

**CS 411 – Software Engineering
Term 1 – 2022/2023**

For

CSHJ

Version 1.0



CIS Year 4, G5

Dr. Norah Alnaim

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This Software Project Management Plans (SPMP) was prepared and provided as a deliverable for Software Engineering, CS411, Term 1, and it will be used by Administration, Faculty Member, Student, Security Member. This document is based in part on the IEEE Recommended Practice for SPMP Descriptions.

Team Members:

#	Student Name	ID
1	May Mohammed AlOtaibi	2200004606
2	Reem Shaker Almuallem	2190000429
3	Fida Mohammed Alelou	2200003041
4	Ghala Mohammed Alkhaldi	2200003157
5	Warood Khalid Alzayer	2190004986

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Revision History

Name	Date	Reason For Changes	Version
All members	Sep 11, 2022	Prepared initial version	0.1
All members	Sep 13, 2022	Updated section 1,2	0.2
All members	Sep 15, 2022	Updated section 3	0.3
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All members	Sep 19, 2022	Complete review - Final version	1.0

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1. Project Overview

In this section we will provide an overview of the project purpose, scope and objectives for which the Plan has been written, the project assumptions and constraints, a list of project deliverables, a summary of the project schedule and budget.

1.1 Purpose, Scope, and Objectives

The purpose of **CSHJ** is to gather all faculty members' and students of the College of Science and Humanities in Jubail in one interactive place. It solves many problems that faculty members and students face on a daily basis like: student attendance in classes, student ID verification at the college entrance, student violation process is complicated and finally lack of one single place that gathers all college notifications such as most recent events, workshops, dress code, and other activities that both administration and faculty members would like to add. We decided to create an application that adopts an interactive environment that will enable all college members to benefit from it. This project takes some features from both blackboard, people soft and my IAU application with more improved features and technologies that keep up with the rapid changes nowadays.

The application contains:

- Streaming area that contains the most recent events, workshops, activities, and any important notifications that only authorized faculty administration and members want to post.
- Students will be able to view all the activities and descriptions that student clubs provide, and then register in the desired club.
- College regulations and rules will be posted and updated regularly, in addition, when a student violates the rules, security members can then issue a warning to the student by using the app, and the student then can view and track their own violations.
- Instead of using the classic tangible way of student ID verification and attendance, new technology will be used based on tracking the location of students, the students will be verified to attend the college and take attendance in classes only by using this technology.

How it works:

- First, the program will ask if the user is an administration member, faculty member, student or security member and will redirect the user to the appropriate interface.
- All end users will be asked to enter the system by entering their academic email and password.
- The application overall interface will be the same for them all but with different authorization specifications and slight changes depending on the role of the end user.

End user:

Administration functionalities:

- The ability to add and delete student regulations and rules.

- Share notifications in the streaming area.
- Edit, delete, pin all notifications.
- Add student clubs and their details.
- Controlling the number of students allowed in each club.
- Accept or deny students for the clubs.
- Controlling the number of students allowed in each class.

End user:

Faculty member functionalities:

- Share notifications in the streaming area.
- Edit, delete, pin their own notifications.
- Add their classes schedule and time.

End user:

Security member functionalities:

- The ability to free a violation for a student.

End user:

Student functionalities:

- Register in the desired student club.
- Share a notification.

The main objectives are:

- Facilitate tasks for both faculty and security members.
- Build an interactive community in the college.
- Facilitate the communication between students and faculty members.
- Provide a stand-alone application for CSHJ.
- Reduce crowding in the morning for ID verification.
- Reduce wasting class time to take student attendance.
- Maintain lecture time with automatic attendance.
- Clarity of rules and regulations for all students.
- Student awareness of all activities, workshops in the college.
- Student clubs are clear and gathered in one place.
- Facilitate the process of signing in to a student club.
- Freeing a violation for a student is much easier.
- students can track their violation easily.

1.2 Assumptions, Constraints and Risks

Type	Description
Assumptions	<ul style="list-style-type: none"> ● Deliver the project on time. ● Follow the schedule. ● Resources are available. ● The application will run without any error. ● The amount of work is distributed equally among team members. ● The budget aligns with project requirements. ● The goal of the project meets customer needs. ● May require existing software to be adopted.
Constraints	<ul style="list-style-type: none"> ● Lack of experience in some tools. ● Follow the time schedule. ● Lack of training. ● Have to meet the budget exactly. ● Customer requirements. ● Interference in team members' schedule. ● Team members get sick.
Risks	<ul style="list-style-type: none"> ● Requirements change. ● Copyright issues. ● A lot of goals are not met. ● Some tasks take a long time. ● Members are not experienced enough. ● Competition with other companies. ● Low quality. ● Intense environment between team members. ● Budget estimation is wrong.

