

Software Project Management Plan

for

Student Council Election System

Prepared by

**Muhammed Efe İncir, Cem Kağan Kayılı, Burak Keçeci, Yasir Duman,
Matin Huseynzade, Gencay Turgut**

G03

25.12.2022

Table of Contents

1	Overview.
1.1	Purpose, scope, and objectives.
1.2	Assumptions and constraints.
1.3	Project deliverables.
1.4	Schedule and budget summary.
2	References.
3	Definitions.
4	Project context.
4.1	Product acceptance plan.
4.2	Project organization.
4.2.1	External interfaces.
4.2.2	Internal structure.
4.2.3	Roles and responsibilities.
5	Project planning.
5.1	Project work plans.
5.1.1	Work activities.
5.1.2	Schedule allocation.
5.1.3	Resource allocation.
5.1.4	Budget allocation.
5.1.5	Communication plan.
5.1.6	Identify the most critical risks.
5.2	Project assessment and control.
5.2.1	Schedule control plan.
5.2.2	Budget control plan.
6	Product delivery.

Revision History

Name	Date	Reason for Changes	Version
1.0	01.01.2023	Missing parts in the file have been completed	Baseline Version

1. Overview



This project involves the development of a web-based student election system that allows students to actively participate in the democratic process of electing their representatives and leaders within the school. The system will provide a secure and anonymous voting process, real-time updates on the status of the election, and a system to manage the entire election process, including verifying the eligibility of candidates and voters and reporting the results to the relevant school authorities. The main benefits of this system include improving voter turnout, enhancing the fairness and integrity of the election, reducing the workload of the school administration, and promoting student engagement and leadership development.

1.1. Purpose, scope, and objectives

Purpose:

The purpose of the SPMP is to outline the schedule and budget plan for the project. This SPMP serves as a comprehensive guide for the project and helps to ensure that all stakeholders are aware of the project timeline, resources, and goals. It is a critical tool for managing the project and ensuring its success.

Scope:

This SPMP covers all aspects of the project, including the development, testing, and deployment of the student election system. In addition, the SPMP includes a risk management plan to identify and mitigate potential risks that may arise during the project.

Objectives:

- The main objective of this SPMP is to provide a clear and detailed plan for the development and implementation of the student election system. This includes:
- Developing a web-based platform that allows students to nominate themselves or others for leadership positions, vote for preferred candidates, and view the results in real-time.
- Setting up and managing the nomination and voting periods, verifying candidate and voter eligibility, and ensuring the security and integrity of the voting process.
- Reporting the results of the election to the relevant school authorities.
- Improving voter turnout by making the voting process more accessible and user-friendly.
- Enhancing the fairness and integrity of the election by preventing fraud and ensuring the anonymity of the voting process.
- Reducing the workload of the school administration by automating the management of the election process.

1.2 Assumptions and constraints

Constraints

- Project should be delivered until June of 2023
- Project team can be 6 people at maximum
- The project team will have access to the necessary equipment and resources.
- The project team will have the necessary skills and expertise to complete the project.

Assumptions:

- Mr. Demirörs shall advise our team.
- Mr. Levent shall provide feedback as the project develops.
- The project must be completed within the allocated budget.
- The project must meet all relevant regulations and guidelines.
- The project must be delivered on the agreed upon date.

1.3 Project deliverables

1. 11/10/2022 Project Charter
2. 08/11/2022 Problem Analysis Report
3. 06/12/2022 SRS
4. 07/01/2023 SPMP
5. 21/03/2023 Software Design Report
6. 28/05/2023 Release

1.4 Schedule and budget summary

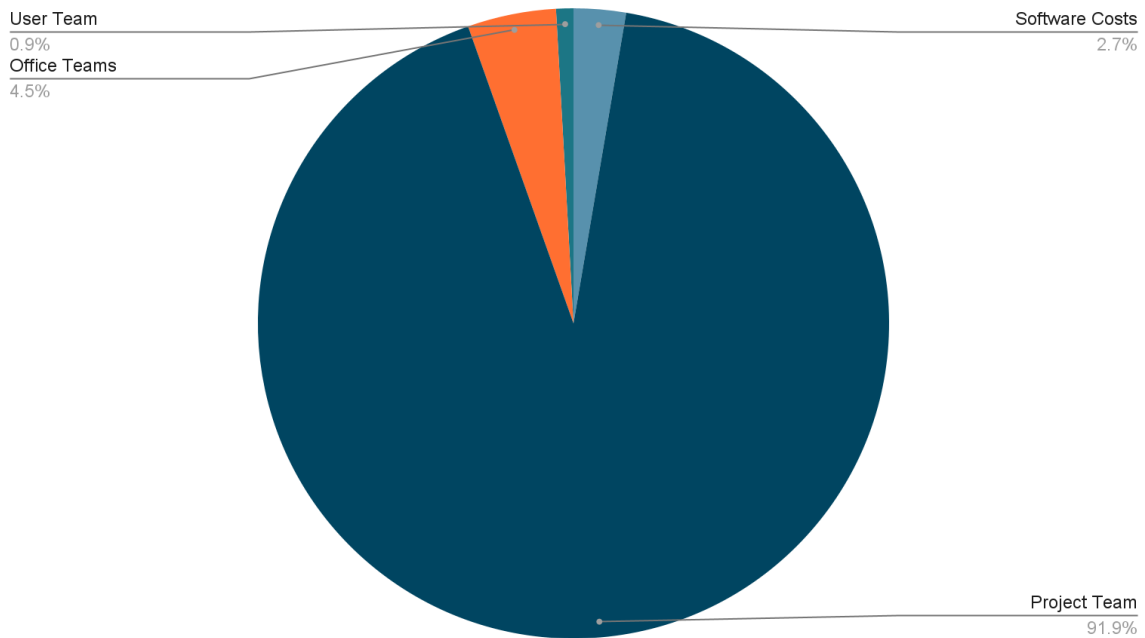
The project is expected to take approximately 6 months to complete, with the following milestones:

