CSE 360 Project Report Number 2

Team Tu37

Team Member Names:

1. Alma Babbitt
2. Ishan Yelnoorkar
3. Karryl Dumalag
4. Trevor Huss
5. Zachary Litwin

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1. Executive Summary

A data-driven company is a successful company. Proper business software is paramount to the unification of its developers and supervisors. The current system used to monitor development progress and defect detection is no longer suited for the ever-growing size of the company. A new system of systems is proposed to improve the quality and functionality of the agile development process as a whole. This new application will spearhead the issue of increasing team size while also holding information security and confidentiality of the utmost importance. The new system will lead to an increase in developer productivity and significantly fewer errors. Migrating from the traditional Scrum methodology to an enterprise-scaled agile development process will take some time and resources but will result in a greater outcome in performance. Our team understands the factors of risk at hand and will take that into account when completing this task. This new system will not only present a large change in fluidity but will also provide the flexibility to seamlessly implement new updates in the future.

Some of the new features of this improvement will include the following:

- A new, aesthetically pleasing look and feel.
- Efficient new ways to set plans and log time spent on projects.
- Flexibility to hire a larger number of developers and keep concurrent members updated.
- The ability to utilize EffortLogger information to provide insight into planning poker sessions
- Greater security of user data.
- Unification of cross-functional teams
- Better understanding of defects and why they occur.
- Adaptability and concurrency of software
- Compatibility with older versions of EffortLogger

Future problems and prospects will need to be addressed using this new system if a proper and quality result is to be achieved. The increasing complexity of problems in modern times calls for a streamlined and well-oiled team to accomplish them. Data drives the users, workers, and managers to push each other to succeed at the current task. The potential for improvement is limitless.

2. Customer Problem

The customer has a system called EffortLogger. It is a set of tools that allow the customer to track necessary project progress and do accounting effectively. However, since the creation of the system 20 years ago, the firm has been smaller, and the business requirements have grown significantly. The previous solution was an Excel-based solution created in Visual Basic that provided a set of Excel tabs that gave the appearance of an application interface. While the customer's leadership team is content with the current solution, a newer system is imminent to accommodate the changes in the business.

During the interview, we identified three stakeholders that contribute to the success of this project and the product. The three primary stakeholders are the customer, the user, and the supervisor. The customer dictates the needs of the firm and the vision for the newer system, while simultaneously the users dictate the efficiency of the product. Since the users are primarily dealing with the system to report performance data, they dictate what is required from the system. Finally, the supervisors are responsible for the firm's success, for which they dictate the tools required for them to efficiently and effectively supervise performance data.

Customer Problem

1. Employee privacy: The customer holds employee privacy as the highest priority. However, added pressures have expected the customer to ask employees to provide details about productivity rates, defect rates, and other relevant data to resize the firm and reduce contingencies. Employees are concerned about improper use of personal performance data and hence prefer the Excel-based Effort Logger because it allows them better control over their data. However, the older system prevents the customer from getting automated performance data and synchronous cross-functional team projects and prevents the customer from maintaining the anonymity of their employees.
2. Confidential information security: The leadership team is concerned about hackers accessing confidential information, including plans, schedules, budgets, and specifications. Therefore, security is of utmost importance. While planning and formulating project plans, timetables, and details, those who are involved in the management and formulation need to have a deep understanding of security risks and how to avoid them. Moreover, they also need to be adept at responding to security threats and the corresponding risk avoidance while retaining maintainability and integrity across all products.
3. Enterprise-scale support for agile and quality The customer has increased its solution output by a factor of 20 since the Excel-based EffortLogger was used. The upkeep has become larger, causing the customer to create a QA (quality assurance) engineering organization. Moreover, the previous system lacks the architectural and design support to enable future efforts to improve planning and managing tasks. The customer wants to move from the traditional scrum to a customized process based on enterprise-scale agile. Traditional scrum prevents the customer from dealing with size, complexity, and quality assurance.

User problems

The users, in this case, are the customer's employees. Users are responsible for logging their efforts. After an interview, here is a summary of a user's problem while using EffortLogger.

