IS 350T Project Management

NouraStu+ Report

Section:6C3

Group ID:2

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Introduction:

The Noura Students application is an important resource because it helps manage their academic lives and creates a more efficient user experience. The application may have some problems. in improving the Noura Students application is to better meet the needs of students. Students will be able to participate in university events and manage their academic schedules more easily thanks to these modifications.

Problem statement:

The Remember Me feature does not work properly or is ignored when logging in, which makes users must register sufficient data every time they log in. NouraStu+ will take care of this problem by fixing it and ensuring that it is working.

The NouraStu+ application will have a new feature that allows students to join college clubs by setting the college clubs box, after which the desired college will be selected, and all the clubs in this section and all registration links will appear, in addition to information about the club’s events and activities.

It also concerns the study schedules. They will be identical to their form in the banner system, which will ensure that the schedule is displayed accurately with the classes and times mentioned in the official documents. NouraStu+ strives to give Noura's students a seamless experience by arranging the information in an orderly and user-friendly manner.

Also, it will let the interested students contact others to share their interest and skills to gain benefit or benefit others by letting them put their emails or names.

And will add other features so we can know the class type or class availability by class number as an input.

The student will enter the desired class number, and then they will be able to see the type of that class, whether it is a theoretical class or a lab. In the database, will store class information, including their numbers and types. The database will be queried to retrieve the type of the requested class and display it to the student.

The last feature will enable the student to know whether the classes of the requested class are available at the time they are searching for them or not. We will use a calendar or a booking system to track the availability of classes. The classes that are available at the specified time will be displayed in different colors, with green indicating available classes and red indicating unavailable classes.

Methodology:

Adding new features, or "increment", to an already-existing system as opposed to starting from scratch every time is the foundation of the incremental development methodology. The goal of the incremental approach is to break down software requirements throughout the software development lifecycle into discrete units, or increments. Following the establishment of these units, there are various stages of development, including analysis, design, implementation, testing, and maintenance. Each stage builds upon the features created previously, adding and improving upon them until the software is finished.

This strategy has many advantages, such as early value delivery to users and customers, enhanced risk and change management, sustainable delivery, and effective user feedback responses. Moreover, flexibility for changes in the project scope can be achieved by adding new product units or eliminating ones that are unnecessary. Risks can be identified and managed at the unit level to ensure safe and efficient product development [1][2].

Reasons of choosing the incremental model:

1. Achieving immediate value: We use the incremental model to gradually deliver features and functions and provide users with immediate value by dividing the project into separate functions and features. For example, we can deliver the study schedule in the early stages.

2. Adapting to changing requirements: It is natural for the project to change over time in response to the students' interactions and opinions. Using the incremental model, we can easily develop and adapt to these variables.

3. Reducing risks: By dividing the project into small parts, we are making it easier to manage individual risks, which means that errors will not affect the project as a whole and can be solved separately

PROJECT CHARTER	
Project title: NouraStu+.	
Project Sponsor: PNU management.	**Date Prepared:** 14-3-2024.
Project Manager: Najd Alharbi.	**Project Customer:** PNU Students.

Project Purpose:

Making students experience easier and adding features that will help them during their studies.

High-Level Project Description:

The goal for this project is to give students the easiest experiences possible by gathering all necessary features into one place.

One of the most important features is ‘remember me’ which allows user to have their username entered automatically and securely and ‘face ID’ to make the password entry quicker, It will also add students schedules to the app organized the same way as the banner.

Another feature will let students input a class number, to check if it is lab or a normal class. Similarly, another feature will enable users to select a floor number, showing which classes are occupied and which are empty.

Since student social skills are an important part, the application will provide a section for students to input their interests, talents, and level, to help similar students to get to know each other. This feature will also be helpful for graduation projects.

Also since clubs are an important part from university experience, the project will add a feature enabling students to select their college and view a list of available clubs, along with detailed information about each one.

Project Boundaries:

This project will focus on the PNU Students application only.