- Month 1: Gathering requirements and conducting a feasibility study.
- Month 2-3: Designing the user interface and system architecture.
- Month 4-5: Developing and testing the system.
- Month 6: Deploying the system and conducting user acceptance testing.

Budget Summary:

- **User Team:** 1,260\$
- **Office Teams:** 6,450\$
- **Software Costs:** 3,800\$
- **Project Team:** 130,650\$

Points scored



2 References

- [Öğrenci İşleri Daire Başkanlığı](#)
- [IEEE Guide to Software Requirements](#)
- Student Council Guidelines
- Elections Workflow

3 Definitions

SPMP: Software Project Management Plan

IZTECH: Izmir Institute of Technology

Website: Domain that hosts pages on the management and operation of the interrelated selection process.

IZTECH OBS: Öğrenci Bilgi Sistemi is a system which contains information we need such as full name, date of birth, major, faculty, year, GPA and etc. about the students of IZTECH.

UI: User Interface

UX: User Experience

SRS: Software Requirements Specification

IEEE: Institute of Electrical and Electronics Engineers

IDE: Integrated Development Environment. Application required for developing software

UML: Unified Modeling Language

4 Project context

4.1 Product acceptance plan

First, a review group will be determined by our mentor. This review group will review us and send a review report to us. According to this review report, we will update our documentation and submit the updated version to our mentor and advisor. Our mentor and advisor give us feedback. If there is no further need to update, it will be accepted.

Work Product	Acceptance Date
Project Charter	11.10.2022
Project Analysis Report	08.11.2022
SRS	06.12.2022

SPMP	07.01.2023
Software Design Report	21.03.2023
Front-End	19.04.2023
Back-End	19.04.2023
Test	19.04.2023
Release	28.05.2023

4.2 Project organization

4.2.1 External interfaces

Review Group : Group 2

- We can meet our review group in Microsoft Teams meeting every week and get feedback.

Mentor: Hüseyin Ünlü, huseyinunlu@iyte.edu.tr

- We can meet with our mentor in class every week and get feedback.

Advisor: Prof. Dr. Onur Demirörs, onurdemirors@iyte.edu.tr

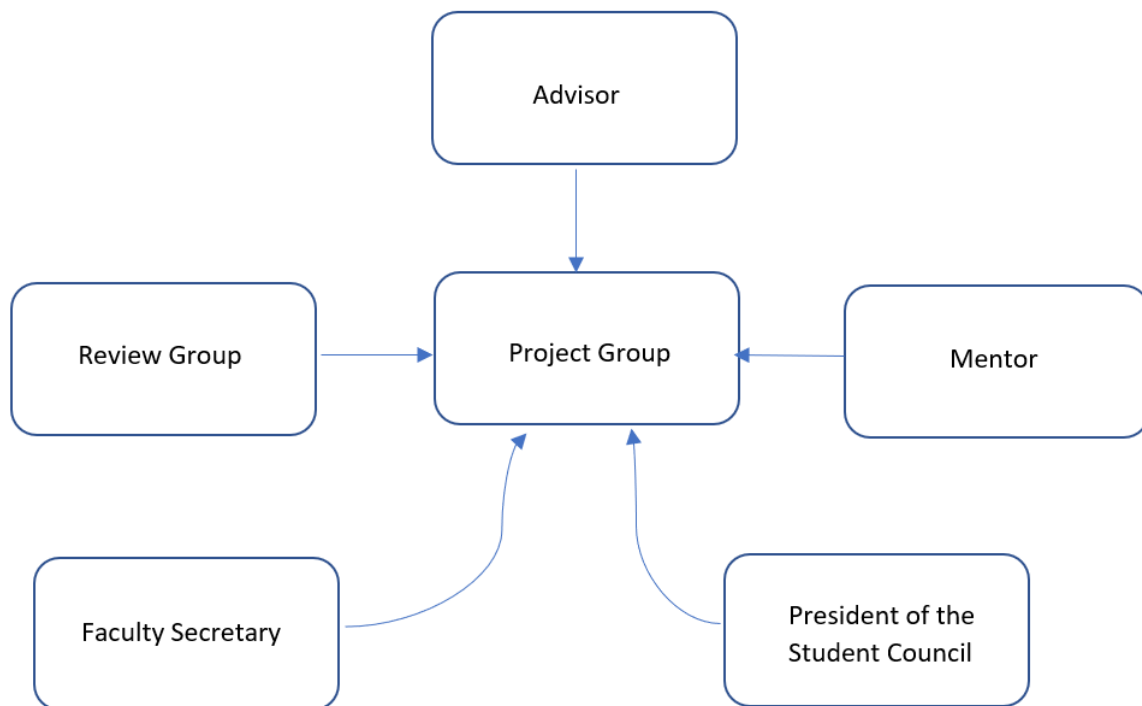
- We can meet with our advisor in class every week and get feedback.