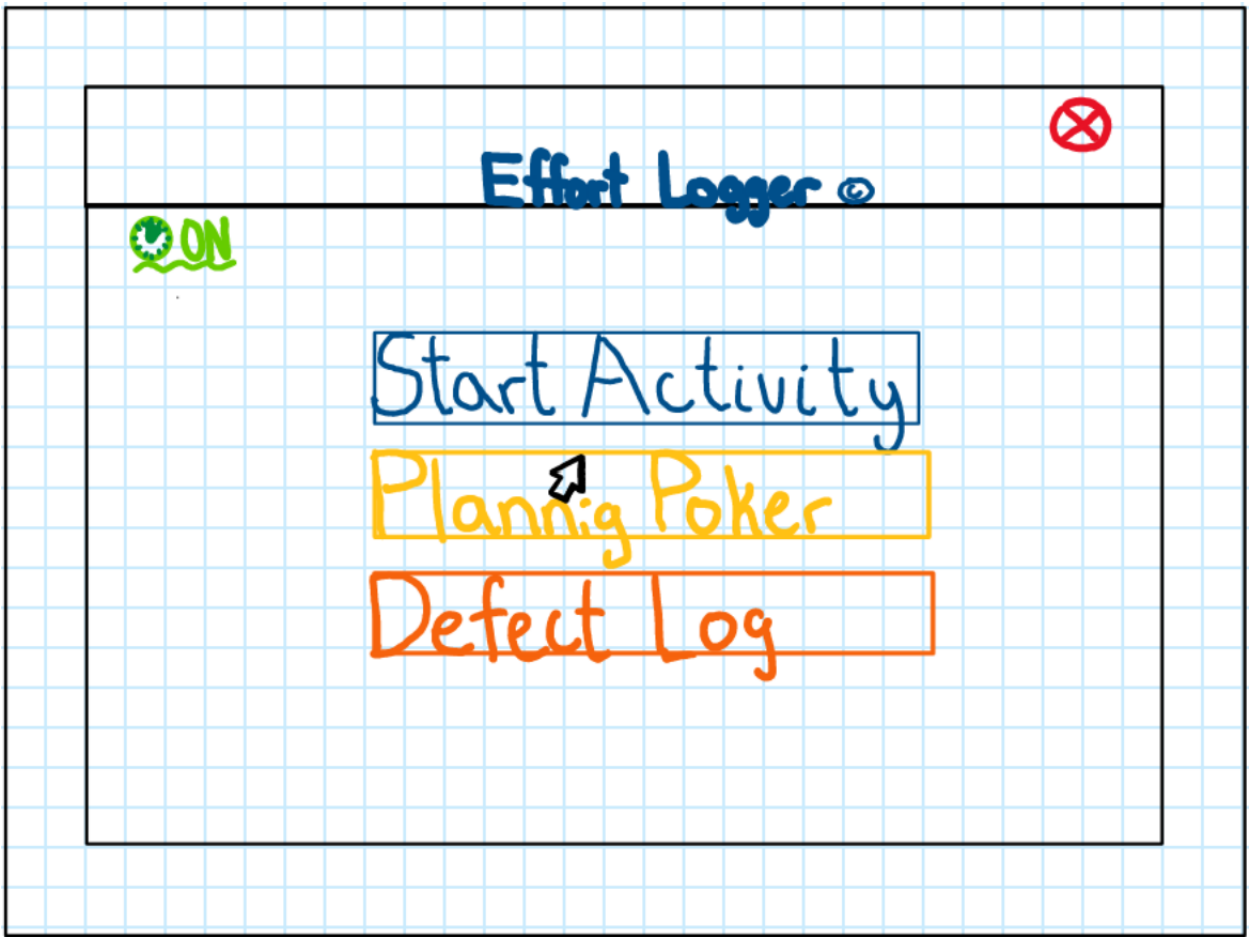
1. Planning poker sessions tend to be long because team members will often spend time accessing personal repositories for data related to user stories. The previous system did not allow for criteria-specific planning of poker sessions, or it became tedious to put up historical data relevant to specific criteria.
2. The older system has a slower way of assigning weight to passing items during the initial screening. This reduces the ability to detect the significance of story points during the planning process.
3. The Excel-based effort logger does not support planning poker; therefore, some estimates significantly deviate from the team's consensus. It lacks the ability for a "quick look," which would allow the employees to look at the contribution of each item.
4. The user also expressed that the old system is not very aesthetically pleasing and could use the ability to generate stylized poker cards with the ability to share them.

