 Term: 1 Input file: routine_1_1.png	No exam result will be uploaded.	As expected	Pass

#### Phase 4[ Environment Setup]

This phase includes the setup or installation process of software and hardware which is required for testing the application.

- ❖ Hardware: Dual Core or above machines
- ❖ Software: Microsoft Windows XP installed

#### Phase 5 [Test Execution and Bug Reporting]

Before starting the Test Execution phase the Test Environment setup should be ready. In Test Execution phase the test cases are executed in the testing environment.

While execution of the test cases the QA team may find bugs which will be reported against that test case. This bug is fixed by the developer and is retested by the QA.

Scenarios	Complexity	Responsible tester	Date of Execution	Status (Pass/Fail)	Bug Id	Severity	Status
1.Add new session	complex	Asif	2/17/22	Pass			
2.View session	low	Saima	2/17/22	Pass			
3.Register new student	complex	Asif	2/27/22	Pass			
4.View Students	low	Saima	2/17/22	Pass			
5.Add CT exam result	Complex	Asif	2/17/22	Pass			
6.View CT exam Result	Medium	Saima	2/17/22	Pass			
7.Add final exam result	Complex	Saima	2/17/22	Fail	1001	High	Adding Fail
8.View Final exam result	Medium	Asif	2/17/22	Fail	1002	Medium	Can't view
9.Add Class routine	Complex	Saima	2/18/22	Pass			
10.View class routine	medium	Asif	2/18/22	Pass			
11.List Student session wise	Medium	Asif	2/18/22	Pass			
12.List CT result by session, term, course code	Complex	Saima	2/18/22	Pass			
13.List final exam result by session, year, term	Complex	Saima	3/17/22	Fail	1003	Complex	Can't listing
14.List class routine by year, term	Complex	Asif	2/18/22	Pass			
15.Provide template for ct exam, class routine.	Complex	Saima	2/18/22	Pass			

16. Provide template for final exam	Complex	Asif	2/18/22	Fail	1004	Complex	Can't provide template
17. View individual student information	Medium	Saima	2/18/22	Pass			
18. View recent activities done by the user	Complex	Asif	2/18/22	Pass			
19. Student id and email should be unique	Medium	Asif	2/19/22	Pass			
20. Student info such as id, name, session, email, personal mobile number, parent mobile number, gender data must need to be filled up.	Complex	Saima	2/19/22	Pass			
21. Student address and date of birth are optional input data.	Low	Asif	2/19/22	Pass			
22. Class routine, CT exam result document must need to be in CSV (comma separated value) format.	Complex	Saima	2/19/22	Pass			
23. Final exam result must need to be in CSV (comma separated value) format.	Complex	Asif	2/19/22	Fail	1005	High	Can't this format
24. Class routine, CT exam result document must	Complex	Saima	2/19/22	Pass			

need to be within 10 MB size							
25.Final exam result document must need to be within 10 MB size	Complex	Saima	2/19/22	Fail	1006	High	Can't add final result document
26.Track and store only when registering new student, adding session, adding CT exam result, adding final exam result, adding class routine.	Complex	Asif	2/19/22	Pass			

**Bug Report**

Specific report that outlines information about what is wrong and needs fixing with software or on a website.

**01.Bug Name: Add final exam result**

Bug Id: 1001

Expected Result: Adding Successfully

Actual Result: Adding Fail

Build Version: 1.0

OS: Windows 10

Severity: High

Priority: High

**02.Bug Name: View final exam result**

Bug Id: 1002

Expected Result: View Successfully

Actual Result: Can't view the final result

Build Version: 1.0

OS: Windows 10

Severity: Medium

Priority: Medium

**03.Bug Name: List final exam result by session, year, term**

Bug Id: 1003

Expected Result: Listing Successfully

Actual Result: Can't listing

Build Version: 1.0

OS: Windows 10

Severity: Complex

Priority: Complex

**04.Bug Name: Provide template for final exam**

Bug Id: 1004

Expected Result: Providing templet Successfully

Actual Result: Can't work this template

Build Version: 1.0

OS: Windows 10

Severity: Complex

Priority: Complex

**05.Bug Name: Final exam result must need to be in CSV (comma separated value) format.**

Bug Id: 1005

Expected Result: Successfully add this format

Actual Result: Can't add this format

Build Version: 1.0

OS: Windows 10

Severity: Complex

Priority: Complex

**06.Bug Name: Final exam result document must need to be within 10 MB size**

Bug Id: 1006

Expected Result: Successfully add this required size

Actual Result: Can't add this required size

Build Version: 1.0

OS: Windows 10

Severity: Complex

Priority: Complex

**Phase 6[Test Cycle Closure]**

In order to start the Test Cycle Closure activity, the Test Execution phase should be completed. In Test Cycle phase the QA team will meet and discuss about the testing artifacts.

Test Cycles	Number of Test Cases	Test Case Executes	Test Cases not execute	Test Cases Pass	Test Cases Fail
Cycle 01	8	8	0	6	2
Cycle 02	10	10	0	8	2
Cycle 03	8	8	0	6	2
Total	26	26	0	20	6

**THE END**