American International University-Bangladesh (AIUB)

Department of Computer Science

Faculty of Science &Technology (FST)

Fall 22 23

Section: C

Software Quality Assurance and Testing

Developing a Test Plan for a University Management System

A report submitted
By

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Software Test Plan

for

University Management System

Version 1.0 approved

Prepared by

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American International University - Bangladesh

01.12.2022

Checked By Industry Personnel

Name:

Designation:

Company:

Sign:

Date:

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Revision History

Revision	Date	Updated by	Update Comments
0.1	2022.11.16	MD.Yasin Sharif Nayeem	First Draft
0.2	2022.11.17	Bayezid Bostami	Second Draft
0.3	2022.11.18	Maruf Hasan	Third Draft
0.4	2022.11.19	MD.Tanvir Ahsan	Fourth Draft

1. TEST PLAN IDENTIFIER:TP_UMS_1.3

2. REFERENCES

1.Software Requirement Specification (SRS) Document

2. project link

https://github.com/Nayeem221/Learning-Webtech-Section--I-Final-/tree/main/Final%20project

3. INTRODUCTION

3.1 Background to the Problem

- Now a days almost every work is done online. So, universities should also have online student portal. Because if any student wants to register any course through offline then it will take a lot of time. Also, if any student wants to contact with faculty, he must find the faculty's contact number or room number. It is not a easy task. It takes time and effort. Also, if any faculty wants to check the grade sheet of any student, then it will take a lot of effort and time through offline. It same for the stuffs of the university.
- The root cause of this problem is unavailability of Online University Management System. If every university had Online management system, then these problems will be solved. This will save time and will help both the students and faculty members. Therefore this problem is so important.

3.2 Solution to the Problem

- As a solution for this problem, we are going to introduce Online University Management System. This will solve the problem.
- We will propose a web base solution for these problems, called Online University Management System. With this system, the student will be able to find any faculty member or the faculty member can see through any students database and the stuffs can check for payments or other managerial works. This is a short discription of our solution that we proposed.

4.REQUEIREMNT SPECIFICATION

4.1System Features

1. Student Portal Login

Functional Requirements

1.1 The software shall allow students to login with their given username and password

1.2 If the username and/or password has been inserted wrong for more than three times, the random verification code will be generated by the system to retry login.

1.3 If the number of login attempt exceed its limit (4 times), the system shall block the user account login for one hour *[optional function]*

Priority Level: High

Precondition: user have valid user id and password

2. Faculty Portal Login

Functional Requirements

2.1 The software will allow faculty members to login with their given username and password

2.2 If the username and/or password has been inserted wrong for more than three times, the random verification code will be generated by the system to retry login.

2.3 If the number of login attempt exceed its limit (4 times), the system shall block the user account login for one hour *[optional function]*

Priority Level: High

Precondition: user have valid user id and password

3. Stuff Portal Login

Functional Requirements

3.1 The software will allow stuff members to login with their given username and password

3.2 If the username and/or password has been inserted wrong for more than three times, the random verification code will be generated by the system to retry login.

3.3 If the number of login attempt exceed its limit (4 times), the system shall block the user account login for one hour *[optional function]*

Priority Level: High
Precondition: user have valid user id and password

4. Student Course Registration

Functional Requirements

4.1 The students can register for course after successfully login to the portal

4.2 The students can take maximum 17 credits per semester

4.3 The students can take minimum 12 credits per semester

Priority Level: Medium

Precondition: student must clear any previous due

5. Student Grade View

Functional Requirements

5.1 Students have to go to login

5.2. Login as a student

5.3. Then students have to go to details

5.4. They have to go to grade info

5.5 They can then search for the desired course grade.

Priority: Medium

Precondition: Student must login first

6. Student Attendance

Functional Requirement

6.1 The user has to login as a student

6.2 Then students have to go to portal

6.3 Then they have to go to Attendance

Priority: Low

Precondition: Student must login with valid id and pass

7. Staff salary Report

Functional Requirement

7.1 User has to go to login
7.2. The user has to login as a Staff
7.3. Then the user has to go to salary report

Priority: Medium

Precondition: User has to login as staff with valid id and pass

8. Give Grade Report

Functional requirement

8.1 User has to login as faculty

8.2 Then the user has to go to the give grade section

8.3 After that the user has to submit the grade

Priority: High

Precondition: User has to login as faculty with valid pass and id

4.2 System Quality Attributes

1.Efficiency: Only a minimum of 20% of the processor and RAM used by the software. The web application will be able to respond to the user right away if there are lots of users