Supervisor problems

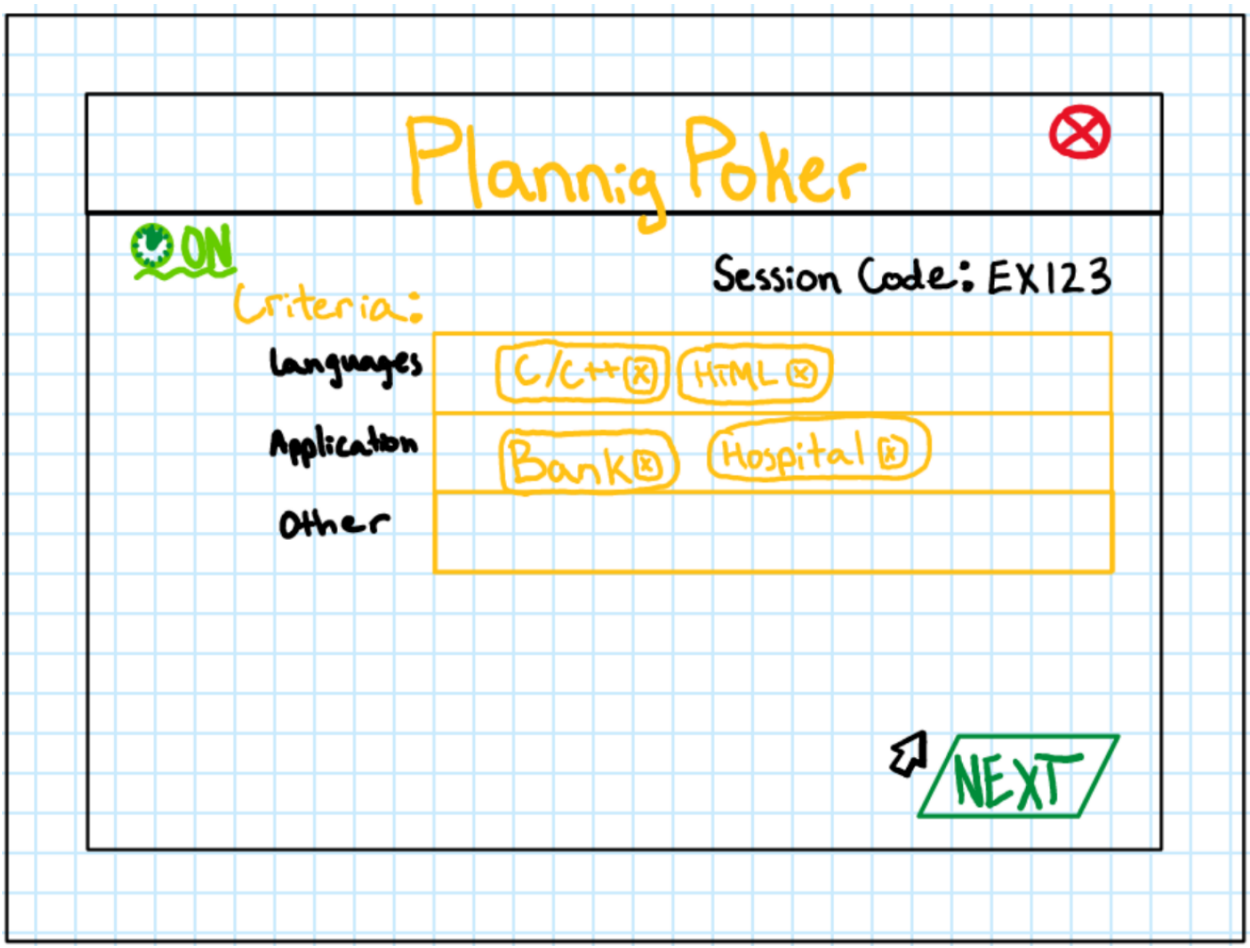
1. The firm works towards effort predictability and defect avoidance, which require anonymity; however, the previous system could not anonymize employee-identifying information.