Table 1 Assumptions, Constraints and Risks

1.3 Project Deliverables

Project deliverables	Date	Location	Media
Defining project	8 September, 2022	Blackboard	Softcopy
Project proposal	12 September, 2022	Blackboard	Softcopy
Project management plan (SPMP)	20 September, 2022	Blackboard	Softcopy
Project requirements (SRS)	25 September, 2022	Blackboard	Softcopy
Project design (SDS)	23 October, 2022	Blackboard	Softcopy
Project test plan (STP)	30 October, 2022	Blackboard	Softcopy

Table 2 Project Deliverables

1.4 Schedule and Budget Summary

The budget of our project to develop and design depending on the software, application and the technology tools needed and algorithm is 68,000 SAR.

The table below shows the schedule table of our project with total weeks of 17 to be completed.

Major activity	Duration	Budget
Analysis and Requirements	3 weeks	10,000 SAR
Design (Interface and Database)	4 weeks	13,000 SAR
Implementation	6 weeks	30,000 SAR
Testing	3 weeks	15,000 SAR
Deployment and Submission	1 week	-

Table 3 Schedule and Budget Summary

1.5 Evolution of the Plan

The Software Project Management Plan (SPMP) describes the planning of the project in detail. It is updated in each step/plan so it has many versions. The last version will be documented and archived in order to not lose the changes and progress. This enables us to go back to the older versions and see the changes. The deliverable will follow IEEE std 1058-1998 Standard.

Finally, the changes have to be mandated and approved by the project team leader then the team members will discuss with each other the goal of success.

1.6 References

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1.7 Definitions and Acronyms

All acronyms used in this report are listed in the below table.

<i>Acronyms</i>	<i>Definitions</i>
<i>CSHJ</i>	College of Science and Humanities in Jubail
<i>ID</i>	Identification
<i>SPMP</i>	Software Engineering Project Management Plan
<i>SRS</i>	Software Requirements Specification
<i>SDS</i>	Software Design Specification
<i>STP</i>	Software Test Plan
<i>IEEE</i>	The Institute of Electrical and Electronic Engineering.
<i>Std</i>	Standard
<i>SR</i>	Saudi Riyal
<i>IAU</i>	Imam Abdulrahman Bin Faisal University

Table 4 Acronyms and its definition

1.8 Document Structure

1) Project Overview

This section provides an overview of the purpose, scope, objectives, assumptions and constraints, a list of project deliverables, a summary of the project schedule and budget, and the evolution plan.

2) Project Organization

This section will identify interfaces to organizational entities for both external and internal structure to the project and define roles and responsibilities for each member and leader for the project.

3) Managerial Process Plan

This section will specify the project management processes for the project. It will contain a statement of the project scope, risk management plan, including the project start-up plan, project control plan, project work plan, and finally project closeout plan.

4) Technical Process Plan

This section will specify the development process model, the tools, technical methods, and techniques to be used to develop the work products for example: the product acceptance plan and plans for establishing and maintaining the project infrastructure.

5) Supporting Process Plan

This section contains plans for the supporting processes, for example: configuration management, verification and validation, software documentation, quality assurance, reviews and audits, problem resolution, and subcontractor management.

6) Additional Plans

This section contains additional plans required to satisfy product requirements. In some projects it may include plans for assuring that safety, privacy, and security requirements for the product are met, user training plans, data conversion plans, integration plans and so on.

2. Project Organization

2.1 External Interfaces

CSHJ system mainly serves the students in the College of Science and Humanities for now, and all university students around the world in the future. As well as people who work in the college. Also, this project has a manager who is an intermediary between the supervisor and the group members and also is responsible for organizing and managing the work between the members of the group. The project parent organization is the College of Science and Humanities which will be the customer at the beginning who is responsible for buying the system and then when the college owns the system, the administrators will be able to use the services and the features of the system.