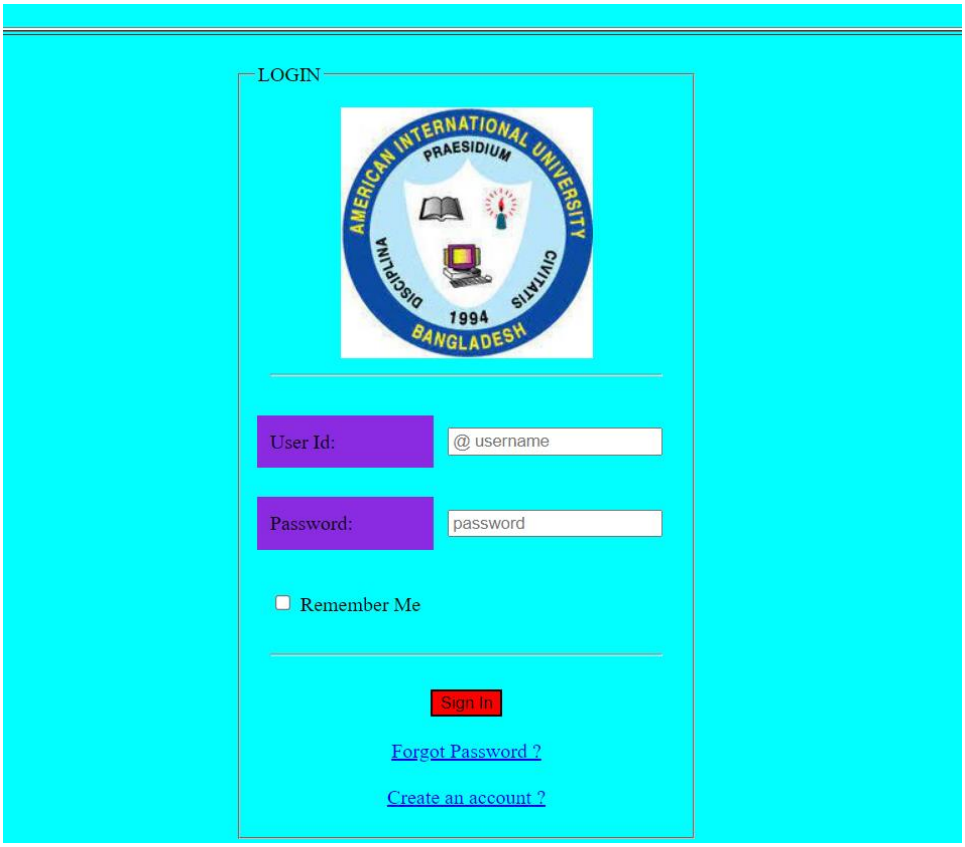
2. Availability: This web application will always be available. A notification will be provided if any issues arise.

3. Usability: A skilled user may submit a complete request for adding an event, deleting a member, and verifying membership in within two minutes. They can learn a new skill in five to ten minutes with some training.

4. This online application is portable and usable on a variety of mobile platforms. (Windows, iOS, and Android).

5. Robustness: This web application will automatically lock users out of the system after 10 minutes of inactivity. Additionally, once logged in, the user can just pick up where they left off.