Faculty Secretary: Tanıl Levent, tanillevent@iyte.edu.tr

- We can meet with faculty secretary in Microsoft Teams meeting and we can get answers to our questions.

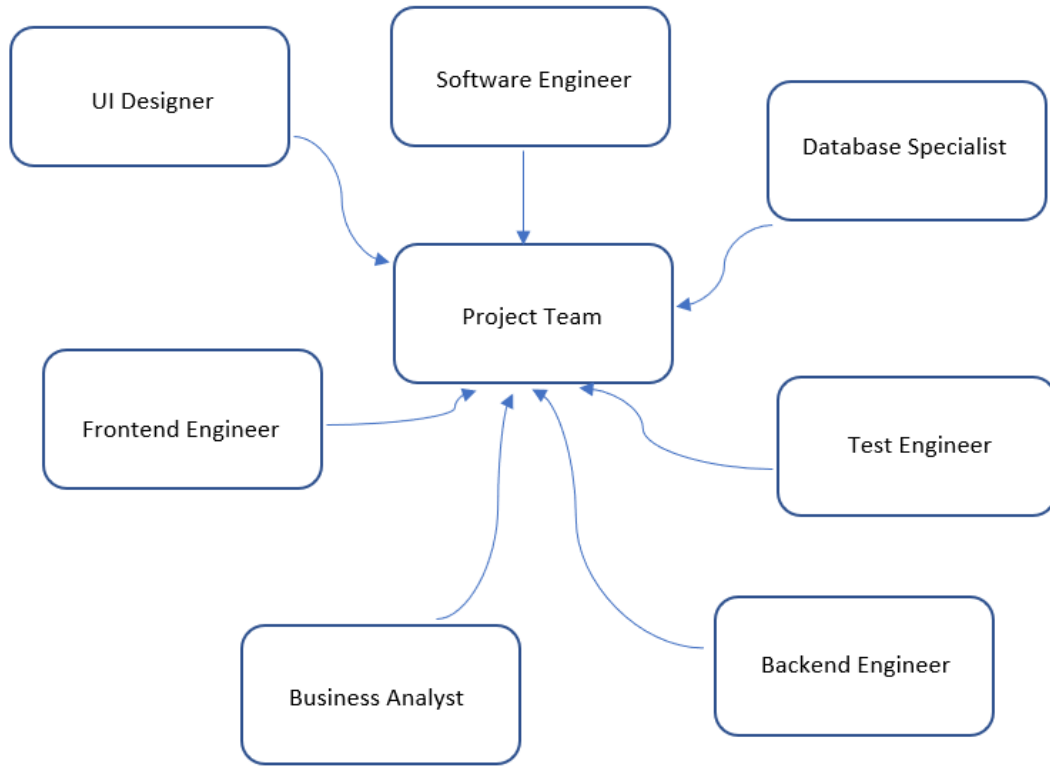
President of the Student Council: İlgim Efetürk

- We can meet with president of the student council in Microsoft Teams meeting and we can get answers to our questions.



4.2.2 Internal structure

The Roles and Responsibilities are granted with the individual demands and tendencies. As our group consists of 6 people, an individual works in every step in our project. Assignment to a special role means he/she is responsible for the work primarily.



4.2.3 Roles and responsibilities

Name	Roles
Cem Kağan Kayılı	Software Engineer, Test Engineer
Burak Keçeci	Project Manager, Software Engineer, Frontend Engineer, UI Designer
Muhammed Efe İncir	Project Manager, Backend Engineer
Matin Huseynzade	Software Engineer, Test Engineer, Business Analyst
Gencay Turgut	Database Specialist, Software Engineer, Frontend Engineer

Yasir Duman	Software Engineer, Test Engineer,Frontend Engineer
-------------	--

Software Engineer: The person responsible for planning, designing the software of the project. Also partakes in coding of both backend and frontend.

Test Engineer: The person responsible for testing the code. Will the unit **testting** and bug reports.

Frontend Engineer: **The person responsible for implementing the UI/UX design into the project..**

Business Analyst: The person responsible for planning and monitoring the budget, allocating necessary resources and optimizing the costs.

