ÉCOLE
POLYTECHNIQUE
MONTRÉAL

Le génie sans frontières

Time Monitoring Tool
Software Development Plan

Version <1.1>

Revision History

Date	Version	Description	Author
10/01/01	1.0	First Draft	Sabrina Laflamme
12/01/01	1.1	Completion of Document	John Lemon

Preface

The following case study has been modified from its original content.

The case study is meant to be used as a starting point to help you understand how to use the artifact. Thus, information has been shrunk to avoid navigating an enormous document (in size and pages).

You can also refer to the related template (in HTML format or WORD format) in the UPEDU Artifacts Templates Project Management Section.

Regards,

Unified Process for Education Team

Table of Contents

1. INTRODUCTION 5

1.1 Purpose 5
1.2 Scope 5
1.3 Definitions, Acronyms, and Abbreviations 5
1.4 References 5
1.5 Overview 5

2. PROJECT OVERVIEW 6

2.1 Project Purpose, Scope, and Objectives 6
2.2 Assumptions and Constraints 6
2.3 Project Deliverables 6
2.4 Evolution of the Software Development Plan 7

3. PROJECT ORGANIZATION 8

3.1 Organizational Structure 8
3.2 External Interfaces 8
3.3 Roles and Responsibilities 8

4. MANAGEMENT PROCESS 9

4.1 Project Estimates 9
4.2 Project Plan 9
4.3 Project Monitoring and Control 12

Software Development Plan

1. Introduction

1.1 Purpose

The objective of this Software Development Plan is to define the activities in terms of the phases and iterations required for developing a Time Monitoring Tool.

1.2 Scope

This Software Development Plan describes the overall plan to be used by the team for developing the Time Monitoring Tool. The details of the individual iterations will be described in the Iteration Plans.

The plans as outlined in this document are based upon the software requirements as defined in the SRS Document.

1.3 Definitions, Acronyms, and Abbreviations

See the Project Glossary

1.4 References

For the Software Development Plan, the list of referenced artifacts includes:

- SRS
- Iteration Plans
- Glossary
- Configuration Management Plan
- Measurement Plan
- Project Measurements
- Risk List
- Test Plan

1.5 Overview

This *Software Development Plan* contains the following information:

Project Overview — provides a description of the project's purpose, scope, and objectives. It also defines the deliverables that the project is expected to deliver.

Project Organization — describes the organizational structure of the project team.

Management Process — explains the estimated schedule, defines the major phases and milestones for the project, and describes how the project will be monitored.

Technical Process Plans — provides an overview of the software development process, including methods, tools and techniques to be followed.

Supporting Process Plans — this includes the configuration management plan.

2. Project Overview

2.1 Project Purpose, Scope, and Objectives

The Time Monitoring Tool allows developers working within a defined software development process to record the time spent on the various activities, in a database. The TMT will also allow a manager to derive analyses and produce reports based on the data entered in the system.

The Developer Client Module allows developers to log onto the TMT system and to record timestamps corresponding to their activities in a convenient way.

The Manager Client Module allows a manager to retrieve timestamp information from the database to produce analyses and reports. The Developer and Manager Client Modules must provide a user interface that is available through a WWW browser.

2.2 Assumptions and Constraints

The TMT project should be implemented within a 13-week semester. The system must be available in time for the end of the session.

Moreover, the system must offer high security levels using user authentification mechanisms.

Finally, the system must ensure that all stored data keep its integrity.

2.3 Project Deliverables

Deliverables for each project phase are identified in the Development Case. Deliverables are delivered towards the end of the iteration, as specified in section *4.2.4 Project Schedule.*

Requirements

- Supplementary Specifications
- Use-Case Model
- Use-Case Specifications
- Glossary
- User Interface Prototype Document

Analysis & Design

- Analysis Classes
- Design Classes
- Use-Case Realization
- Design Model

Implementation

- Implementation Model (Model and document)
- Components
- Builds and Executables

Tests

- **Defect**
- **Test plan**
- **Test cases**
- **Test Results**
- **Test Components**
- **Test Evaluation Report**

Configuration & Change Management

- **Configuration Management Plan**
- **Workspaces**
- **Project Referential**
- **Change Requests Reports**

Project Management

- **Software Development Plan**
- **Iteration plans**
- **Work Orders**
- **Review Records**
- **Iteration Plans**

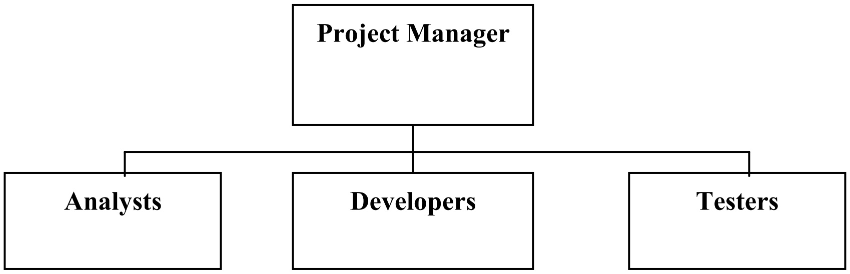
2.4 Evolution of the Software Development Plan

The Software Development Plan will be revised prior to the start of each Iteration phase.