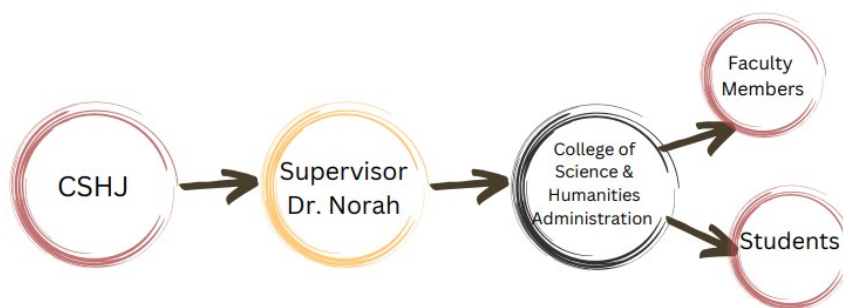


Figure 1 External interfaces

2.2 Internal Structure

The system was planned and proposed by all members of the team, and it will be developed and maintained by all of them as well, however every member has different responsibility that will be discussed later but all the members have important technical skills. Every part will be checked and evaluated by the supervisor Dr. Norah Alnaim to ensure that the system is developed correctly after being reviewed by the manager May AlOtaibi. All the extra plans, ideas, and sudden and emergency changes will be considered in the online and in-person meetings that are going to be scheduled. The structure of the team is a hierarchical structure, it contains the supervisor **Dr. Norah Alnaim**, the manager **May AlOtaibi**, and the members: **Reem Almuallem, Warood Alzayer, Fida Alelou, and Ghala Alkhaldi.**

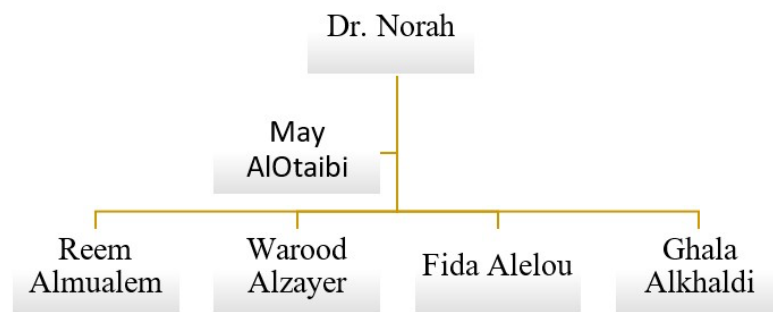
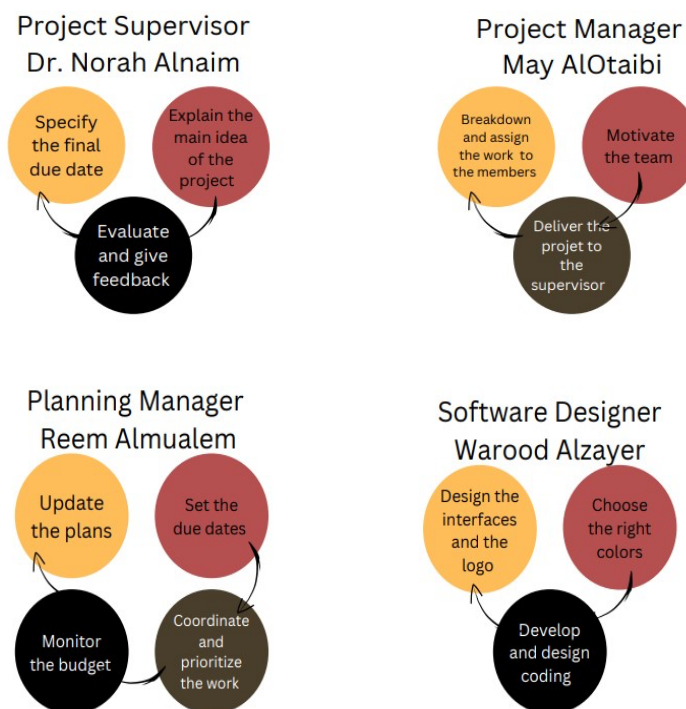


Figure 2 Internal structure

2.3 Roles and Responsibilities

Each member of the team has different responsibilities and roles that suit their skills however every member could have more than one role. The title of each member determines their role if needed. As shown in the figure below:



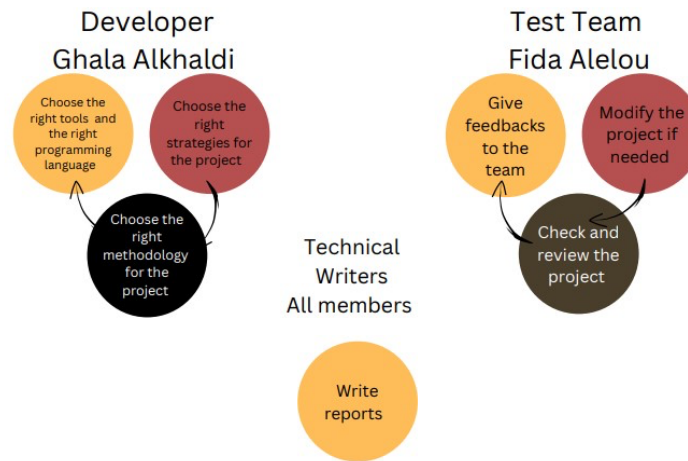


Figure 3 Roles and responsibilities

3. Managerial Process Plans

3.1 Start-up Plan

3.1.1 Estimates

To properly manage the project, we must examine estimates that are regularly revised as the project progresses. First, while assessing the project's cost (which includes hardware, software, and resource) That will be used. In addition, project participants will get training. Then, define a schedule of meetings with team members and customers to explain what has happened, what has been completed, and what remains.