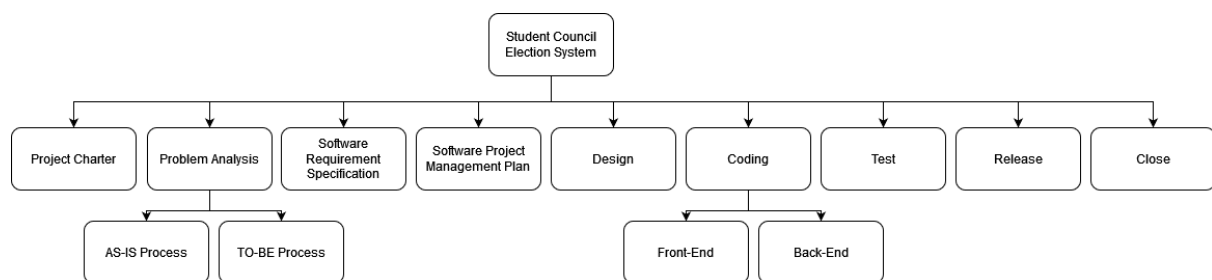
Backend Engineer: The person responsible for designing and implementing the server-side of the web application.

Database Specialist: The person responsible for the database implementation of the project. Will handle all the required sql code.

UI Designer:The person responsible for designing all the screens through which a user will move and create the visual elements.

5 Project planning

5.1 Project work plans



5.1.1 Work activities

Activity Number	1.1
Activity Name	Project Charter
Estimated Duration	3 days * 7 people
Responsible Member	Group 03 Team members
Necessary Resources	Skills: 1. Knowledge of the details of the project. 2. Analytic thinking ability. 3. Understanding the election process Tool: MS-Teams, Microsoft Word, Laptop
Product	Document of Project Charter
Acceptance Criteria	Document of Project Charter has to be well designed
Budget	\$16000
Start Date	05.10.2022
End Date	11.10.2022

Activity Number	1.2.1
Activity Name	AS-IS Process
Estimated Duration	20 days * 7 people
Responsible Member	Group 03 Team members
Necessary Resources	Skills: 1. Knowledge of the details of the project. 2. Analytic thinking ability. 3. Understanding the election process Tool: MS-Teams, Microsoft Word, Laptop
Product	Updated Problem Analysis Report
Acceptance Criteria	Should be coherent with Project Charter and election process
Budget	\$16000
Start Date	11.10.2022
End Date	8.11.2022

Activity Number	1.2.2
Activity Name	TO-BE Process
Estimated Duration	15 days * 7 people
Responsible Member	Group 03 Team members
Necessary Resources	Skills: <ol style="list-style-type: none"> 1. Knowledge of the details of the project. 2. Analytic thinking ability. 3. Understanding the election process Tool: MS-Teams, Microsoft Word, Laptop
Product	Updated Problem Analysis Report
Acceptance Criteria	The created system should be coherent with the election process and must be applicable.
Budget	\$16000
Start Date	18.10.2022
End Date	8.11.2022

Activity Number	1.3
Activity Name	Software Requirements Specification
Estimated Duration	9 days * 7 people
Responsible Member	Group 03 Team members
Necessary Resources	Skills: <ol style="list-style-type: none"> 1. Ability to use Google Documents, 2. Ability to use UML diagram creator, and draw.io, ability to understand the UML design. Tool: MS-Teams, Microsoft Word, Laptop
Product	Updated SRS Document
Acceptance Criteria	SRS should be drawn to up according to the IEEE Standards.
Budget	\$14000

Start Date	15.11.2022
End Date	6.12.2022

Activity Number	1.4
Activity Name	Software Project Management Plan
Estimated Duration	12 days * 7 people
Responsible Member	Group 03 Team members
Necessary Resources	Skills: <ol style="list-style-type: none"> 1. Ability to analyze allocations, 2. Ability to use Google Documents, and Gantt chart Tool: MS-Teams, Microsoft Word, Laptop
Product	Updated SPMP Document
Acceptance Criteria	SPMP should be drawn to up according to the IEEE Standards. Schedule, resource, budget allocations' details should be analyzed and written neatly and realistic.
Budget	\$12000
Start Date	20.12.2022
End Date	7.1.2023

Activity Number	1.5
Activity Name	Design
Estimated Duration	14 days * 7 people
Responsible Member	Group 03 Team members
Necessary Resources	Skills: <ol style="list-style-type: none"> 1. Ability to understand design, time allocations and system architecture. Ability to use Google Documents, Gantt chart and IDE, UML diagram creator Tool: MS-Teams, Google Documents, Online UML Diagram Creator, draw.io, Laptop

Product	Updated Design
Acceptance Criteria	Software Design Report should be drawn to up according to the IEEE Standards.
Budget	\$17000
Start Date	01.03.2023
End Date	21.03.2023

Activity Number	1.6.1
Activity Name	Front-End
Estimated Duration	30 days * 7 people
Responsible Member	Group 03 Team members
Necessary Resources	Skills: 1. Ability to create algorithms and code. Tool: MS-Teams, IDE, Laptop
Product	Front-End
Acceptance Criteria	Front end should be coherent with design.
Budget	\$17000
Start Date	21.03.2023
End Date	19.04.2023

Activity Number	1.6.2
Activity Name	Back-End
Estimated Duration	30 days * 7 people
Responsible Member	Group 03 Team members
Necessary Resources	Skills: 1. Ability to create algorithms and code. Tool: MS-Teams, IDE, Laptop
Product	Back-End
Acceptance Criteria	Back end should be coherent with design.