3. Storyboard

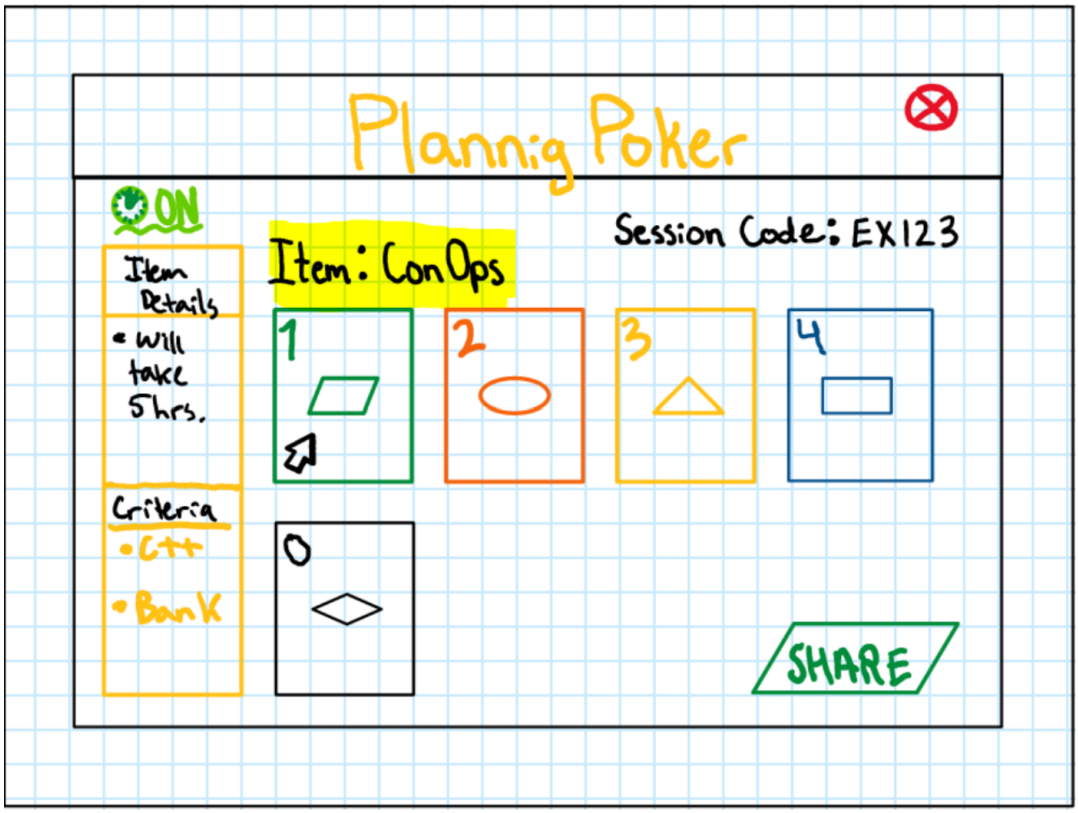
3.1. Planning Poker



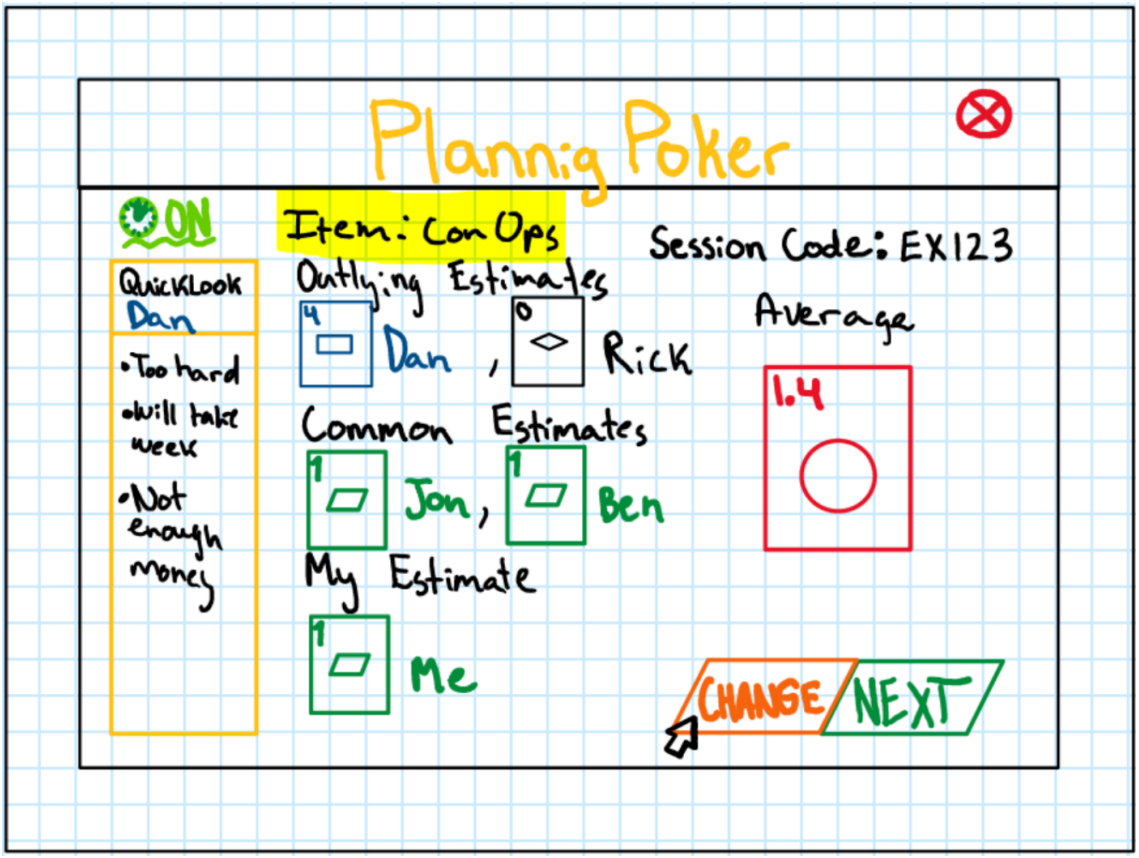
- **Description**: Starting Screen from which each employee lands on at the opening of the application
    - This information on the starting screen gives the user multiple options to continue to different functionalities of the application.
        - Clock at top left can be triggered on when any of the buttons, start activity, planning poker, or defect log
        - Planning Poker Button redirects to planning poker with a team
        - Start Activity redirects to individual log of activity for project
        - Defect Log redirects to individual log of defects for project