4.3 System Interface

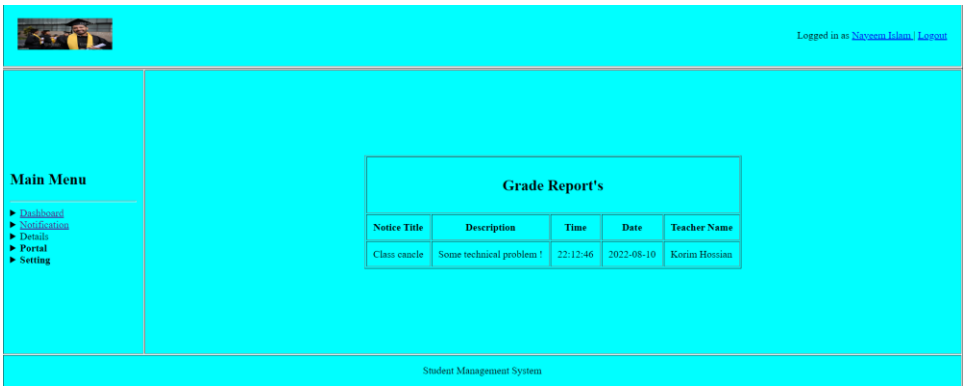


Give appropriate valid username and password.

Fill all the necessary data .In the Full name field first letter must be capital alphabet.password contains 8-16 letters.mobile number must not exceed 11 digits.Email cannot be correct without @.

