

# CSE 563 Project Report Number 1

## Team 19

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# 1. Executive Summary

## 1.1 Background & Purpose

- Objective: Design a Planning Poker assistant tool to enhance the estimation process of product backlogs using historical data from EffortLogger V2.0.

## 1.2. Customer Problem

- Core Issue: Lengthy planning poker sessions and the need for a tool that generates precise estimates based on past data.
- Stakeholders: Software Engineers, Scrum Master, Product Owner, and the Head of the Firm.

## 1.3. Envisioned System & Features

- Description: A web-based application that employs planning poker techniques to offer data-driven user story estimates.
- Key Features: Criteria-based user story selection, weight adjustments, detailed user story views, and sharing capabilities for stylized poker cards and session statistics.

## 1.4. Operational Environment

- Accessibility: Web-based tool, available on any device with internet connectivity.
- Support: Detailed documentation and a dedicated support team for post-deployment assistance.

## 1.5. Key Considerations

- Environmental: Minimal environmental impact with the primary concern being data server resource consumption.
- Organizational: Aims to reduce planning time, enhance software engineer efficiency, and promote a balanced work-life environment.

## 1.6. Risks & Challenges

- Security: Protecting confidential data from EffortLogger V2.0.
- Accuracy: The tool's estimates are contingent on the accuracy of user-input weights.

## 2. Customer Problem

### 2.1. Description of customer problem

The customer firm has software engineers conduct planning poker sessions to estimate product backlogs and needs a tool to aid in these sessions.

- They need a tool that generates accurate estimates based on historical data

### 2.2. Key stakeholders for this project

#### 2.2.1. Software Engineers

- Planning Poker sessions are longer than needed
  - Team spends too much time accessing personal repositories
    - Looking for relevant user stories takes too long
  - Need way to specify known criteria about the project before planning poker session
    - Narrow the user story data down to a few relevant ones
  - Need a rapid way of indicating weights of relevant user stories
- Adjusting weights of user stories takes too much time
  - Some estimates are significantly larger or smaller
    - Members explain the experiences behind their estimates and changes are made
  - Need a tool to quickly update the weights of user stories based on discussion
    - Helps come up with a new weighted average
  - Want a tool to show the contribution of each item or user story given a previous assessment
  - Want a button to quickly view the details of items and user stories
    - Allows them to adjust weights based on the discussion
- Want an easy way to share information to all team members and view statistics of session
  - Want a share button that makes information available to all the members

- Want a stylized planning poker card based on a weighted average
- Want to view the low and the high cards of team members
- Want to view several more statistics
  - range
  - simple average
  - average of cards from other team members excluding the highest and lowest

#### 2.2.2. Scrum Master and Product Owner

- Need consensus between developers to take less time
  - In case of significantly smaller/larger estimates, relevant data can be shown easily
- Acts as a moderator to encourage discussions and questions

#### 2.2.3. The head of the customer firm

- Needs to make better estimates/decisions when it comes to fixed pay projects
- Needs a secure tool so that confidential information regarding effort logged is secured
- Needs the developers to make good estimates for user story points so that overtime is avoided

## 3. Concept of Operations

### 3.1. Introduction

The planning poker assistant is a tool that selects historical user story data based on a set of criteria and provides data-driven estimates to user stories.

#### 3.1.1. Project Description

##### 3.1.1.1. Background

- Software engineers need a customized tool to aid in shortening planning poker sessions
- Product owner and scrum master want a tool that helps engineers come to consensus faster during planning sessions
- The head of the firm needs a secure tool that helps with better estimation on user stories and large projects

##### 3.1.1.2. Assumptions and Constraints

- The team members are familiar with the stories discussed and the historical data
- The number of individuals involved in planning poker sessions is not too large
- The planning poker assistant must be provided before December 1, 2023
- The planning poker assistant must be developed using Java, JavaFX and Java supported tools

#### 3.1.2. Overview of the Envisioned System

##### 3.1.2.1. Overview

- A web-based application that user planning poker techniques to provide estimates to user stories
- The planning poker tool can narrow the user story data down to a few relevant ones based on user selected criteria
- The planning poker tool assigns weights to relevant user stories based on user selected criteria
- The planning poker tool allows users to quickly view the details of relevant user stories

- The planning poker tool allows users to quickly edit the weights of relevant user stories
- The planning poker tool allows users to view and share stylized planning poker cards and statistics to other team members

#### 3.1.2.2. System Scope

- Project will encompass creating a planning poker aide that provides accurate estimates to user story data to users
- Project won't include allowing users to create new user stories to old development projects
- Project will enable users to share poker cards to others, but will not support text or video communication

### 3.2. Description of Envisioned System

The envisioned system is a web-application that will help ease the planning poker process by providing stylized cards and giving historical information from similar user stories.

#### 3.2.1. Needs, Goals and Objectives of Envisioned System

##### 3.2.1.1. Needs and Goals

- The planning poker tool needs to access a database populated with user story data from EffortLogger V2.0
- The planning poker tool needs to provide users with relevant user stories based on criteria chosen by user
- The planning poker tool needs to allow users to view and edit the relevant user stories provided by the tool
  - This includes editing the weights of each user story
- The planning poker tool needs to present a stylized card based on the weighted average of a user's user stories
- The planning poker tool needs to share statistics to user and other team members
  - The highest and lowest cards
  - The range of card values
  - Simple average of all cards

- The average card value excluding the highest and lowest outlier cards

#### 3.2.1.2. Objectives

- To save time and shorten the whole planning poker process
- To help the team reach consensus on user story point estimates
- To improve the accuracy of estimates by taking into account relevant user stories from the past