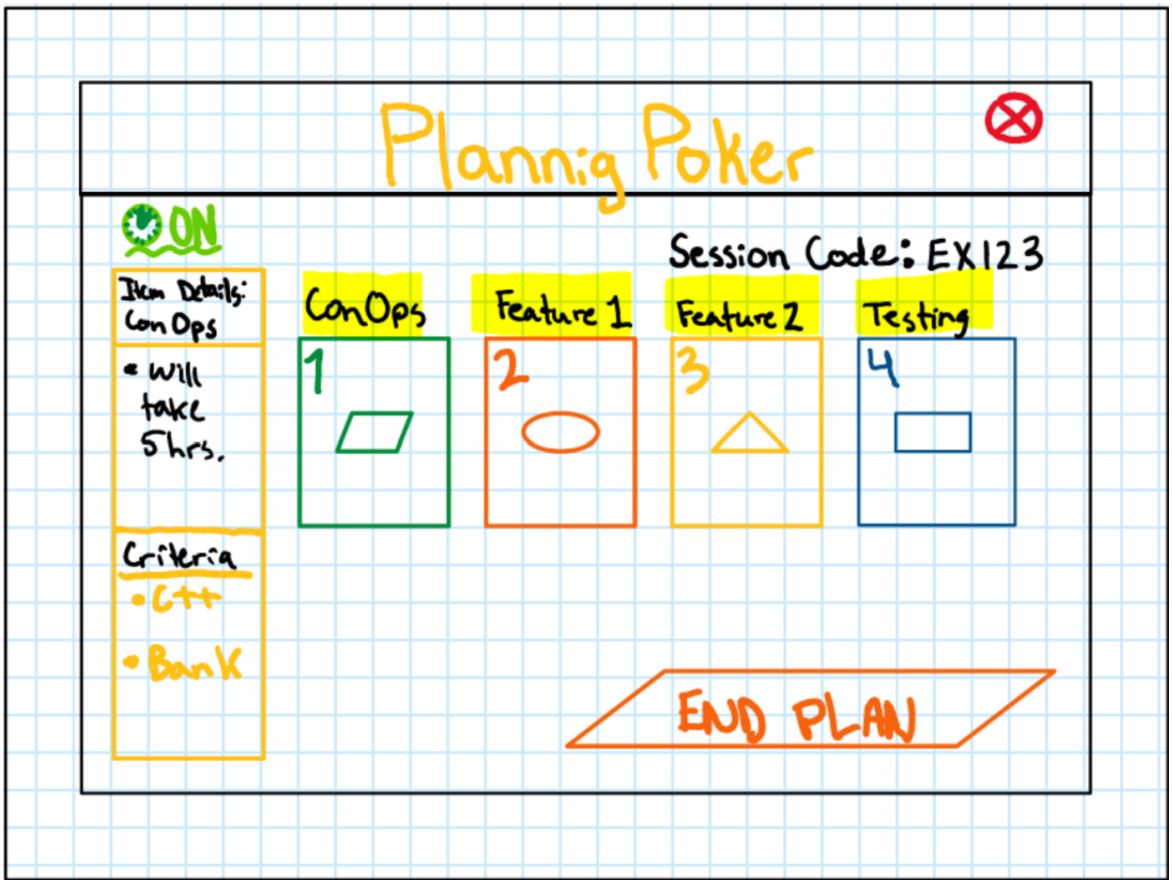
- **Description:** Opening page of Planning Poker first displays multiple options for criteria in a project. A team can in real time connect to the planning session
    - Session code at the top right
        - This code is how teams connect to discuss items on the same project
    - Criteria section
        - This is a menu of criteria the user can select to determine things already known about the project. This information is winnowed to other sections of the of planning poker
    - Next Button
        - Goes onto the next section of the planning



- **Description:** User plays planning poker by selecting different cards with different weights for an item or feature in a project. Users must write down reasoning and details about items. Know criteria will be displayed from all users in team group
    - Item Details/Criteria section
        - Item Details is a textbox user writes in. This information is saved for that user
        - Criteria is a list of known things about the project
    - Poker Cards
        - Clickable cards with weights for the item are displayed
        - The weights of the item are saved for that specific user.
    - Share Button
        - Once card is selected and item details filled, user can share their estimate