Budget	\$17000
Start Date	21.03.2023
End Date	19.04.2023

Activity Number	1.7
Activity Name	Test
Estimated Duration	14 days * 7 people
Responsible Member	Group 03 Team members
Necessary Resources	Skills: <ol style="list-style-type: none"> 1. Ability to understand the stages of the testing plan 2. Ability to analyze the outcomes. 3. Ability to use Google Documents Tool: MS-Teams, IDE, Laptop
Product	Updated Test Plan Document
Acceptance Criteria	Tests should be efficient and the outcome should be clear.
Budget	\$17000
Start Date	29.03.2023
End Date	19.04.2023

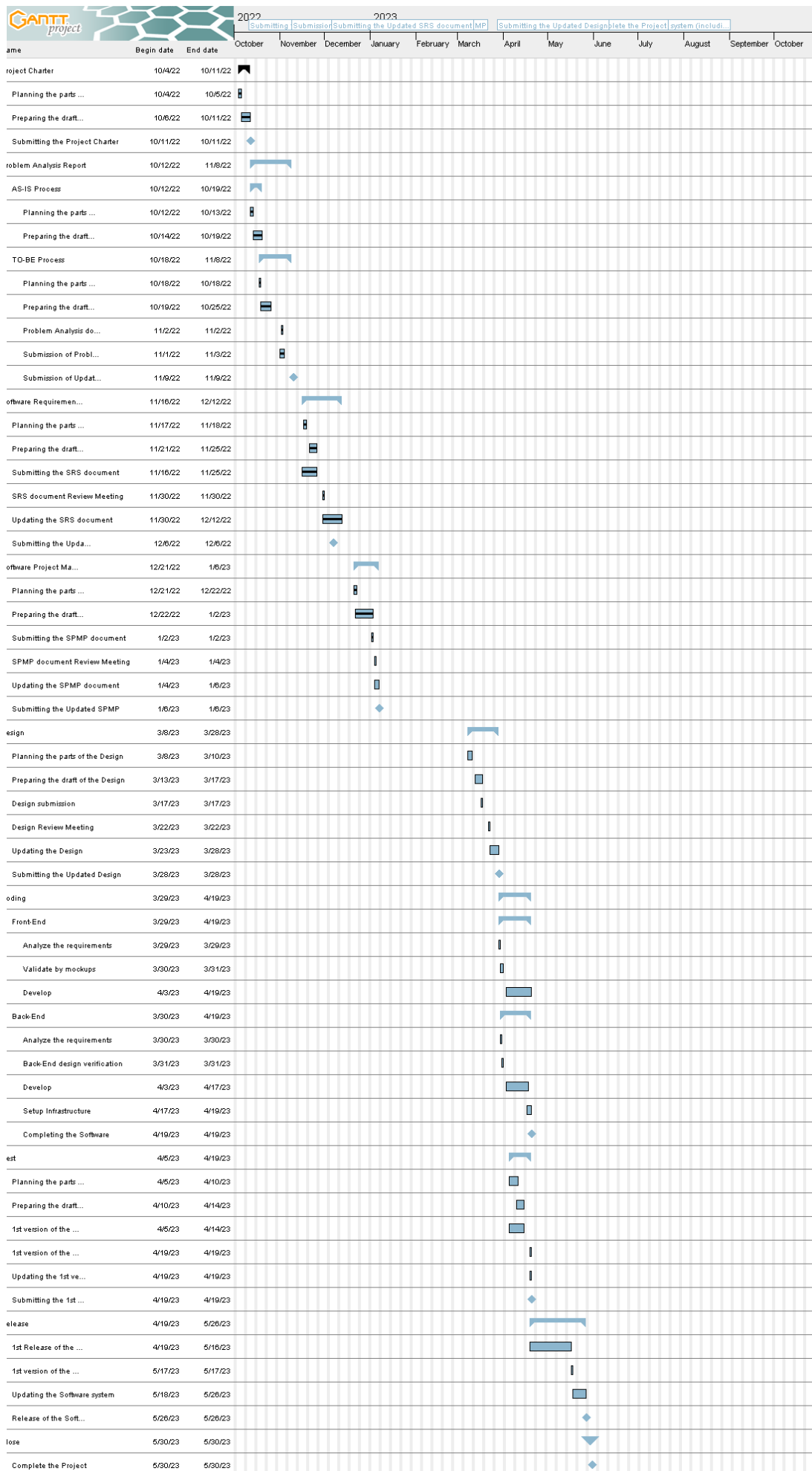
Activity Number	1.8
Activity Name	Release
Estimated Duration	8 days * 7 people
Responsible Member	Group 03 Team members
Necessary Resources	Skills: <ol style="list-style-type: none"> 1. Ability to understand the stages of the Release plan 2. Ability to analyze the outcomes. 3. Ability to use Google Documents Tool: MS-Teams, Microsoft Word, Laptop

