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**Software Project Management Plan**

**Project Name**

**Team Number**

**Name Surname, Student ID**

**Name Surname, Student ID**

**Name Surname, Student ID**

**Name Surname, Student ID**

**Name Surname, Student ID**

Bilkent University

Department of Information Systems and Technologies

04.12.2024

Change History

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Project Team

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|  |  | Use the email that you regularly check! |
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Project Details

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| --- | --- |
| **Project Name** | **Project Name** |
| **Software Name** | **Software (Product) Name, if the same with the project name, repeat it** |
| **Company Name** | **(if there is a sponsor company and it is applicable, otherwise state “No sponsor company”)** |
| **Academic Advisor** | **Instructor Name, with full title** |
| **Github URL** | **Github URL** |
| **WEB page** | **(if applicable, if not leave it empty)** |

Individual Contributions Overview

|  |  |
| --- | --- |
| **Name, Surname** | **Summary of Contributions to the SPMP Document** |
| Umut Hüseyinoğlu | Main responsible of the Document Formatting  Contributed to Executive Summary, Requirements and System Model  Main responsible of all UML diagrams |
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Executive Summary

Text, maximum 1 page, no images.

This section provides a brief overview of your SPMP, and your major findings and most important things that your Executive should notice / read.

Table of Contents

**Page Number**

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List of Tables

**Page Number**

The list of tables (if any) should be automatically created by MS Word.

List of Figures

**Page Number**

The list of figures (if any) should be automatically created by MS Word.

Abbreviations

|  |  |
| --- | --- |
| NPV | Net Present Value |
| SPMP | Software Project Management Plan |
| WBS | Work Breakdown Structure |
| *Abbreviations need to be alphabetically ordered* |  |
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# Scope

Your whole document’s paragraph text should be with font face Cambria, font size 12pt, line spacing of 1.5, paragraphs justified.

Briefly describe the scope of the project management plan activities and the Software Project Management Plan (SPMP) document with relation to the software product you are developing.

Hint: write this section after you have finished the SPMP document, so that you will have a better understanding of the activities that you have concluded and what activities you left out knowingly and intentionally.

# Project Schedule

This section of the SPMP shall specify the work packages, identify the dependency relationships among them, state the resource requirements, and provide the allocation of budget and resources to work packages.

## Work Packages & Dependencies

This subsection of the SPMP shall specify the work packages for the activities and tasks that must be completed in order to satisfy the project agreement. Each work package shall be uniquely identified; identification may be based on a numbering scheme and descriptive titles. A diagram depicting the breakdown of activities into subactivities and tasks (a Work Breakdown Structure - WBS) should be used to depict hierarchical relationships among work packages. Clearly specify which team member(s) (student) will be doing which task.

Moreover, this subsection of the SPMP shall specify the ordering relations among work packages to account for interdependencies among them and dependencies on external events. Techniques such as dependency lists / dependency table, activity networks, and the critical path method may be used to depict dependencies among work packages.

Add any other milestone / deliverable as required. For each milestone, indicate Use Cases & tasks to be completed, and which student will be doing which task. Reference the Use Case diagram that you will use in section 3.2 of this document.

Do not forget these three important milestones:

* Milestone-1 (this semester): - 1st Increment (20% of the functionality))
* Milestone-2 (next semester): - 2nd Increment (Additional 40% of the functionality)
* Milestone-3 (next semester) – Final Increment (Additional 40% of the functionality)

## Resource Requirements

This subsection of the SPMP shall provide, as a function of time, estimates of the total resources required to complete the project. Numbers and types of personnel, computer time, support software, computer hardware, office and laboratory facilities, travel, and maintenance requirements for the project resources are typical resources that should be specified. Assign cost items for each of the resource requirements by using estimations or by doing market research.

## Cost Estimation, Net Present Value, Budget and Resource Allocation

This subsection of the SPMP shall specify the allocation of budget and resources to the various project functions, activities, and tasks. Create a cash flow diagram to show and track expenditures that you have experienced and you are planning to experience throughout the project, for both semesters. Any cost related to the project should be mentioned here, costs such as (examples): software purchased, hardware devices leased, AWS payments to be made, transportation costs related to the project, beverage costs, printouts etc. These cost items should be referring to both semesters, also both realized and expected. After creating the cash flow diagram conduct a Net Present Value (NPV) calculation to show what the estimated cost of your overall project by taking into account the time value of money concept.