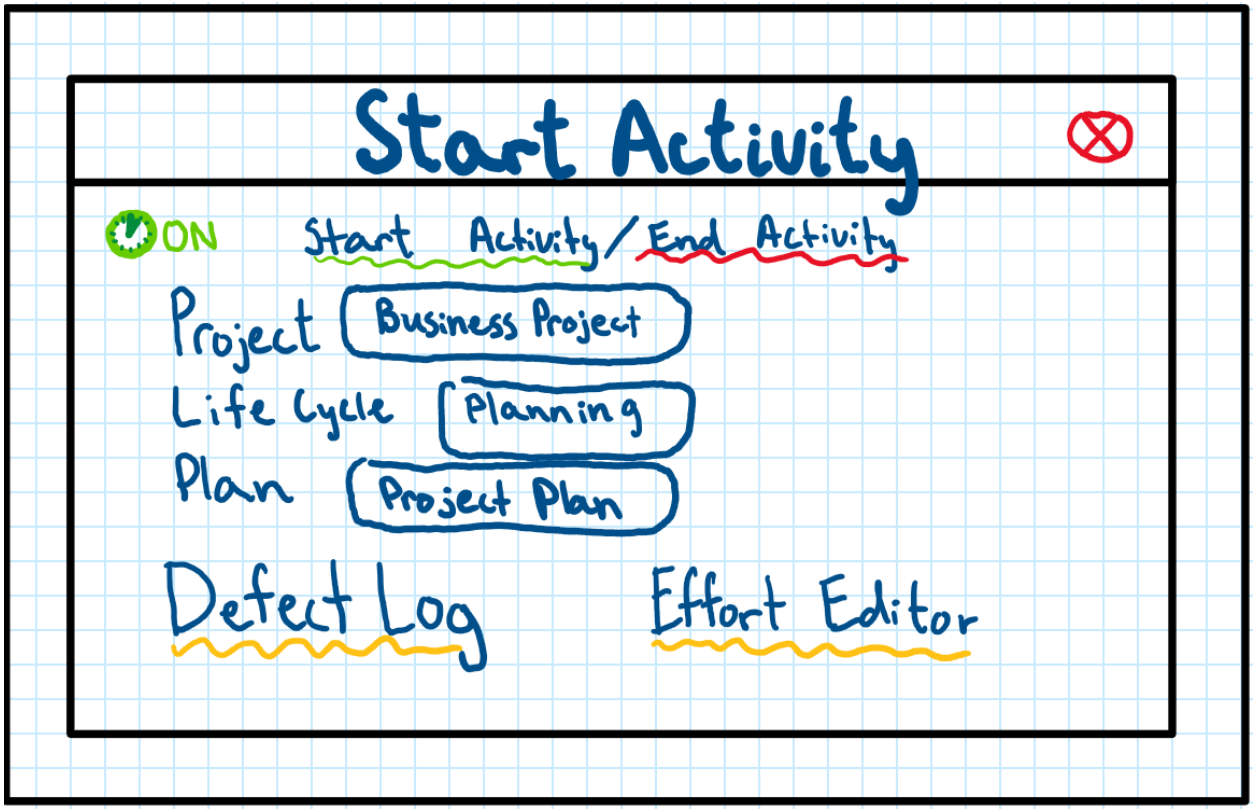


- **Description:** Only when every user in a team group are done with their answers, all team members' cards are displayed under Outlying Estimates, Common Estimates, and My Estimate.
    - QuickLook
        - This text box displays team members reasoning for their weighting once a team members card is selected
    - Team Cards
        - Team members weighting are displayed under appropriate section and once selected display information on the QuickLook text box.
    - Average Card
        - Displays unique card of team members average weighting
    - Change Button
        - Once members discuss reasoning over third party app like slack or in person, members can change weight to reach unanimity by going back to previous page
    - Next Button
        - Once every unanimity has been reached, all team members can select next to go to the next item and iterate the previous two steps for each item in the project.