Second, the project is a clever interactive application, and the tools to be utilized are Adobe xd, NetBeans, HTML, CSS and Notepad+ for designing interfaces and MySQL for data collection. The project's completion date is set for 4 months. divided into subtasks we also considered the possibility of any difficulties that may arise prior to delivery and decided to ensure that the job is fully operational before the deadline.

3.1.2 Staffing

The project team consists of 5 students from Imam Abdulrahman bin Faisal University. All of them have previous experience in interface design, database design, communication skills, and problem-solving. every employee must be able to do specific activities:

Warood Khalid Alzayer (Developer):

- Problem Solving
- Decision making

Reem Shaker Almuallem (Developer):

- Designing skills.
- Accuracy and attention to detail.

Fida Mohammed Alelou (Developer):

- Teamwork skills.
- Excellent organizational and time management skills.

Ghala Mohammed Alkhaldi (Developer):

- Creativity skills.
- Software Testing.

May Mohammed AlOtaibi (Developer):

- Managing skills.
- Source control.

- Summarizes the project's phases and required duration:

Project phase	Prepare Documents	Duration
Defining Project	All member of the team	One week
Project Proposal		
Project Management Plan (SPMP)		Two weeks
Project Requirements (SRS)		Two weeks
Project Design (SDS)		Two weeks
Project Test Plan (STP)		One week
Final project		

Table 5 Project's phases

3.1.3 Project Staff Training

Employees must have the requisite technical skills to accomplish their jobs due to the complexity of the work environment. including managers for the planning process, development, software design, and testing. As a result, training plans should contain a variety of courses that will assist them in expanding their knowledge and abilities.

Skill type	Skills needed	Training method
Design	<ul style="list-style-type: none"> - Design tools - Design Principles - Creativity 	<ul style="list-style-type: none"> - Courses - Guidance
Programming	<ul style="list-style-type: none"> - Solve problems - Different programming languages 	<ul style="list-style-type: none"> - Courses - Guidance - E-learning
Technical Writing	<ul style="list-style-type: none"> - Writing skills - Knowledge of technical writing software tools. 	<ul style="list-style-type: none"> - Courses - Guidance
Managerial	<ul style="list-style-type: none"> - Manage the team and time - Decision making 	<ul style="list-style-type: none"> - Courses - Guidance

Table 6 Training Skills

3.2 Work Plan

3.2.1 Work Breakdown Structure

As shown in **Table 7**, the Work Breakdown Structure (WBS) breaks down the different activities based on criteria such as determining the status of the task (completed, in progress, incomplete) and the estimated duration and method of delivery of each task.

No.	Work Activities	Estimated Duration	Status	Delivery Method
1	Project Definition	5 days	Completed	Softcopy
1.1	Brainstorming	3 days	Completed	-
1.2	Deep Search	1 day	Completed	-
2	Project Proposal	1 week	Completed	Softcopy
2.1	Division of Labor	1 day	Completed	-
2.2	Start Preparing Project Proposal	4 days	Completed	-
2.3	Project Logo	1 day	Completed	-

2.4	Submitting Project Proposal	1 day	Completed	Softcopy
3	Project Management plan (SPMP)	8 days	In progress	Softcopy
3.1	Reading the IEEE Standard for SPMP	1 day	Completed	-
3.2	Division of Labor	1 day	Completed	-
3.3	Start Preparing the Project Management plan	5 days	In progress	-
3.4	Submitting the Project Management plan	1 day	In progress	Softcopy
4	Project Requirements (SRS)	5 days	Incomplete	Softcopy
4.1	Collect Requirements	1 day	Incomplete	-
4.2	Analyzing the Requirements	1 day	Incomplete	-
4.3	Start Preparing Project Requirements (SRS)	2 days	Incomplete	-