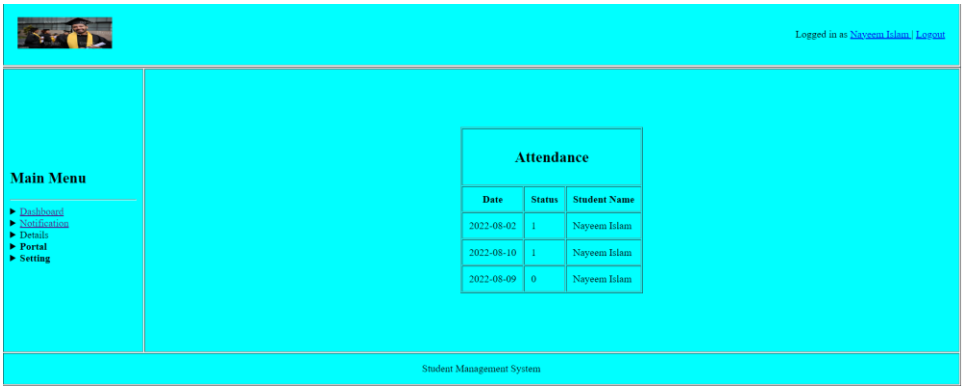
This is the dashboard of the website

Login as a Student

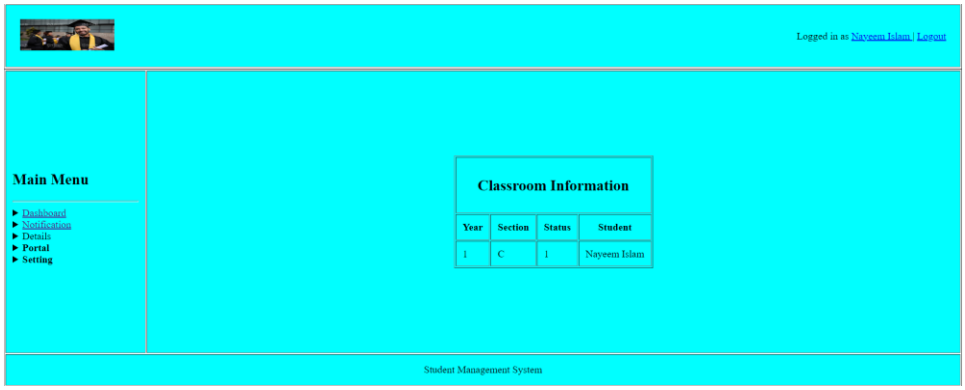


Student can access to the grade report

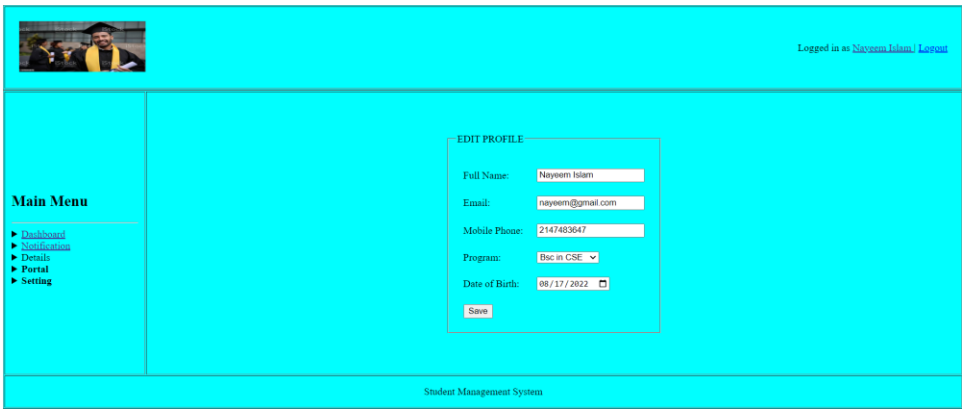
Student can see his profile



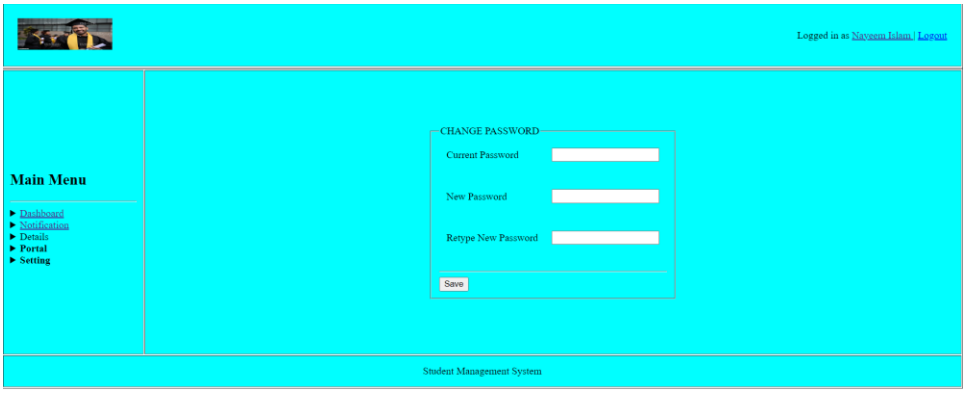
Student can see his attendence



Student can knojw about classroom information



Student can edit his profile



Student can change his password

Dashboard of Satff

Staff can see his salary information .

4.4 Project Requirements

- Time - 2 Months (Estimated)
- Budget - 3 Lac (Estimated) BDT

- Need as team member minimum - 04 members.

Project Stages	Development	Percentage of overall Budget	300000 BDT
Documentation		10%	30000
Design		7%	21000
Implementation		25%	75000
Test plan		10%	30000
Unit testing		15%	45000
Integration testing		15%	45000
System testing		10%	30000
Acceptance testing		8%	24000