Key Deliverables:

-Remember me feature
-Schedules feature
-Check empty classes feature
-Check class type
-Student interest feature
-Clubs feature

High-Level Requirements:

-

Overall Project Risk:

-System failure.
-Data incompatibility
-Increase student experience
-Promoting participation in student clips
-Resistance

PROJECT CHARTER

Project objectives	Success criteria

Scope:

enhancing existing application by adding useful features to improve user experience, including: 1-integration of' remember me 'feature to recall user password. 2-integration of schedules display feature in a user-friendly format to provide organized representation of student's classes. 3- integration of 'check empty classes 'feature that enables students to check if specific class is empty or has lecture on it by checking the schedule of the class, this feature saves time when the student wants to use a class to study or meet in. 4-integration of 'check class 'feature, this enables the student to check if the class is lab class or normal classroom by checking the class information from the department data base. 5- implementation of 'student interest 'feature, this feature enables student to add their interest and skills then suggest other student's names and id to make student connection easier. 7-implemntation of 'clubs 'feature that list all the college clubs and their information.	measure the user satisfaction through feedback and surveys aiming for minimum rating of 4 out of 5.

Time:

to deploy the enhanced application within 9 months and 15 days months of the project start date10 Mar -2024 while meeting all the project deliverables.	Complete the project with no delay more than 25 Dec -2024

Cost:

To complete the project with the preapproved budget of 100 ,000 SR with success determined by staying on or under budget while meeting all the project deliverables.	Complete the project with no more than 15% deviation budget.

Other:

summary milestones	**Due Date**
Remember me feature	22 Nov-2024
Schedules feature	18 Nov -2024
Check empty classes	27 Nov-2024
Check class type	10 Sept-2024
Student interest feature	6 Nov-2024
Clubs feature	12 Nov-2024

PROJECT CHARTER

Preapproved Financial resources:

100,000 SR, approved by the support department of Princess Nourah bint Abdulrahman University.

stakeholder(s)	**Role**
Sponsor	Agree on the budget
Project manager	Monitors project updates and arranges development team tasks
Development team	The team that works on developing and modifying problems in the program
Users	The direct users of the program modifications and their satisfaction are important.

Project exit criteria:

That all tasks specified for work and development have been completed in the required manner that satisfies the user, and that we obtain final satisfaction from the users.

Project manager authority level:

Staffing Decisions:

He employs the right people for these tasks, and also divides the tasks among the developer team appropriately as well.

Budget management and Variance:

He monitors if any discrepancy occurs in the value of the specified budget in relation to what was spent for each phase during the process of completing tasks, and if this happens, he gives news to the person above him.

PROJECT CHARTER

Technical Decisions:

Throughout the project, the project manager is usually in charge of making a variety of technical decisions. Here are a few instances of technical decisions: deciding whether to use cloud storage services like Amazon S3 or Google Cloud Storage for storing and managing user-generated material, media files, or documents in the application; choosing a frontend framework or library to construct the program's user interface. defining encryption techniques, authentication systems, and security protocols.

Conflict resolution:

As the application is being improved, disagreements about different features may occur amongst stakeholders or team members. In order to understand the underlying issues causing conflicts, the project manager can use conflict resolution strategies like active listening to the perspectives of various stakeholders. They can also collaborate and communicate openly with team members and stakeholders, which will help to facilitate discussions and find acceptable solutions. In addition, they can use SWOT analysis to evaluate the situation and determine appropriate strategies.

Sponsor authority:

The sponsor of the project typically holds some authority over it because they are responsible for making high-level decisions. A few instances of these are approving the project budget and any significant modifications or reallocations of funds; approving the allocation of resources, such as staff and equipment; approving timetable changes or significant milestones; and supporting the project.

Approvals:

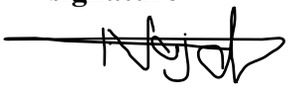
sponsor or originator signature	**Project manager signature**
	
sponsor or originator name	**Project manager name**
Najd Alharbi	**PNU management**
Date	Date
3 April 2024	**3 April 2024**

Table 1. Project charter

Project requirements:

1- Stakeholder: Sponsor

-technique: Interview

Reason: interviews help to understand requirements clearly, in the interview the sponsor can explain the project goals and the support they will provide.

2- Stakeholder: project Manager

-technique: interview

Reason: one-to-one interviews can give quick and clear understanding of requirements as they allow the interviewer to ask follow up questions.

3- Stakeholder: development team

-technique: focus group

Reason: focus group opens an opportunity for discussion, a team member can understand other members' point of view and help provide clearer explanation.

4- Stakeholder: users

-technique: questioners

Reason: questioners are an efficient way to collect requirements as they save time and effort, also it helps to understand the user's need to help outline the requirements.

Software requirements:

1.The software must include a secure authentication system that allows users to log in and stay logged in if they choose.

2.The software must provide a feature that allows students to view their class schedules.

3.The software must include an interactive campus map feature that allows users to select a floor number and view which classrooms are occupied or available.

4.The software will include a feature where students can enter a class number to obtain detailed information about the class. This information will indicate whether the class is a lecture or lab.