4.4	Submitting Project Requirements (SRS)	1 day	Incomplete	Softcopy
5	Project Design (SDS)	29 days	Incomplete	Softcopy
5.1	Building the System (knowing how the system will work)	10 days	Incomplete	-
5.2	Building Database	10 days	Incomplete	-
5.3	Start Preparing Project Design (SDS)	8 days	Incomplete	-
5.4	Submitting Project Design (SDS)	1 day	Incomplete	Softcopy
6	Project Test Plan (STP)	1 week	Incomplete	Softcopy
6.1	Start Preparing Project Test Plan (STP)	6 days	Incomplete	-
6.2	Submitting Project Test Plan (STP)	1 day	Incomplete	Softcopy

Table 7 Work Breakdown Structure

3.2.2 Schedule Allocation

This **Gantt chart** shows the plan and time taken for each milestone of the whole project from the first week until the week 15, as specified in **Table 7**

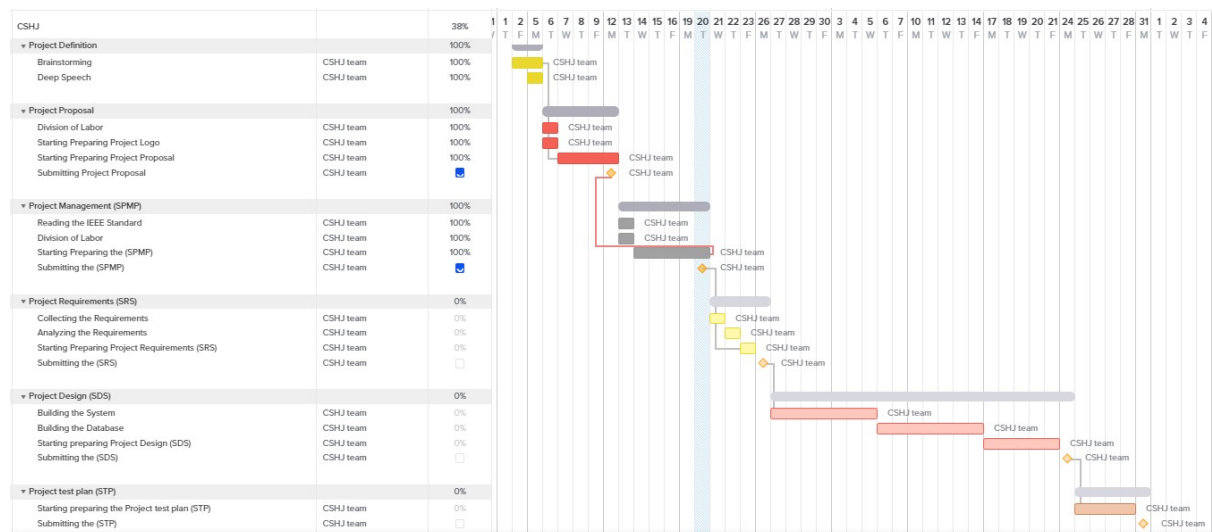


Figure 4 Schedule Allocation

3.2.3 Resource Allocation

Table 8 shows the resources needed for each task that was previously identified in the WBS section:

No.	Work Activities	Resource Allocation
1	Project Definition	<ul style="list-style-type: none"> ◆ Personal <ul style="list-style-type: none"> - All team members ◆ Administrative Support <ul style="list-style-type: none"> - Dr. Norah M. Al-naim ◆ Computer resources <ul style="list-style-type: none"> - Laptop ◆ Software Tools <ul style="list-style-type: none"> - Google scholar - Zoom

2	Project Proposal	<ul style="list-style-type: none"> ◆ Personal <ul style="list-style-type: none"> - All team members ◆ Administrative Support <ul style="list-style-type: none"> - Dr. Norah M. Al-naim ◆ Computer resources <ul style="list-style-type: none"> - Laptop ◆ Software Tools <ul style="list-style-type: none"> - Zoom - Adobe illustrator - Google Docs - Microsoft Office (Word)
3	Project Management Plan (SPMP)	<ul style="list-style-type: none"> ◆ Personal <ul style="list-style-type: none"> - All team members ◆ Administrative Support <ul style="list-style-type: none"> - Dr. Norah M. Al-naim ◆ Computer resources <ul style="list-style-type: none"> - Laptop ◆ Software Tools <ul style="list-style-type: none"> - Microsoft Office (Excel) - Canva - Google Docs - Procreate
4	Project Requirement (SRS)	<ul style="list-style-type: none"> ◆ Personal <ul style="list-style-type: none"> - All team members ◆ Administrative Support <ul style="list-style-type: none"> - Dr. Norah M. Al-naim ◆ Computer resources <ul style="list-style-type: none"> - Laptop ◆ Software Tools <ul style="list-style-type: none"> - Google Docs - Microsoft Office (Word)