5. FEATURES NOT TO BE TESTED

1.Student's classroom information

2.Student's grade Report

3.Staff time scheduling

4.Dashboard of the website

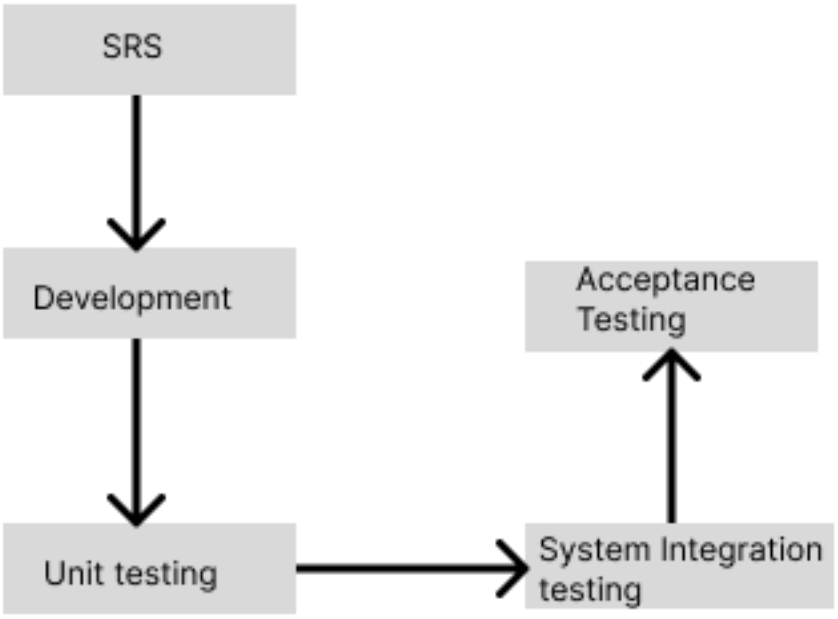
5.Staff salary report

6.Staff's password

6•TESTING APPROACH

Both manual testing and automated testing are types of testing approaches that we learned about. Manual testing is a testing technique that is carried out by hand to find flaws without the aid of automated scripts or tools. Specialized tools are used by software test automation to manage tests. Execution, contrasting the outcomes with those anticipated. Both types of will be utilized in this project. Testing strategy

6.1Testing Levels



In this project, we'll put a test strategy for the university management system into practice. We must adhere to three main testing stages for this. It is necessary to address these testing phases.

- **White box** testing is sometimes referred to as transparent box testing, clear box testing, and structural testing. It is a technique for testing software that examines an application's internal logic or operations. In order to verify that internal operations are carried out in accordance with specifications and that all internal modules are correctly implemented, white-box testing necessitates a tester to step through the code line by line. White-box testing can be used to test the functionality of our university management system as it is being developed. There are various types of white box testing, and we can use this sort of testing in our test preparation.

  Unit Testing is a software development technique in which the smallest tested elements of an application, is called unit, are separately and independently scrutinized for proper operation. One of the fundamental early-stage procedures is unit testing. Software developers and occasionally QA employees use this testing methodology when the software is still in the development stage. Unit tests are one of the general procedures conducted for each activity since they assist eliminate basic and simple issues. Therefore, we can make a test case and run a unit test after

finishing each unit and module to determine whether the module functions as expected. There are static and dynamic unit tests for unit testing.

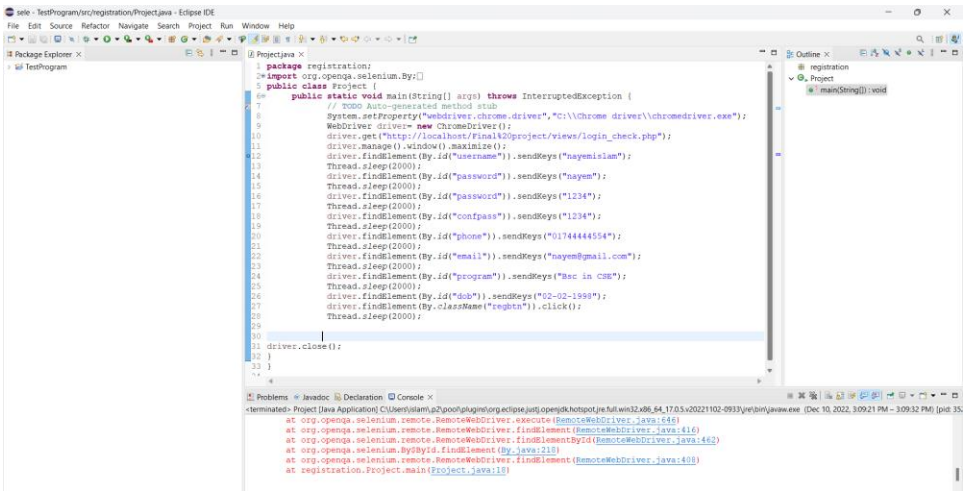
The **Static Analysis** step contains testing some of the static elements in our code. It is a test of the internal structure of the application, rather than functional testing. This step is performed to find one of the defects or errors that can occur in our application code. This step is important to rule out simple errors early in the testing process. **Dynamic Analysis** is the next step in static analysis in a typical path test. Dynamic analysis adopts the opposite approach and is executed while a program is in operation. Dynamic analysis helps us analyze and run the source code according to our requirements. The final stage of the step helps in analyzing the output without affecting the process.