Hardware requirements:

1. The system requires a Central Processing Unit (CPU) with a high storage capacity. Ideally, the storage should be at least 1TB or more, to accommodate large volumes of data.

2. The system should include a large screen to support detailed visualization and multiple windows.

3. The system requires new laptops with high storage capacity, fast processors, and ample RAM to support heavy workloads.

Functional requirements:

1.The "Remember Me" feature will be fixed to ensure it works properly.

2.The system should provide registration links and information about club events and activities.

3.Students can enter a class number to obtain detailed information about the class.

4.Students can share their contact information, such as emails or names, to connect with others, share their interests, and collaborate on projects or activities.

5.The study schedules should be identical to their form in the banner system, ensuring accurate display of classes and times mentioned in official documents.

Non-functional requirements:

1.The system shall be designed to handle many simultaneous users and transactions without significant degradation in performance. It should be able to process requests, retrieve and display results at most 2 seconds.

2.The system should be highly reliable and availability that’s means the system should always be accessible to users ,24 hours a day, 7 days a week, and the system’s downtime should be limited to a maximum of one hour.

3.The application should prioritize the security of user data, including personal information, so the system shall implement secure communication protocols, encryption of sensitive data, and mechanisms to detect and prevent security threats.

4.The system should be designed with a modular and maintainable architecture.

PROJECT SCOPE STATEMENT

Project title: NouraStu+ **Date Prepared:** 17-3-2024

Project scope description:

Our project aims to develop the Noura application for students, so that the student can enjoy an easy journey in searching within the application and dealing with the processes and services provided by the program and improving the speed of access to the required services.

Project Deliverables:

1-Improving the speed of searching within the application and the speed of service delivery response. 2-Improving the application interfaces so that they are easy and clear 3-Ease of verifying the student's identity

Product acceptance criteria:

Comparing the improved version with the previous version of the application, and if all the problems are resolved and a high percentage of satisfaction is achieved among the students, then the application is successful.

Project Exclusions:

It will not include improving fixed systems within the university administration

Project constraints:

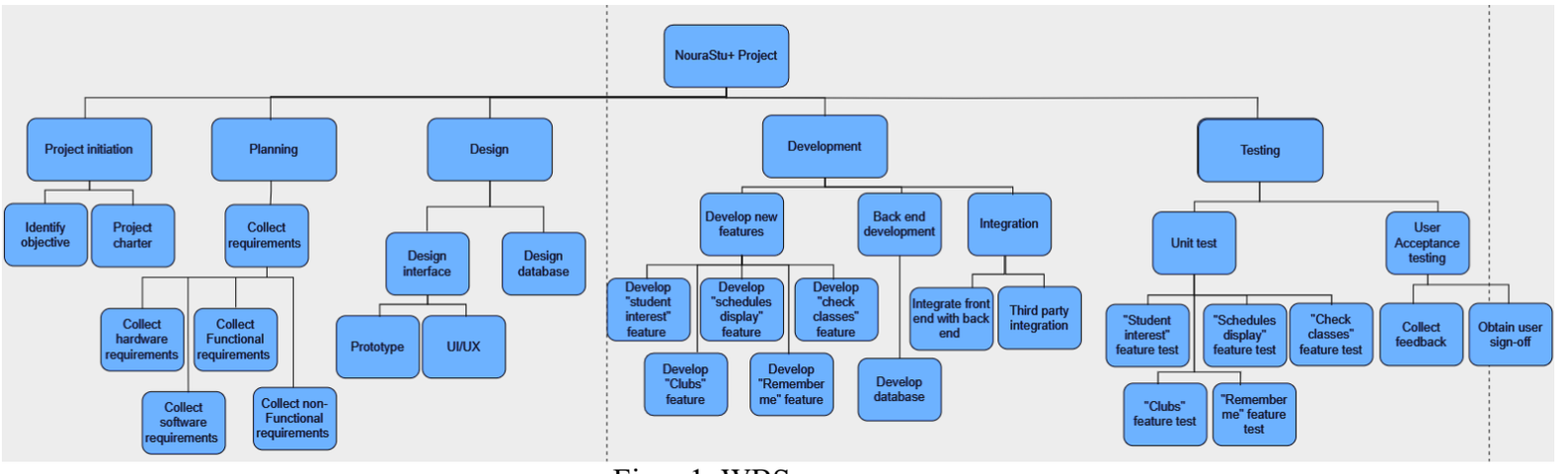
1- 100.000 SR budget only 2- 9 months and 15 days to complete the project 3- It will not include improving fixed systems within the university administration