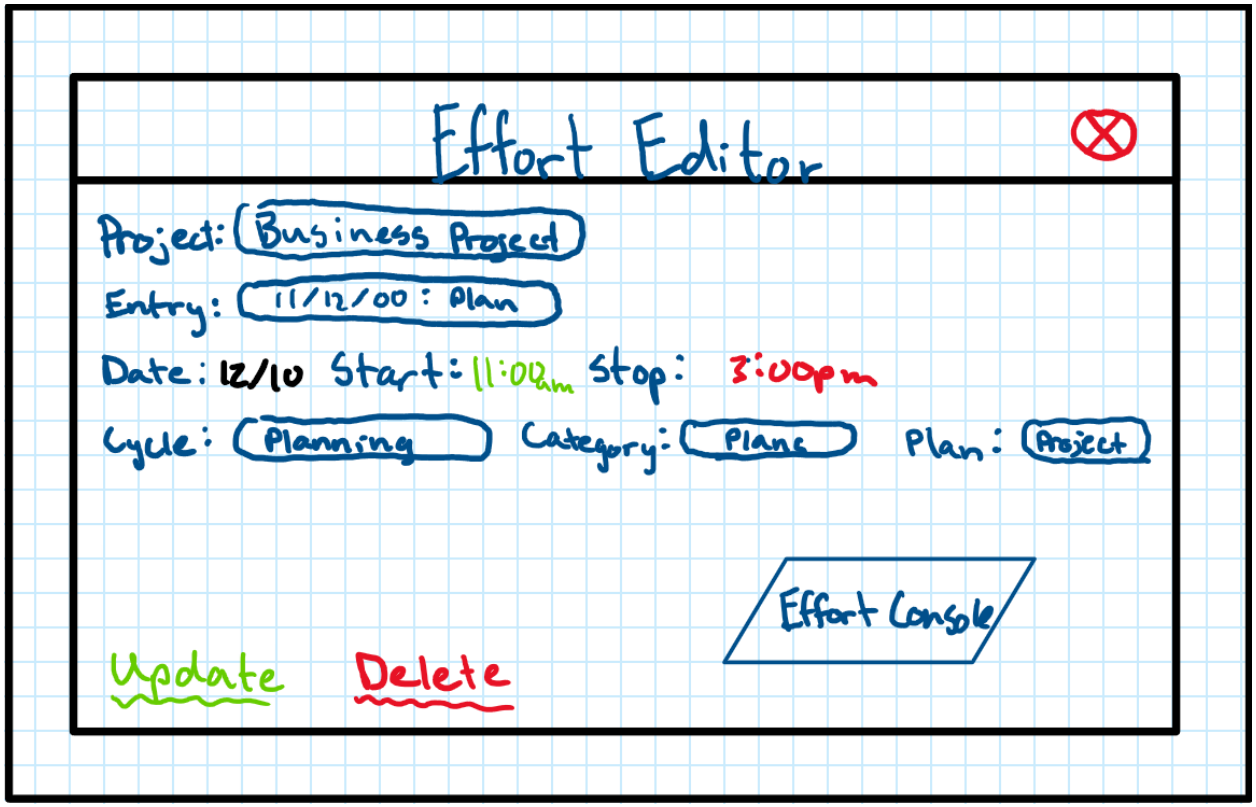


- **Description:** Final page for planning poker displays final information about all items in the project
    - Item Details
        - This box displays item descriptions specified by all team members for each item once item card is selected
        - This information is saved for each feature but not team member specific
    - Criteria
        - Displays known things about the project
    - End Plan Button
        - Exits the planning session and goes back to the main menu of the effort logger.

3.2. Activity Logger

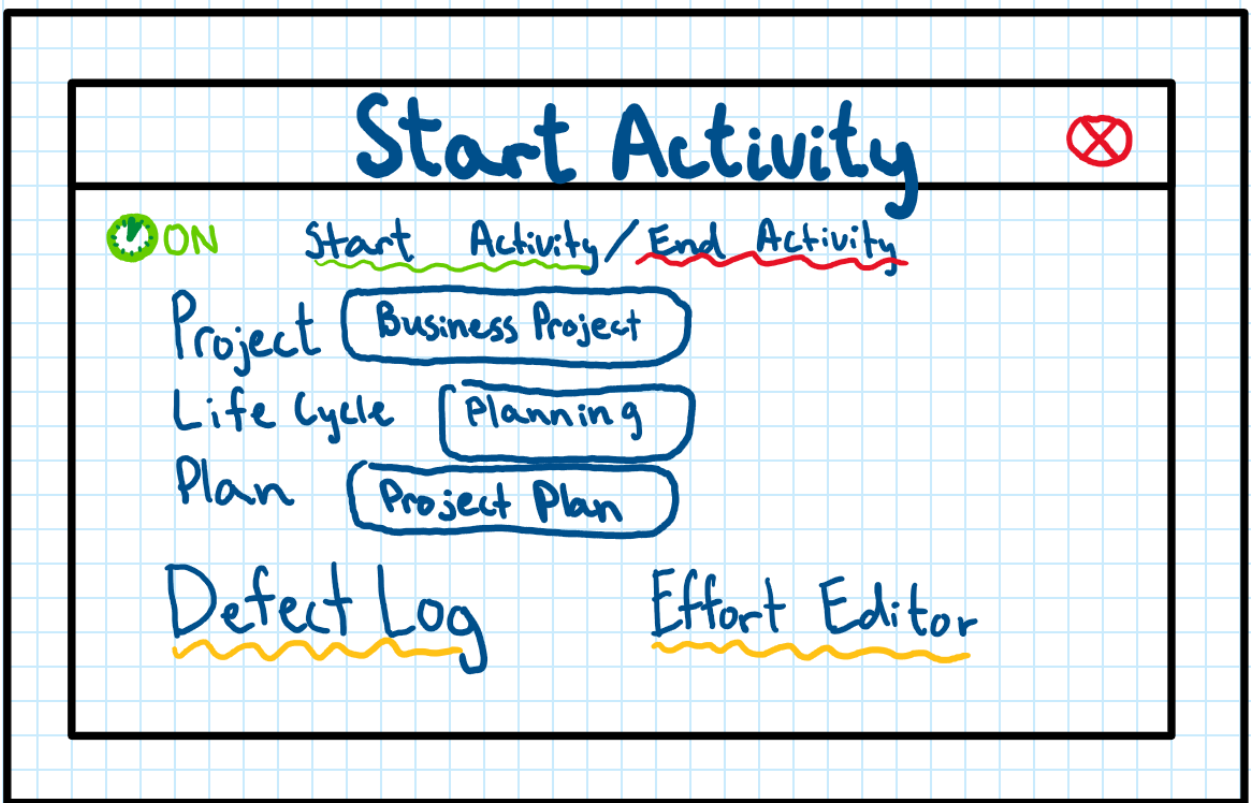


- **Description:** Start Activity is where users can work on specified items of a project.
    - Start/End activity
        - This activates the clock for the specific item
    - Project/Life Cycle/ Plan
        - Specify the project, life cycle of item, and item that user will be working on
    - Defect Log/ Effort Editor
        - Redirect user different part of application