3. Project Organization

3.1 Organizational Structure

The project team for the TMT project will be organized as follows:



3.2 External Interfaces

The project team will interact with the professor and the lab assistant to solicit inputs and review of relevant artifacts.

3.3 Roles and Responsibilities

Role	Responsibility
Project Manager	The Project Manager allocates resources, shapes priorities, coordinates interactions with the customers and users, and generally tries to keep the project team focused on the right goal. The Project Manager also establishes a set of practices that ensure the integrity and quality of project artifacts.
Systems Engineering Team	Primarily responsible for managing the Requirements workflow. Provides support and input to the Project Management workflow.
Software Engineering Team	Primarily responsible for the Analysis and Design, Implementation, Configuration and Change Management, workflows. Provides support and input to the Project Management workflow.
Test Team	Responsible for managing the Test, and Deployment workflows. The Test Team is responsible for test design, test execution, evaluation of test execution and recovery from errors, and assessing the results of test and logging identified defects. Provides support and input to the Project Management workflow.

Anyone on the project can perform Any Role activity.

4. Management Process

4.1 Project Estimates

The time-frame and effort estimates from previous project courses are the basis of this project schedule.

4.2 Project Plan

4.2.1 Phase Plan

The development of the Time Monitoring Tool System will be conducted using a phased approach where multiple iterations occur within a phase. The phases and the relative timeline are shown in the table below:

Phase	No. of Iterations	Start	End
Elaboration Phase	**2**	**Week 1**	**Week 6**
Construction Phase	**2**	**Week 7**	**Week 13**
Transition Phase	**1**	**Week 14**	**Week 15**

The project is divided in 4 iterations with 3 weeks per iteration.

During the first iteration, all needed tools should be gathered and installed; all requirements specifications should be understood and a TMT Client/Server prototype will be developed.

During the second iteration, all major Analysis activities take place. The system Architecture will be defined.

During the third iteration, all major Design activities take place and a critical system will emerge. The more important functionalities will be implemented.

During the fourth iteration, all construction and implementation activities take place and a final system will emerge. All non-functional specifications and less important functionalities will be implemented along with the proper GUI.

Finally, a last iteration will take place for the project's transition, if needed.

Refer to the Iteration Plan Documents for detailed information on each iteration planning.

4.2.2 Iteration Objectives

Each iteration has its own plan de development:

- **TMT_IP1 – first iteration**
- **TMT_IP2 – second iteration**
- **TMT_IP3 – third iteration**
- **TMT_IP4 – fourth iteration**

See the corresponding documents for each iteration

Iteration	Description	Associated Milestone	Addressed Risks
Iteration 1	• Understand the project and analyze the requirements • Realize necessary use-case diagrams and models • Start class diagram designs. • Configuration project repository and workspaces. • Develop the prototype.	Prototype	Clarifies user requirements up front. Develops realistic Software Development Plan. Early prototype for user review
Iteration 2	• Finalize all use-case related artifacts (Artifacts issued from the Analysis activities) • Enhance all project management artifacts • Enhance all configuration management artifacts. • Finalize the Test Plan. • Develope GUI	Architectural Prototype	Architectural issues clarified. Early prototype for user review.
Iteration 3	• Finalize all Design related artifacts • Update all produced artifacts. • Finalize Test Case Artifact. • Implement product functionalities	Prototype	The key features from a user and architectural prospective implemented.

Iteration 4	• **Test the product with the elaborated test cases.** • **Finalize all test-related artifacts.** • **Finish the product**	**Final product**	**Fully reviewed by user** **Product quality should be high.** **Defects minimized.**

4.2.3 Releases

Prototype: Function Client/Server Interface

Final Release: Complete.

4.2.4 Project Schedule

The high level schedule showing project phases, iterations, and milestones are presented in Section 4.2.2

For more detailed schedules (Each Iteration) Refer to the Iteration Plan Documents.

4.2.5 Project Resourcing

The project team is composed by 5 senior students with appropriate skills.

4.3 Project Monitoring and Control

4.3.1 Requirements Management

The requirements for this system are captured in the SRS document. Supplementary specifications are captured in the Supplementary Specifications document. Requested changes to requirements are captured in Change Requests, and are approved as part of the Configuration Management process.

4.3.2 Quality Control

All deliverables are required to go through the appropriate review process. The review is required to ensure that each deliverable is of acceptable quality, using guidelines and checklists. Formal reviews will be executed for each design and implementation subsystem. This will ensure that the objects under review meet the specified requirements.

4.3.3 *Reporting and Measurement*

Effort and time will be used to track progress of the project. Planned vs. Actual reports will be used by the project manager to measure progress.

Refer to the Measurement Plan Document

4.3.4 Risk Management

Risks will be identified in Inception Phase. Project risk is evaluated at least once per iteration and documented in the Risk List Document.

4.3.5 Configuration Management

Appropriate tools will be selected which provide a controlled versioned repository of project artifacts.

All source code, and data files are included in baselines. Documentation related to the source code is also included in the baseline, such as design documentation. All customer deliverable artifacts are included in the final baseline of the iteration, including executables.

Refer to the Configuration Management Plan Document