5	Project Interface Design (SDS)	<ul style="list-style-type: none"> ◆ Personal <ul style="list-style-type: none"> - All team members ◆ Administrative Support <ul style="list-style-type: none"> - Dr. Norah M. Al-naim ◆ Computer resources <ul style="list-style-type: none"> - Laptop ◆ Software Tools <ul style="list-style-type: none"> - NetBeans - HTML - CSS - Notepad++ - Adobe Xd
6	Project Test Plan (STP)	<ul style="list-style-type: none"> ◆ Personal <ul style="list-style-type: none"> - All team members ◆ Administrative Support <ul style="list-style-type: none"> - Dr. Norah M. Al-naim ◆ Computer resources <ul style="list-style-type: none"> - Laptop ◆ Software Tools <ul style="list-style-type: none"> - Google Docs - XAMPP - NetBeans - MySQL - Github
7	Final project	<ul style="list-style-type: none"> ◆ Personal <ul style="list-style-type: none"> - All team members ◆ Administrative Support <ul style="list-style-type: none"> - Dr. Norah M. Al-naim ◆ Computer resources <ul style="list-style-type: none"> - Laptop ◆ Software Tools <ul style="list-style-type: none"> - Microsoft Office (Word and PowerPoint) - NetBeans

Table 8 Resource Allocation

3.2.4 Budget Allocation

The project will be certified in coding for software development. It will take a lot of time and effort but it will be developed based on the basic requirements, which increases the efficiency of the system and reduces the level of risk in modifying a previous system that may carry a lot of errors and modifications that are not commensurate with the requirements of the project.

All meetings include the manager, team members, and clients. Where the cost of traveling to the meeting place is estimated from 1000 SAR to 6000 SAR depending on the appropriate airline. We will also need six laptops for computing resources, which will cost approximately 38,000 SAR. Furthermore, the project will entail the use of software tools and cloud storage, which will cost 9,000 SAR, bringing our total budget to 220,000 SAR.

3.3 Project Tracking Plan

3.3.1 Requirements Management

The team working on this project will consider each requirement and monitor its progress. The need will be suggested at the initial step. The requirement will be rejected in the second phase if it is not approved. However, if the proposal is accepted, it will move on to the next step, where the need (requirements) will either be implemented or not. If it is, the team will begin planning, designing, and testing. The team must consider how this need will affect the project's schedule, resources, cost, and risk factors.

3.3.2 Schedule Control

This process is considered one of the most important processes during the implementation phase of the project, which is one of the monitoring and control processes of the project that every manager cares about. Project managers can use a range of tools and techniques to develop, monitor, and control project schedules. Increasingly, many of them can be implemented digitally (using programs such as Excel, Microsoft Project, etc.). Also, some interactive methods are applied with the work team to ensure the progress of the project as planned, such as weekly meetings to track the progress and progress of the project and also identify the completed and uncompleted activities. In the event that the planned progress does not match the actual progress, members will be seriously discussed as to why the planned progress is not progressing as planned. If there is a compelling reason for not applying, they will be provided with the resources required to solve this problem, and if there is no clear reason, the responsibilities will be rearranged so as not to repeat the situation.

3.3.4 Quality Control

Quality control refers to the procedure used by an organization to attempt to keep or enhance product quality. To maintain quality. So, quality control is important and will be applied to all project deliverables. Therefore, having skilled team members is the greatest strategy to have the best quality control. Depending on their skills and knowledge, each team member will be responsible for a specific task to maintain the highest standards and quality. Our team must also ensure that the project follows our quality goals, which are:

- The user interface is understandable, and simple to use.
- The application's users can provide comments in an area designated for that purpose.

Also, some approaches will be used in this project to increase quality control, which are:

- prototype: to provide a proof of concept that demonstrates functionality to be vetted out by customers.
- plane B: to quickly deal with errors and risks

3.3.5 Reporting

Reports will be prepared in two tracks, internal reports with team members to track project progress, note taking, find out responsibilities and many other matters of interest to the team, and are usually informal and use social media such as Whatsapp as a means of communication. The development of activities is discussed via the interactive Zoom platform. . The files are shared and edited continuously by all team members via the Google Docs platform.

As for external reports, they are the reports that are delivered periodically such as Project Proposal, SPMP, SRS, SDS, and STP. Which is delivered in a formal manner through the Blackboard platform where the work is evaluated, graded and given feedback by the project supervisor.