We will use **SIT**, also known as the **System Integration System**, to create our **university management system**. SIT is mostly used to examine how various modules interact with one another when integrated into a larger system. SIT entails the comprehensive testing of a system that is made up of numerous subsystem components or aspects. The procedure is carried out following unit testing and will be repeated each time a new module is introduced to the system. The interface between the system's components is the main focus of SIT test cases.

Additionally, we will perform the Acceptance Testing at the end. It is a procedure of quality control that establishes how well an application is received by end users. Our development staff will assist the end users in doing it. They will determine whether or whether our system satisfies all user needs. Beta testing, application testing, field testing, or end-user testing are all examples of acceptance testing, depending on the company.

6.2 Test Tools

We have done automated testing by selenium.



6.3 Meetings

Every week should be set aside for meetings in order to ensure that the project is completed quickly and delivered on time. A testing team will gather to evaluate the project's development and keep it current during project review. As soon as possible, checking for patterns and problems with bugs. Additionally, the head of the test team meets with each week, development and project managers

7.TEST ITEMS

- Transaction menu selection
- Conditional verifications
- Number of times the pin can be entered before it is rejected

Project Name: University Management System			Test Designed by: MD Yasin Sharif Nayeem	
Test Case ID: UMS_101			Test Designed date:16-11-2022	
Test Priority (Low, Medium, High): High			Test Executed by:MD Yasin Sharif Nayeem	
Module Name: Login Session			Test Execution date:16-11-2022	
Test Title: verify login with valid username and password				
Description: Test website login page				
Precondition (If any): User must have valid username and password				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Enter username 3. Enter password 4. Click submit	Username: nayeem1 Password: 11111111	User should login into the application	As expected,	Pass
Post Condition: User is validated with database and successfully login to account. The account session details are logged in the database.				

- Withdrawal amount cap Printing transaction data
- prompting for alternative transactions
- prompting for timely card ejection
- canceling transactions
- enabling routine maintenance
- enabling the addition of cash
- facilities being made available
- user and admin access; system apologies

Test Case 1:

Test Case 2:

Project Name: University Management System			Test Designed by: MD Yasin Sharif Nayeem	
Test Case ID: UMS_102			Test Designed date:15-11-2022	
Test Priority (Low, Medium, High): High			Test Executed by:MD Yasin Sharif Nayeem	
Module Name: Registration			Test Execution date:15-11-2022	
Test Title: verify the Registration Process				
Description: Test Registration Process				
Precondition (If any): User must insert valid usename,password,Email,mobile number and necessary data to do registration				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Go to Registration 3. Fill the necessary file 4. Click sign up	Username: Password:	User should Registration into the application	As expected,	Pass
Post Condition: User is validated with database and successfully login to account. The account session details are logged in the database.				

Test Case 3:

Project Name: University Management System			Test Designed by:Bayezid Bostami	
Test Case ID: UMS_103			Test Designed date:17-11-2022	
Test Priority (Low, Medium, High): Low			Test Executed by:Bayezid Bostami	
Module Name: Student			Test Execution date:17-11-2022	
Test Title: view notification				
Description: View notification				
Precondition (If any): user need to login successfully to perform the action				

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1.Go to login 2.login as a Student 3.Go to notification 4.view Notification	Username: nayeem1 Password: 11111111	User can see the notification	As expected,	Pass
Post Condition: User is validated with database and successfully login to account. The account session details are logged in the database.				

