Project brief

Project title	Student Management System
Module Name	WSQ Programming Foundations (SF)
Course Name	Postgraduate Diploma in Software Engineering
Project Start date	
Project Submission Date	

Assignment title	Student Management System

Purpose of this assignment

This Assignment is used for the following:

- Summative Assessment of students in the Module 'WSQ Programming Foundations (SF)' of the Course 'Postgraduate Diploma in Software Engineering'.

In this assignment, you have to plan, design, develop and implement a website for a trainingorganization.

This assignment gives you an opportunity to demonstrate your capabilities in the followingareas:

- Create a comprehensive system requirements specification to address the functional, technical, and interface requirements.
- Devise the necessary software components to meet the specified system requirements.
- Choose the appropriate tools and frameworks needed for the development process.
- Implement the software components based on the established design.
- Conduct a thorough evaluation of the implemented solution.

Note: The tasks in this project are designed to test various web development concepts. In realapplications, you might do it based on specific needs.

Project Scenario:

As a Junior Programmer at GreatLearning University, you are part of a team that designs innovative, and user-friendly applications. You are assigned to develop a centralized platform for managing student data and interactions through ArrayLists, the system aims to promote better communication, data accuracy, and informed decision-making.

Project Requirements:

Your application should do the following:

1. Ask the user how many new students will be added
2. The user should be prompted to enter the name, course, and year (between 1 and 3) for each student
3. A student can enroll in the following courses:

Year	Code	Name	Fees
1	101	Programming Foundations	$ 1200
1	102	User Interface Design	$ 1800
2	103	User Experience Design	$ 2000
2	104	Database Design and Implementation	$ 1500
3	105	Web Development Foundations	$ 2000
3	106	Capstone Project	$ 2500

4. The student should have a 5-digit unique ID, with the prefix of the year.
5. The student should be able to view their balance and prompted to pay the outstanding fee.
6. The system should allow the student to pay partially or in full.
7. The student status can be viewed by using their ID.
8. ID, Name, courses enrolled, total fees, and balance should be displayed.
9. Send confirmation email upon enrolment.
10. Unit Test scripts and UAT test scripts

Task 1 (K1):

Create Requirements Specifications for the Project Scenario.
Document it as part of the Project Report.

Task 2 (A1):

Design Software Components for the Project Scenario.
Include it as part of the Project Presentation.

Task 3 (K2, A2):

Provide a screen capture of the Tool you use to create a System Block Diagram.
Create a Basic Block Diagram of the Proposed System.
Include it as part of the Project Presentation.

Task 4 (K3, A3):

Identify what type of data structure you will be using for each of the fields in tabular format.

List the classes developed with the purpose of meeting the functional requirements and interface designed.

Include it as part of the Project Presentation.

Task 5 (K5, A5):

Create a design document for the Proposed System based on Requirements Specification.

Include it as part of the Project Report

Task 6 (K3, A3):

Create an application to do data entry and report for the proposed software.

Include it in the Project Presentation

Task 7 (K4, A4):

Write code to send an email to the students.

Include the code as part of the Project Report.

Task 8 (K4, A4):

Write 5 Unit Test cases and 5 UAT Test Cases to verify and validate that the software is working as expected.

Include the code as part of the Project Presentation.

Evidence checklist	Summary of evidence required by student	Evidence presented
Task 1	Create a Requirements specification document and include it as part of **Project Report**.	K1
Task 2	Design Software Components for the Project Scenario as part of **Project Presentation**.	A1
Task 3	Use design tools to design the software and include a Basic block diagram, Class diagram and include it as part of the **Project Presentation**.	K2, A2
Task 4	Identify what type of data structure you will be using for each of the fields in tabular format. and include it as part of the **Project Presentation**.	K3, A3
Task 5	Create a design Document for the Proposed System based on Requirements Specification and include it as part of the **Project Report**.	K5, A5
Task 6	Create an application to do data entry and report for the proposed software and include it as part of the **Project Presentation**.	K3, A3
Task 7	Write a code to send an email to the students and include the code in the **Project Report**.	K4, A4
Task 8	Write 5 Unit Test cases and 5 UAT Test Cases to verify and validate that the software is working as expected and include it as part of the **Project Presentation**.	K4, A4

Sources of information:

1. Project Technical Environment

The student should perform the project in the following environment

- JDK 11
- Visual Studio Code / IntelliJ IDEA

2. Project Guidelines

You should follow the below guidelines while implementing the Project:

- Implement the project in the technical environment specified in the Project brief
- Follow the format specified for Project Report and Project Presentation
- The project report and presentation should be submitted at least 2 days before the date of Summative Assessment date
- This project is not implemented with a complete development and implementation team and hence you may seek guidance from the tutors regarding the integration issues with other modules / software components
- Present the Milestones in every Tutoring Session and seek the Tutor's feedback and review. Incorporate the feedback in your project.
- Attach all project evidences for each milestone as part of your Project report

3. Project Assumptions

You can make following assumptions can be made while implementing the project:

- This project is not for commercial use and hence not fine-tuned for performance, but it is desirable that you focus on performance issues and address them, if any

4. Sample Questions for Assessor

1. How is Java Code executed?
2. What is a Java Virtual Machine?
3. What is a Class?
4. Explain the architecture of the application.
5. How do you do data entry validation?
6. What Unit Testing method you have used?
7. What standards you have used for documentation and Show the documentation