#### 3.2.2. Overview of System and Key Elements

- The users of the systems are software developers who will use the tool to assist in planning poker sessions
- The database is to be populated with user story data from EffortLogger V2.0
- The planning poker tool will provide users with an interface to view and edit weights of such suggested user stories
- The planning poker tool will provide the users an interface to view tool selected user stories
- The planning poker tool will also provide an interface to view and share key statistics from the members in the team

#### 3.2.3. Interfaces

- Database interface to fetch user stories from the database similar to the current user story
- User interface to view similar user stories selected from database
- User interface that allows users to view details of user stories given previous assessment and edit the weights of the user stories
- User interface to view key statistics like high, low and average of the estimates

#### 3.2.4. Modes of Operations

- Mode to select relevant user stories
- Mode to calculate a weighted average from the selected cards
- Mode to calculate a simple average from estimates of all users

#### 3.2.5. Proposed Capabilities



- The system will be easy to use with simple interfaces and proper documentation on how to use the system
- The system will be scalable to support the needs of the firm as it grows
- The system will be secure to protect private and confidential information
- The system will provide key statistics that are useful during planning poker discussions
- The system will provide stylized poker cards based on user story data to ease the planning poker process

### 3.3. Physical Environment

- Since the planning poker tool is a web-based application, physical environments will not be a significant factor
- The tool will be accessible from any device with an internet connection

### 3.4. Support Environment

- Sufficient documentation to operate Planning Poker Tool will be provided to make it easy to use
- There will be a support team to assist with fixing future bugs and issues after deployment of the application

### 3.5. Operational Scenarios

#### 3.5.1. Nominal Conditions

- If the user specifies criteria on a project, the planning poker tool will give related user stories from EffortLogger V2.0
- If the user edits the weights of user stories, the planning poker tool will recompute the weighted average of the user stories
- If the user selects the quick view button, the planning poker tool will provide the user the option to edit the weights and view details of each user story
- If the user selects the share button, the planning poker tool will allow them to view key statistics from the team

#### 3.5.2. Off-Nominal Conditions

- The planning poker tool will not function without a reliable internet connection
- The performance of the planning poker tool may get slowed down by an exceptionally large database

### 3.6. Impact Considerations

### 3.6.1. Environmental Impact

- Since the planning poker tool is a web-based application, there will be minimal environmental impact
- The data servers however small will use resources which might negatively impact the environment

### 3.6.2. Organizational Impacts

- The planning poker tool will help shorten the planning time allowing some additional time for development
  - This will help the software engineers maintain healthy work-life balance
- The planning poker tool will provide data-driven estimates based on historical user story data
  - This will help increase the efficiency of the software engineers on the team

### 3.7. Risks and Potential Issues

- The Planning Poker Tool fetches data from the database of EffortLogger V2.0 which has private and confidential data that needs to be well secured
- The accuracy of the estimates provided by the tool depends on the accuracy of the weights provided by the users

### Appendix B : Glossary of Terms

- EffortLogger: The application used to track effort and defect reports of employees
- Planning poker: A technique used to estimate effort required for a task
- Secure: Protect from unauthorized access
- Scalable: Able to accommodate more users
- Nominal Conditions: Conditions under which a system is designed to operate
- Off-Nominal Conditions: Conditions where the system needs to perform in a way that is different from normal

## 4. Conclusion

### 4.1 Introduction

- Brief Recap: Development of a Planning Poker assistant tool to streamline the estimation process using historical data from EffortLogger V2.0.

### 4.2 Customer Problem

- Core Issue:
  - Necessity for a tool to streamline planning poker sessions.
  - Emphasis on accurate estimates using past data.
- Stakeholders:
  - Software Engineers:
    - Challenges: Lengthy sessions, time-consuming weight adjustments.
    - Needs: Efficient planning, quick weight indication, and rapid user story access.
  - Scrum Master & Product Owner:
    - Role: Facilitate faster consensus.
    - Needs: Display of relevant data for varied estimates.
  - Head of the Firm:
    - Concerns: Secure and precise estimation tools.
    - Goal: Avoiding overtime, ensuring project profitability.

### 4.3 Concept of Operations

- Objective:
  - Creation of a Planning Poker tool to aid in estimation.
- Background:
  - Addressing software engineers, product owners, and firm head's challenges.
- Envisioned System:
  - Overview:
    - Web-based application for user story estimates.
  - Features:
    - Criteria-based selection, weight adjustments, detailed views, sharing capabilities.
  - Scope:
    - Excluding creation of new user stories for old projects.

#### 4.4 Operational Environment & Considerations

- Accessibility: Web-based tool, ensuring universal access.
- Support:
  - Comprehensive documentation.
  - Post-deployment support.
  - Dedicated support team for addressing future issues.
- Operational Scenarios:
  - Criteria specification.
  - Weight editing.
  - Quick view.
  - Sharing functionalities.
  - Performance considerations with large databases.
- Impact Considerations:
  - Environmental: Minimal, with server resource consumption being a concern.
  - Organizational: Aiming for efficiency, work-life balance, and improved estimation accuracy.
- Risks:
  - Data security from EffortLogger V2.0.
  - Accuracy dependent on user-input weights.
  - Potential performance issues with large databases.

## 5. Appendix A: Credit Sheet

Team Member Name	Contributions
Krishnaprasad Palamattam Aji	Helped write the Customer Requirements section. Helped write the Concept of Operations section.
Malin Tan	Helped write the Customer Requirements section. Helped write the Concept of Operations section.
Varun Menon	Helped with the ideas for planning poker Helped write the Executive summary section Helped write the Conclusion part