Test Case 4:

Project Name: University Management System			Test Designed by:Bayezid Bostami	
Test Case ID: UMS_104			Test Designed date:17-11-2022	
Test Priority (Low, Medium, High): Medium			Test Executed by:Bayezid Bostami	
Module Name: Student			Test Execution date:15-11-2022	
Test Title: verify the grade reports				
Description: Find the course and view the grade report				
Precondition (If any): user need to login successfully to perform the action				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1.Go to login 2.Login as a student 3.Go to details 4.Go to grade info 5.search for the desired course grade.	Username: nayeem1 Password: 11111111	User can access to the grade report	As expected,	Pass
Post Condition: User is validated with database and successfully login to account. The account session details are logged in the database.				

Test case 5:

Project Name: University Management System	Test Designed by: Maruf Hasan
Test Case ID: UMS_105	Test Designed date:19-11-2022
Test Priority (Low, Medium, High): Medium	Test Executed by:Maruf Hasan

Module Name: Student			Test Execution date:19-11-2022	
Test Title: verify the Student Profile				
Description: verify the student profile view,edit,change name,password.				
Precondition (If any): user need to login successfully to perform the action				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1.Go to login 2.Login as a student 3.Go to portal 4.Go to student info	Username: nayeem1 Password: 11111111	User can able to change the profile	As expected,	Pass
Post Condition: User is validated with database and successfully login to account. The account session details are logged in the database.				

Test Case 6:

Project Name: University Management System			Test Designed by: Maruf Hasan	
Test Case ID: UMS_106			Test Designed date:19-11-2022	
Test Priority (Low, Medium, High): low			Test Executed by:Maruf Hasan	
Module Name: Student			Test Execution date:19-11-2022	
Test Title: verify the regular Attendence				
Description: verify the Attendence				
Precondition (If any): user need to login successfully to perform the action				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1.Go to login 2.Login as a student 3.Go to portal 4.Go to Attendence	Username: nayeem1 Password: 11111111	User can able to access to the Attendence	As expected,	Pass
Post Condition: User is validated with database and successfully login to account. The account session details are logged in the database.				

Test Case 7:

Project Name: University Management System			Test Designed by: MD.Tanvir Ahsan	
Test Case ID: UMS_107			Test Designed date:20-11-2022	
Test Priority (Low, Medium, High): High			Test Executed by:MD.Tanvir Ahsan	
Module Name: Student			Test Execution date:20-11-2022	
Test Title: verify the Student Password				
Description: verify the student password.Change the student password				
Precondition (If any):user need to login successfully to perform the action				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1.Go to login 2.Login as a student 3.Go to settings 4.Go to change password	Username: nayeem1 Password: 11111111	User can able to access to the settings	As expected,	Pass
Post Condition: User is validated with database and successfully login to account. The account session details are logged in the database.				

Test Case 8:

Project Name: University Management System			Test Designed by: MD.Tanvir Ahsan	
Test Case ID: UMS_108			Test Designed date:20-11-2022	
Test Priority (Low, Medium, High): Medium			Test Executed by:MD.Tanvir Ahsan	
Module Name: Staff			Test Execution date:20-11-2022	
Test Title: verify the salary report				
Description: verify the salary report				
Precondition (If any):user need to login successfully to perform the action				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)

1.Go to login 2.Login as a Staff 3.Go to salary report	Username: test Password: 11111111	User can able to access to the salary report	As expected,	Pass
Post Condition: User is validated with database and successfully login to account. The account session details are logged in the database.				

8.ITEM PASS/FAIL CRITERIA

To determine whether this project was successful or unsuccessful, we must establish the pass/fail criteria. We can conclude the project was successful if the majority of the tests were connected to the requirements and 80% or more of them were completed correctly. Similarly, if only a few failed tests have little to do with the requirements and 75% of the tests pass, the project is considered a success. However, if the relationship between the requirements and the failed test is strong and a passing score of 75% or less is acceptable, then the test should be considered a failure.