3.3.6 Project Metrics

Project metrics are the most effective tool for monitoring data and are more comprehensive in tracking productivity metrics such as utilization, scheduling, and perception to get a broader idea of what is actually being done. As shown in **Table 9**, the matrices used in the project.

No.	Matrices	Comment
1	Scheduling due dates and changes	<p>This metric gives us insight into:</p> <ul style="list-style-type: none"> • Completed tasks on time. • Extent of project delivery with estimated date. • How efficient team members are in completing the tasks assigned to them.
2	Team productivity	<p>Several things are specified in this metric:</p> <ul style="list-style-type: none"> • Time of delivery of each task by team members. • The number of implementation times and delivery by deadlines in the time required to measure meeting client expectations. • The number of deadlines that team members failed to deliver and their impact on the overall project delivery.
3	Team productivity	<p>Is determined:</p> <ul style="list-style-type: none"> • The number of tasks for each member and the measurement of the period of work (full job, part job). • Measure the output of each member based on the amount of time given. • The impact of team members' efficiency and commitment to their work on the overall project completion.

4	Budget estimates and progress	It uses tools to track spending and reduce overspending. The budget is set at the beginning of the project, but exceeding the budget during the work is one of the worst events facing the project. Changes and developments may occur in the project that leads to an increase in the funding, depending on the model used, as it counts as feedback.
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Table 9 Project Metrics

3.4 Risk Management Plan

Project risk management identifies, analyzes, and responds to all risks throughout the project lifecycle to keep the project on target. Knowing what risks a project can pose and how to control them should be part of the process.

Risk Management Process

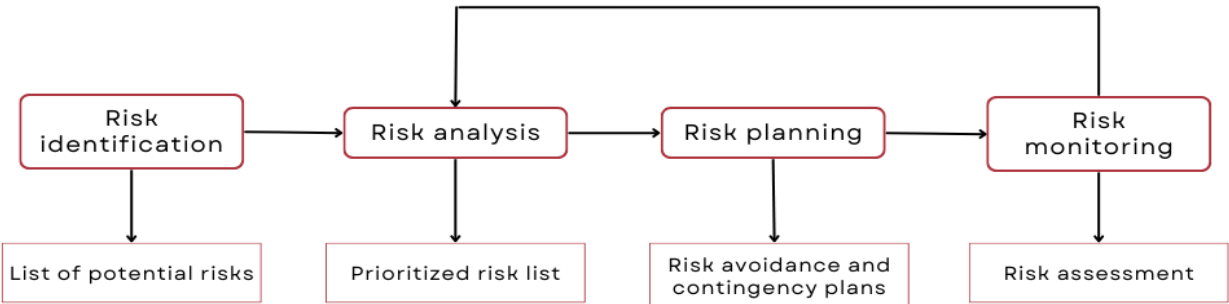


Figure 5 Risk Management Plan

No	Potential Risk	Risk type	Probability	Effects	Action	Prevention
1	Requirement change	Requirements	High	Serious	Flexible implementation of changes.	Alert the customer to potential difficulties and the possibility of delay, so he must explain the requirements accurately.
2	Hardware unavailability	Technology	Moderate	Tolerable	Use of employee's personal devices as an alternative.	Determine the appropriate budget for hardware.
3	Staff turnover	People	Moderate	Catastrophic	Assign tasks to other members.	Employees know each other's work so that they can work efficiently.
4	Financial issues	Organizational	Low	Catastrophic	Reschedule the budget and prioritize.	The organization sets the budget accurately from the initial stages.
5	Required training for	People	Moderate	Tolerable	Asking for help from experts in the field of	Giving importance to training for staff from the

	staff is not available				training and development.	initial stages to avoid facing this problem.
6	Low database performance	Technology	Moderate	Serious	Attempt to improve queries and redesign the database.	Consider the possibility of purchasing a high-performance database in the initial stages.

Table 10 Risk Management Plan

The risk management process is divided into four stages, as shown in Figure 5: risk identification, risk analysis, risk planning, and risk monitoring. Table 10 shows the potential risks encountered in the project and categorizes the probability of their impact as low, medium, or high. The risks classified as acceptable, serious, insignificant, or catastrophic were also analyzed. After that, a plan will be developed to deal with and prevent these risks, whether they occur or not. Finally, the identified risks will be monitored regularly to ascertain whether the effects of the threats have changed or not.

3.5 Project Closeout Plan

This stage will update the status of the project and the method of completion after its delivery. The purpose of this section is to document lessons learned throughout the project. In addition, getting logged out is essential for all parties to the project, whether the client or the project manager, because they are likely to start another project, so it is necessary to ensure that everyone involved has a good transition opportunity. All team members managed their time to avoid affecting the final project delivery. There are also many skills acquired by team members, such as teamwork, time management, design thinking, management, programming, and other skills that add a lot of experience to the member.