Product	2nd Release Student Council Election System
Acceptance Criteria	The system should be consistent and work properly.
Budget	\$10000
Start Date	10.05.2023
End Date	28.05.2023

Activity Number	1.9
Activity Name	Close
Estimated Duration	1 day * 1 person
Responsible Member	Project Manager
Necessary Resources	-
Product	Student Council Election System
Acceptance Criteria	The project should be consistent and should work properly.
Budget	-
End Date	30.05.2023

5.1.2 Schedule allocation

Activity	Duration(in days)	Precedence
Project Charter	3	
AS-IS Process	20	Project Charter
TO-BE Process	15	Project Charter
Software Requirement Specification	9	AS-IS Process, TO-BE, Process
Software Project Management Plan	12	Software Requirement Specification
Design	14	Software Project Management Plan
Front-End Coding	30	Design
Back-End Coding	30	Design
Test	14	Design
Release	8	Front-End Coding, Back-End Coding, Test
Close	1	Release



5.1.3 Resource allocation

- **Laptop:** They are devices that can run the **IDEs** and programs to be used during the software development process and are equipped with suitable hardware for the use of communication programs (Microsoft teams, discord).
- **Microsoft Teams:** Team members to work together on tasks, share files and documents, and collaborate on projects in real-time. Offers a variety of communication tools, including chat, video conferencing, and audio calls, which can help teams stay connected and stay in touch even when they are not physically together.
- **Discord:** Discord provides both voice and text chat channels that can be used for real-time communication among team members. Discord also includes a file library that can be used to share documents and other materials related to a project or team. Discord includes features such as roles and channels that can be used to organize team members and keep discussions and tasks organized.
- **Microsoft Office and LibreOffice:** Include word processing software, such as Microsoft Word and LibreOffice Writer, that can be used to create documents, reports, and other written materials related to a project.
- **Telephone:** For office environment or computer-free situations, each team member should be provided with a phone with a line inside.
- **Cloud Services:** A server must be obtained from a remote server provider to provide a project development and testing environment.
- **SQL Server:** It must offer enough storage space to accommodate the data in the database.
- **Chart/Diagram Programs:** Program licenses and memberships required for to draw graphics. (ARIS Express, Draw.io, Lucid Chart etc.)
- **Canva:** Canva is a graphic design website that allows users to create and edit visual content such as presentations, user interface, and documents.
- **IDE Licenses:** An IDE (Integrated Development Environment) license is a legal agreement that allows an individual or organization to use a software application designed to help developers write, test, and debug code.

Activity Name	Project Charter
Estimated Duration	3 days * 7 person

Responsible Member	Group 03 Team members
Necessary Resources	Tool: MS-Teams, Microsoft Word, Laptop, Discord, Telephone
Start Date	05.10.2022
End Date	11.10.2022

Activity Name	AS-IS Process
Estimated Duration	20 days * 7 person
Responsible Member	Group 03 Team members
Necessary Resources	Tool: MS-Teams, Microsoft Word, Laptop, Discord, Telephone, Chart/Diagram Programs
Start Date	11.10.2022
End Date	8.11.2022

Activity Name	TO-BE Process
Estimated Duration	15 days * 7 person
Working Member	Group 03 Team members
Necessary Resources	Tool: MS-Teams, Microsoft Word, Laptop, Discord, Telephone, Chart/Diagram Programs
Start Date	18.10.2022
End Date	8.11.2022

Activity Name	Software Requirements Specification
Estimated Duration	9 days * 7 person
Responsible Member	Group 03 Team members
Necessary Resources	Tool: MS-Teams, Microsoft Word, Laptop, Canva, Discord, Telephone, Chart/Diagram Programs
Start Date	15.11.2022

End Date	6.12.2022
-----------------	-----------

Activity Name	Software Project Management Plan
Estimated Duration	12 days * 7 person
Responsible Member	Group 03 Team members
Necessary Resources	Tool: MS-Teams, Microsoft Word, Laptop, ,Discord, Telephone, Chart/Diagram Programs
Start Date	20.12.2022
End Date	7.1.2023

Activity Name	Design
Estimated Duration	14 days * 7 person

Responsible Member	Group 03 Team members
Necessary Resources	Tool: MS-Teams, Microsoft Word, Laptop, ,Discord, Canva
Start Date	01.03.2023
End Date	21.03.2023

Activity Name	Front-End
Estimated Duration	30 days * 3 person
Responsible Member	Frontend-Engineer
Necessary Resources	Tool: MS-Teams, Laptop, Discord, Canva, IDE licenses
Start Date	21.03.2023
End Date	19.04.2023