9.TEST DELIVERABLES

Test deliverable will cover the outcome done by testing team and these are-

- Unit Test Plan
- Integration Test Plan
- System Test Plan
- Acceptance Test Plan
- Report mock-ups

10.STAFFING AND TRAINING NEEDS

Make a plan for training university students, staff, and faculty first, and include a summary of the training's goals. Create a flowchart for the entire procedure. Don't forget to include vital details, and make adjustments based on your university's successes and failures. This will assist you in coming up with the best plan for the students and employees at your university. After you've completed your analysis, write a staff training handbook and student rules. It is your policies and

processes in their most fundamental form. Your college students Employees have access to the process at any moment to review it. The items that you can add in the manual are listed below. You can include fundamental university policies including course type, a class schedule, attendance requirements, staff working hours, students, and staff information. Additionally, the functions and duties of each employee as well as the interactions between the front-end and back-end. Your personnel will have a clear understanding of how each process should be carried out as a result, which will increase their productivity. Most students rely on mobile apps for university notices, class scheduling, homework, profile editing, university policies, and course delays, among other things. Additionally, university workers rely on their mobile apps to log their working hours, change their profiles, receive university notices, and more. You must educate both staff and kids on the newest technologies if you want to guarantee good results from student attendance and academic performance. Make sure all of your employees and students are familiar with the university system, online learning, feedback apps, and other tools. This will increase their effectiveness in carrying out their jobs. Set a deadline and stick to it. To train your university personnel and students, you can also employ visual training modules. This reduces waste and costs. Be open and honest with your staff and students, and explain how the university's new technology will help them.

11. RESPONSIBILITIES

	Business Analyst	Project Manager	Developer	Tester	Client
Unit Test Documentation & Execution			**X**		
Integration Test Documentation & Execution			**X**	**X**	
System Design Reviews	**X**	**X**		**X**	
Detail Design Review	**X**	**X**		**X**	
Acceptance Test Documentation & Execution				**X**	**X**
Change Control & Regression Testing		**X**		**X**	

12.TESTING SCHEDULE

The project plan includes the following testing activities. The specific dates and times for each task are listed in the project plan timetable. The project schedule and plan also include a list of the individuals required for each procedure. The project manager will coordinate the persons necessary for each assignment, including the test team, development team, management, and customer. This will be done in conjunction with the development and test team leaders.

Serial	Task	Start	ıration
1	Documentation	20-11-22	4 days
2	Design	24-11-22	5 days
3	Implementation	29-11-22	6 days
4	Test plan	05-12-22	5 days
5	Unit testing	10-12-22	5 days
6	Integration testing	15-12-22	5 days
7	System testing	20-12-22	3 days
8	Acceptance testing	23-12-22	4 days

13.PLANNING RISKS AND CONTINGENCIES

The success of a software development project is susceptible to a number of risks. Therefore, we must be ready in every way to guarantee that the project has no risk implications. The university management system is subject to numerous hazards. but we must recognize that risk and divide it into two parts. The first is the most significant risk. and the rest are less significant. The most significant risk is one that we cannot eliminate. must address them first, such as system upkeep, student feedback, software bugs, etc. Less significant hazards include those related to licensing, certification, and reputation management.

A proactive plan that outlines the measures or steps that will be taken in case of an emergency An organization's management and employees must take action in reaction to a potential future occurrence. It is crucial to disaster recovery, risk management, and business continuity.

It enables you to prepare for unforeseen circumstances and lessen their effects. It also describes a strategy for carrying out regular management tasks after the incident.

14.APROVALS

Project Manager	MD.Yasin Sharif Nayeem
Developer	Bayezid Bostami
Test Lead	Maruf Hasan
Test Planner	MD.Tanvir Ahsan
Tester	MD.Yasin Sharif Nayeem Bayezid Bostami Maruf Hasan
End User	Maruf Hasan MD Tanvir Ahsan