Project assumptions:

Users will interact with the new system and give me good feedback on it

Table 2. Project scope statement

WBS: [3]



Figer 1. WBS

1 NouraStu+ project

1.1 Project initiation

1.1.1 Identify objectives

1.1.2 Project charter

1.2 Planning

1.2.1 collect requirements

1.2.1.1 Collect hardware requirements

1.2.1.2 Collect software requirements

1.2.1.3 Collect functional requirements

1.2.1.4 Collect non-functional requirements

1.3 Design

1.3.1 Design interface

1.3.1.1 Prototype

1.3.1.2 UI/UX

1.3.2 Design database

1.4 Development

1.4.1 Develop new features

1.4.1.1 Develop “Student interest” feature

1.4.1.2 Develop “Schedules display” feature

1.4.1.3 Develop “Check classes” feature

1.4.1.4 Develop “Clubs” feature

1.4.1.5 Develop “Remember me “ feature

1.4.2 Back-end development

1.4.2.1 Database development

1.4.3 Integration

1.4.3.1 Integrate front-end and back-end

1.4.3.2 Third party integration

1.5 Testing

1.5.1 Unit test

1.5.1.1 “Student interest” feature test

1.5.1.2 “Check classes” feature test

1.5.1.3 “Schedules display” feature test

1.5.1.4 “Clubs” feature test

1.5.1.5 “Remember me” feature test

1.5.2 User acceptance testing

1.5.2.1 Collect feedback

1.5.2.2 Obtain user sign-off

WBS dictionary:

WBS item#	WBS item name	Work description
1.1.1	Identify objective	Determining and clearly defining the specific goals and aims of the project. This step involves articulating what the project is intended to achieve and setting measurable targets.
1.1.2	Project charter	This step will involve making the Project charter and signing it off.
1.2.1.1	Collect hardware requirements	The specific hardware needs are identified, documented, and validated. This step is crucial for ensuring that the project's technical infrastructure can support the planned software and operations.
1.2.1.2	Collect software requirements	Gathering and documenting all requirements related to the software aspects of the project. This includes defining what the software must do, the constraints it must operate within, and the expected outcomes.
1.2.1.3	Collect functional requirements	Gathering and documenting the specific functions and features that the software or system must perform to meet project objectives. These requirements define what the system should do, focusing on the user's needs and how they interact with the application.
1.2.1.4	Collect non-functional requirements	Gathering and documenting the specifications that describe how a system should operate, focusing

		on attributes that are not related to specific functionalities but are crucial for overall system performance, quality, and user satisfaction.
1.3.1.1	Design prototype	Creating preliminary model or sample of the system to test and refine design concepts before full-scale production or implementation.
1.3.1.2	UI/UX	creating the user interface (UI) and user experience (UX) for the system, It encompasses the design of visual elements, navigation structures, interactive components, and the overall user journey.
1.3.2	Design database	In this step the design of the database will be determined upon what the system will need after the changes and the features that were added.
1.4.1.1	Develop “Student interest” feature	Creating a feature within an application that allows students to input, manage, and share their interests. The feature can be used to enhance social connections, recommend relevant activities, or personalize the user experience, it helps students to get to meet each other for projects.
1.4.1.2	Develop “Schedules display” feature	Creating a component within our system that allows users to view their schedules. It helps students to be organized.
1.4.1.3	Develop “Check classes” feature	creating a functionality within an application or system that allows users to check the type or availability related to classes.

1.4.1.4	Develop “Clubs” feature	Creating a functionality within the system that allows users to interact with information about clubs, student organizations, or extracurricular activities.
1.4.1.5	Develop “remember me” feature	Creating a functionality within the system allows users to stay logged in or retain their authentication state across sessions.
1.4.2.1	Database development	The process of building and implementing a database for the system.
1.4.3.1	Integrate front-end and back-end	refers to the process of connecting the user-facing parts of a software application (front-end) with the server-side components (back-end). This integration is crucial for creating seamless and functional web applications, ensuring that the front-end and back-end work together to deliver a cohesive user experience.
1.4.3.2	Third party integration	the process of incorporating external services (like GPS for “check classes” feature) components into the system.
1.5.1.1	“Student interest” feature test	Testing Student interest feature to make sure that it meets user needs and operates as expected.
1.5.1.2	“Check classes” feature test	Testing Check classes feature to make sure that it meets user needs and operates as expected.
1.5.1.3	“Schedules display” feature test	Testing Schedules display feature to make sure that it meets user needs and operates as expected.
1.5.1.4	“Clubs” feature test	Testing clubs feature to make sure that it meets

		user needs and operates as expected.
1.5.1.5	“Remember me” feature test	Testing remember me feature to make sure that it meets user needs and operates as expected.
1.5.2.1	Collect feedback	Gathering information, opinions, and insights from stakeholders, users, or team members. The objective is to understand their perspectives, identify issues, and gain suggestions for improvement.
1.5.2.2	Obtain user sign-off	Getting formal approval or consent from stakeholders indicating that they accept the final project.