When showing the costs in your cash flow diagram, use the End-of-Month approach, meaning that any cost that was realized between the first day of the month and the last day of the same month will be treated the same and will be shown in the last day of that month, e.g.: assume that you have had three expenses on November, 2,000TL on the 5th of November, 5,000TL on the 20th of November and 3,000TL on the 27th of November. In accordance with the End-of-Month approach you will assume and show on your cash flow diagram a single cash flow of 10,000TL (2,000 + 5,000 + 3,000) that corresponds to the 30th of November (last day of the month).

Convert all cash flows to the 1st of September by conducting an NPV analysis, by using the following information.

Information to be used when doing the NPV analysis:

* Point 0 in your cash flow diagram: September 1, 2024
* Monthly interest rate to use (For TL): 0.05 (5%)
* Monthly interest rate to use (For USD): 0.001 (0.1%)

Comment and discuss your findings and how they may affect your overall project.

Table 1 Table captions need to be on top of the table

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| --- | --- | --- | --- | --- |
| **Info** | **Project A** | **Project B** | **Project C** | **Project D** |
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Figure 1 Figure captions need to be below the figure

If you need to use lists in your SPMP document please follow the following formatting rules.

For unordered lists:

* Level 1
* Level 1
  + Level 2
  + Level 2
    - Level 3
    - Level 3
  + Level 2
* Level 1

For ordered lists:

1. Level 1
2. Level 1
   1. Level 2
   2. Level 2
      1. Level 3
      2. Level 3
   3. Level 2
3. Level 1

# Project Effort Estimation

Estimate the required effort for your project based on the following three different estimation techniques, given in each subsection accordingly.

## Work Breakdown Structure (WBS) - Decomposition-Based Estimation

Decompose your software product & supporting software engineering processes, add them effort elements and add them up. You should reference the WBS given in section 2.1.

## Use Case Based Estimation

Based on your Use Case Diagram, calculate Use Case Points (UCP). Appropriately reference the SRS document but also use the latest version from SRS v2 of your Use Case diagram here.

## Agile Estimation

Based on your Use Case Narratives, calculate Story Point (SP) for each Use Case.

## Discussion

Compare and discuss these three different estimations on your effort. Discuss why there are differences between the three estimation results. Discuss which one is more accurate / more realistic.

# Project Monitoring and Measuring

This is the section that you will discuss how you will control if your project is on schedule or if you are moving too fast or too slow.

1. Explain how you will monitor progress (such as Scrum meetings, weekly meetings, Zoom meetings).
2. List and describe project, product, and process metrics that you will be collecting, when and how. How and where you will be storing these metrics? Why are you collecting these metrics?

# Product Verification and Validation

Create a plan on how you will be conducting Product Verification and Validation.

1. Explain the techniques that you will use to verify and validate your software product.
2. Explain the verification and validation tools that you will use.
3. Create a schedule to show the verification and validation techniques and tools mentioned in items 1 and 2 above.
4. Prepare at least ONE sample Test Cases for each verification and validation activity that you have planned. If for a specific verification and validation activity you do not provide any test case, then specify why you could not have a test case.

# Software Development Environment

Create a categorized table with version number & description of your software development environment such as Programming Languages, Frameworks, APIs, Databases, Cloud Services, Version Management, V&V, Project Management software, etc.

# Discussions

This is the part where you discuss the problems you have experienced while preparing the SPMP.

In this document you will discuss the following subheadings within the perspective of SPMP and while you were preparing it and the activities you conducted for its preparation. If some of these subheadings are not applicable, just specify why they are not applicable.

## Limitations and Constraints

List any limitations and constraints you experienced while preparing the SPMP.

## Health and Safety Issues

List any health and safety issues you experienced while preparing the SPMP.

## Legal Issues

List any legal issues you experienced while preparing the SPMP.

## Economic Issues and Constraints

List any economic issues and constraints you experienced while preparing the SPMP.

## Sustainability

List any sustainability related activities you undertake while preparing the SPMP.

## Ethical Issues

List any ethical issues you experienced while preparing the SPMP.

## Multidisciplinary Collaboration

List any multidisciplinary collaboration you realized while preparing the SPMP.

# References

|  |  |
| --- | --- |
| [1] | A Guide to the Project Management Body of Knowledge, Project Management Institute, 2021. |
| [2] | J. Pinto, Project Management: Achieving Competitive Advantage, 5 / Golbal dü., Pearson, 2019. |