Activity Name	Back-End
Estimated Duration	30 days * 3 person
Responsible Member	Backend Engineer
Necessary Resources	Tool: MS-Teams, Laptop, Discord, IDE licenses, SQL Server, Cloud Services
Start Date	21.03.2023
End Date	19.04.2023

Activity Name	Test
Estimated Duration	14 days * 7 person
Responsible Member	Group 03 Team members
Necessary Resources	Tool: Laptop, Discord, IDE licenses, SQL Server, Cloud Services
Start Date	29.03.2023

End Date	19.04.2023
-----------------	------------

Activity Name	Release
Estimated Duration	8 days * 7 person
Responsible Member	Group 03 Team members
Necessary Resources	Tool: MS-Teams, Microsoft Word, Laptop
Start Date	10.05.2023
End Date	28.05.2023

Activity Name	Close
Estimated Duration	1 days* 1 person
Responsible Member	Project Manager

Necessary Resources	-
End Date	30.05.2023

5.1.4 Budget allocation

Project Budget										
Budget Items Programme activities	October 2022	November 2022	December 2022	January 2023	February 2023	March 2022	April 2023	May 2023	June 2023	Total
Software costs										
Application software user licences	120	120	120	50	50	120	120	120	50	870
Cloud services						180	180	180	150	690
Database user licences						90	90	90	70	340
Disk storage	20	20	20	10	10	160	160	160	160	720
Additional security applications						300	300	300	280	1180
Project team										
Project manager	6200	6200	6200	5000	5000	6200	6200	6200	5000	52200
Systems analysts	3600	3600	3600	3000	3000	3600	3600	3600	3000	30600
Programmers	3150	3150	3150	3000	3000	3150	3150	3150	3000	27900
Systems testers	1500	1500	1500	3000	3000	1500	1500	1500	3000	18000
Additional team resources eg contractors, temporary staff, other consultants, learning material	340	270	200	180	180	200	200	200	180	1950
Project team and office costs										
Maintenance of equipment	720	720	720	390	390	720	720	720	390	5490
Communications costs	120	120	120	80	80	120	120	120	80	960
User team										
User team leader								230	230	460
User team members								400	400	800
TOTAL	15770	15700	15630	14710	14710	16340	16340	16970	15990	142160
TOTAL BUDGET	142160									
STRECTH MARGIN	4000									
NET BUDGET	146160									

Note:The amount of the money in the budget allocation plan above are calculated in dollar(\$).

5.1.5 Communications plan

This subclause of the SPMP shall provide an appropriate approach and plan for project communications activities based on the information needs of each stakeholder or group, available organizational assets, and the needs of the project. The key benefit of this process is a documented approach to effectively and efficiently engage stakeholders by presenting relevant information in a timely manner.

Description	Type	Delivery Method	Frequency	Responsible Role
Initialization	Meeting	Online or face to face meeting	One-time	Project Manager
Report	Progress Report	Email	Weekly	Project Manager
Testing results	Results report	Email	As needed	Quality Assurance Lead
Delivery	Meeting	Online or face to face meeting	One-time	Project Manager
Project Quality Report	Final Report	Email	One-time	Project Manager
Meeting with Mr.Tanıl	Meeting	Online meeting	Once a month	Project Manager
Meeting with Mentor	Meeting	Face-to-face meeting	Weekly	Project Manager

Initialization: Project Manager shall initialize the development of the project. An online or face to face meeting shall be executed. Project manager shall describe their plans about the project.

Report: Project Manager shall report the current status of the project to the customer by means of Email.

Testing Results: Quality Assurance Lead shall test the software functionalities as it's getting developed and the results of the tests shall be delivered to whole team.

Delivery: Once the project is ready to be submitted, Project manager establishes a meeting with the customer and presents the product and deliverables.

Project Quality Report: Project Manager shall send the quality report to the customer at the end of the project.

Meeting with Mr.Tanıl: Mr.Tanıl will provide feedbacks about the ongoing project at hand every month.

Meeting with mentor: Whole team will attend to a meeting to mentors to get a feedback upon ongoing project.

5.1.6 Identify the most critical 3 risks

Risk 1 : Personnel assigned to the project may not have enough skill to complete task.

Probability: Low

Solution:

- If it is clear that the person is unable to fulfill his duty, the task may be assigned to another person.
- Training or tutoring may be considered to help person acquire the skills needed.

Risk 2 : Project budget may not be enough to complete project.