Table 3. WBS dictionary

RACI:

task	project manager	project sponsor	customer	programmer	tester	analysist
identify objectives	R	C	C	I		C
project charter	R	C				I
collect requirments	A	C	C	I		R
design interface	C,I			R		C,A
design Data Base	C,I			R		C
develop new features	A,I		I	R		I
back end deveolpment	A,I			R		C
integration	C,I			R		A
unit test	I			I	R	
user acceptance testing	I	I	I	I	R	I

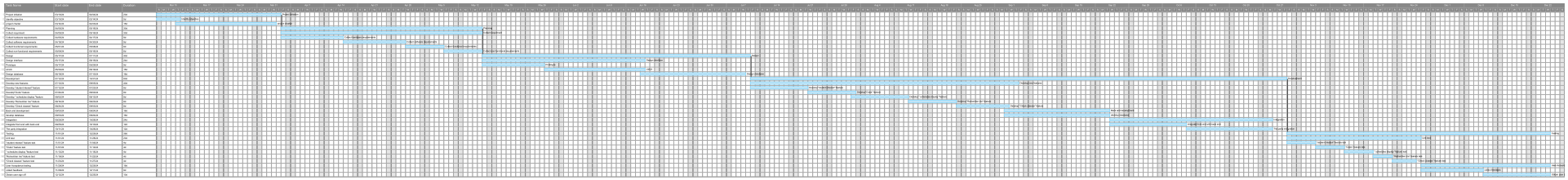
Risk register: [5]

No.	Rank	Risk	Description	Category	Root cause	Trigger	Potential responses	Risk owner	Prob	Impact	Status
R1	1	System failure(negative)	Due the pressure because of huge users the system won't be available most of time.	Technical risk	There are not enough servers.	The exponential growth in the number of users creates immense pressure on the system, resulting in limited availability and frequent downtime.	Risk transference: Shifting the consequence of a risk and responsibility to third party with a contract that they give us a servers.	Third party	High	High	Open
R2	2	Data incompatibility(negative)	A mismatch or discrepancy may occur between the data displayed in NouraStu+ and official data from other sources, which may lead to an imbalance in the organization and management of study schedules and cause scheduling conflicts.	Technical risk	Integration failure: Different systems may be unable to interact and communicate smoothly due to incompatible data structures.	incompatible data structures.	Risk mitigation: Establish a central management system: It may be useful to create a central management system that collects data from different sources and provides a unified interface to display the data in a compatible and unified manner.	Project manager	High	High	Open
R3	3	Increase student experience (positive)	The application can improve the student experience by providing a convenient and easy-to-use interface for accessing academic information, class schedules, and participating in university activities.	Human risk	Having everything a student needs in an easy-to-use application.	Ease of interfaces.	Risk acceptance: does not take any actions toward a risk just accepting it.	Development tea	High	High	Open
R4	4	Promoting participation in student clubs (positive)	By providing a list of available clubs and their details, the application can encourage students to participate in university clubs and activities and thus improve their university experience and develop their personal skills.	Human risk	Having everything a student needs in details.	Ease of interfaces.	Risk acceptance: does not take any actions toward a risk just accepting it.	Development tea	High	High	Open
R5	5	Resistance (negative	Users may not fully adopt to new changes.	Human risk	They are not accustomed to using the site after the update.	New environment	Risk mitigation: Providing technical support includes users who faces difficulties after the updates.	Development tea	Low	Medium	Open

Figer 4. Risk register.

Gantt chart

smartsheet



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[2]"Deliver better software faster,"Plutora, https://www.plutora.com/blog/incremental-model-what-and-how-to=implement-(accessed Mar.10,2024).
[3]"Project Scope Management," IS350 Course Slides, Department of Information Systems, University PNU.
[4] "Project Time Management," IS350 Course Slides, Department of Information Systems, University PNU.
[5]"Project Risk Management," IS350 Course Slides, Department of Information Systems, University PNU.