PROJECT CLOSEOUT PLAN



Figure 6 Project Closeout Plan

4. Technical Process Plans

4.1 Process Model

The software process model, methods, tools, techniques, and infrastructure design are all detailed in this section of the project management plan.

CSHJ software will use the agile model. Agile software engineering is a way to continually improve the development process. We have initial goals, but when the software is released, user feedback will be considered and used to improve the software according to their suggestions. If necessary, the use of the interface will also be facilitated. This model will be used because compared to the aircraft-driven model, there will be flexibility in the software development process.



Figure 7 Agile model (life cycle)

Phase	Description
Requirements Gathering	<ul style="list-style-type: none">- The initial problems that can be solved are prioritized.
Design	<ul style="list-style-type: none">- The agile team works collaboratively to develop the software architecture and corresponding UI and UX for the product.
Develop	<ul style="list-style-type: none">- The engineering teams work in accordance with the designed software architecture.
Testing	<ul style="list-style-type: none">- The Agile testing team members jump in at the end of every sprint cycle to identify the bugs and inconsistencies
Deployment	<ul style="list-style-type: none">- The completed user software is launched in the market.
Maintenance	<ul style="list-style-type: none">- Newer changes and features are integrated, bugs and inconsistencies are fixed throughout the product's lifetime.

Table 11 Description of Agile Model Process Phases

4.2 Methods, Tools, and Techniques

Phase	Tools / Techniques	Methods	Technical standards
Requirements Gathering	- Zoom Meetings -Microsoft word. -Physical Meetings. -OneDrive.	-Tables Diagrams.	IEEE Standards 1058 - 1998
Design	-MySQL -Adobe XD	-UML -ER Diagram -GUI Design	IEEE Standards 1058 - 1998
Develop	- Zoom Meetings -Physical Meetings. -Adobe XD -MySQL	-Tables Diagrams. -GUI Design.	IEEE Standards 1058 - 1998
Testing	-Zoom Meetings -Physical Meetings.	-Beta test	IEEE Standards 1058 - 1998
Deployment	-DeployBot	-Beta test	IEEE Standards 1058 - 1998
Maintenance	-Dubbeger -Cross-reference generator	-	IEEE Standards 1058 - 1998

Table 12 Method, tools, and techniques standards

4.3 Infrastructure

Software development requires a variety of hardware, operating systems, networks, and software. **CSHJ** software will be developed using Java programming languages , Adobe xd and MySQL.

Software Development Infrastructure	
Hardware	Each team member must have a personal computer or laptop
Software	Each team member has Microsoft Windows 10 or Mac operating systems.
Network	The college local area network or a secure local area network is required for each team member.
Policies	The team meetings must be attended by all members. Each member is required to complete their own work by the deadlines

Table 13 Infrastructure Plan

4.4 Product Acceptance

The main objective of the CSHJ team is to satisfy the client's needs and get their satisfaction. We used the agile model to take feedback before starting any stage so we could implement the client's needs with high quality. The project supervisor, Dr. Norah Al-naim, will review and evaluate all results.

A meeting was held via the Zoom platform with the college administration, and an agreement was established with supervisor to provide some of the features in the system that students need in the college

May M. AlOtaibi: 

Ghala M. Alkhalidi: 

Fida M. Alelou: 

Reem Almuallem: 

Warood Alzyer: 

5. Supporting Process Plans

5.1 Documentation

This project contains multiple milestones as shown in the **Table 14** below:

Deliverable	Deadlines	Format Standard	Prepared by	Review Documents
Defining the Project of the Course	September 5, 2022	Provided by the supervisor	All team members	Firstly by the project test team and then by the project supervisor Dr. Norah Alnaim
Project Proposal	September 12, 2022			
Project Management (SPMP)	September 20, 2022	IEEE Std 1058-1998		
Project Requirements (SRS)	September 25, 2022	IEEE Std 830-1998		
Project Design (SDS)	October 23, 2022	IEEE Std 1016-1998		
Project Test Plan (STP)	October 30, 2022	IEEE Std 829-1998		

Table 14 Documentation

6. Additional Plans

To further improve the project and its safety, additional plans are needed. First, make sure that the safety and users' privacy are secured. This can be achieved by adding a face ID feature, for fast and safe access. Second, product installation plans. Finally, training courses can be planned for the administration committee for the usage instructions.