Probability: Low

Solution:

- Take out a loan from a bank
- By reducing the project budget, the requirements can be reduced so that less money is needed.
- Finding the project partners to provide financing for the project

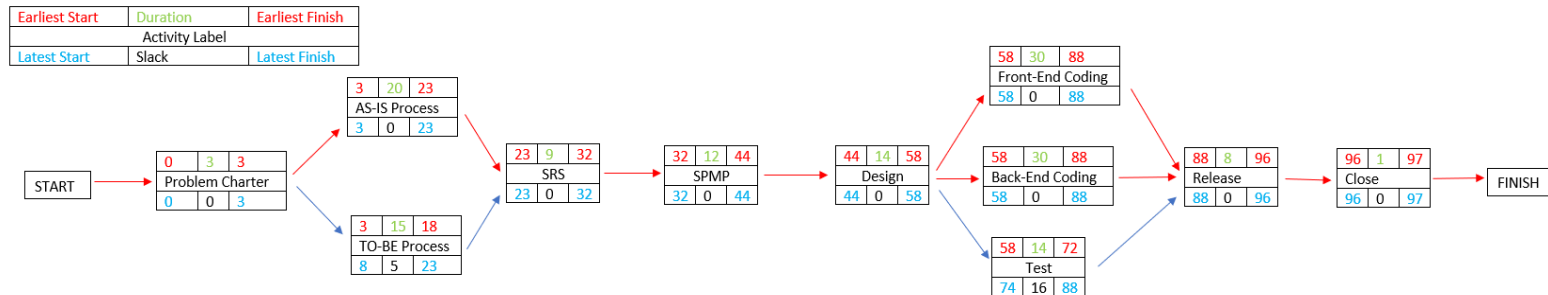
Risk 3 : Project time is limited so there may not be enough time to correct misunderstanding and faults.

Probability: Low

Solution:

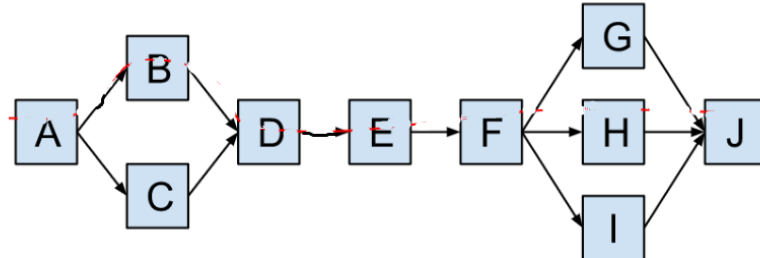
- Increasing communication between team members can prevent mistakes.
- In the final stages of the project, a checklist can be created to check that work is being done on an orderly basis.
- Delays can be avoided by doing extra work.

5.1.7 Identify the critical path



5.1.8 Network Activity Diagram

- A. Project Charter
- B. AS-IS
- C. TO-BE
- D. SRS
- E. SPMP
- F. Design
- G. Frontend
- H. Backend
- I. Testing
- J. Release



5.2 Project assessment and control

This subclause of the SPMP shall specify the metrics, reporting mechanisms, and control procedures necessary to measure, report, and control the project schedule and budget.

5.2.1 Schedule control plan

To ensure that the project stays on track and meets its deadlines, the project manager will check in with each team member every week to confirm that they are meeting their work commitments and making progress towards the project milestones.

If a team member is falling behind or experiencing difficulties in completing their tasks, the project manager will consult with them and the roles engaged in the relevant work activity or milestone to evaluate if it is still possible to meet the scheduled deadline.

If it is not possible to complete the work activity or milestone by the deadline, the project manager will convene an emergency meeting with all team members to identify alternative strategies to get the project back on track. This may involve revising the timeline or allocating additional resources to complete the work activity or milestone, or identifying other tasks that can be completed ahead of schedule to make up for the delay.

If no alternative strategies can be identified, the project manager will need to request an extension of the deadline from the relevant authorities or stakeholders, such as the school administration or the instructors.

The project schedule and timeline will be reviewed and adjusted on a regular basis, based on the progress of the project and any changes in the requirements or constraints. The distribution of resources and the estimating plan will also be reviewed and adjusted as needed to ensure that the project stays on track and meets its objectives.

To facilitate communication and coordination among team members, the project group will use discord and other online tools to communicate frequently, and will hold regular meetings and work sessions to discuss the progress and outcomes of the project. The results of these meetings will be shared with the project manager and any relevant stakeholders.

5.2.2 Budget control plan

The initial budget of the plan is decided to be 142.160\$ according to our budget allocation at 5.1.4. To prevent overextending the budget will be checked every milestone. The initial cost is an approximated value that can change depending on several factors.

6 Product delivery

- The student election system will be delivered as a web-based platform, accessible via a web browser on any device with internet access.
- The platform will be hosted on a secure and reliable server, and will be available 24/7 during the nomination and voting periods.
- The platform will be designed to be user-friendly and intuitive, with clear instructions and guidance for students to nominate themselves or others, and to vote for their preferred candidates.
- The platform will provide real-time updates on the status of the election, including the number of candidates and voters, and the results of the voting.
- The platform will also include a secure and confidential system for managing the election process, including verifying the eligibility of candidates and voters, and reporting the results to the relevant school authorities.
- The platform will be tested and evaluated by a group of representative students before it is deployed to ensure that it meets the requirements and expectations of the school.
- Upon delivery, the platform will be handed over to the school administration, along with any necessary documentation and user guides to help them manage and maintain the system.
- During the development process, the stakeholders will be informed once a month and changes will be made according to their feedback.
- Expense list will be delivered. Payment will be taken accordingly.