- **Description:** Effort Editor allows user to edit different aspects of the activity they are working on. Different aspects may be added depending on system requirements.
    - Project/Entry/Date/Start/Stop/Cycle/Category/Plan
        - Edit specific attributes of the activity entry the user wants to edit
    - Update/Delete
        - Updates the activity selected or delete activity specified
    - Effort Console
        - Go back to Effort Logger menu

3.3. Defect Editor



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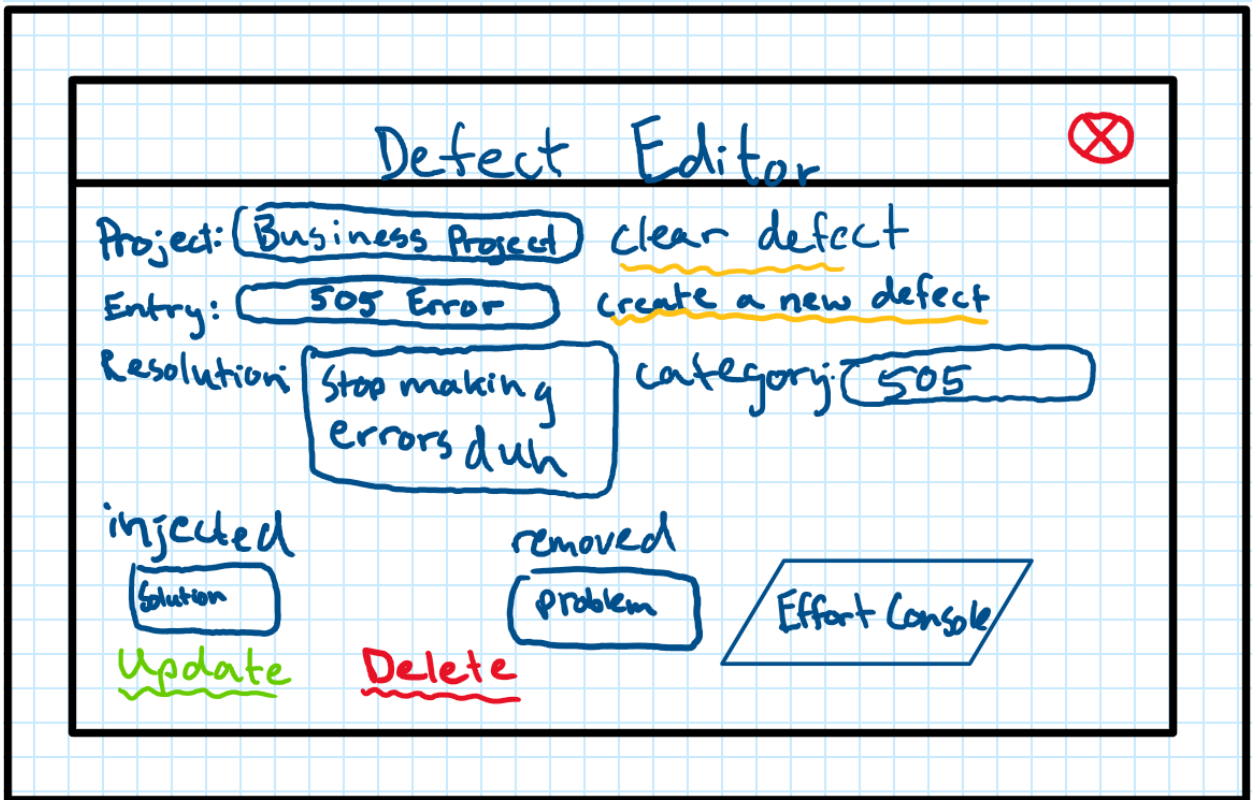


- **Description:** Defect Editor edit and adds defects come across during the users activity logs
    - Project/Entry
        - Specify specific entry to be edited or created in a project
    - Resolution Text Box
        - Write possible solutions to defect
    - Category
        - Type of error is selected or edited
    - Injecte/Removed
        - Shows where the error encountered and where the solution will be encountered
    - Update/Delete
        - Update error log
    - Effort Console
        - Redirect to effort logger menu

4. Concept of Operations

4.1 Stakeholders' Needs and Requirements

This section outlines the key requirements and needs derived from various stakeholders who have been interviewed. These include the customer, users, and supervisors.

4.1.1 Customer’s needs and requirements

- The customer has a growing firm that requires an enhanced version of an existing solution they use to log employee productivity rates, defect rates, and other relevant information.
- The current solution prevents the customer from collecting employee performance data without collecting identifying information or without tediously anonymizing performance data.

4.1.2 User needs and requirements

- The user requires data-driven effort estimation, which will lead to reduced overtime, stress, and missed personal commitments.
- The user requires personal data privacy through anonymity.
- The Excel-based EffortLogger does not support planning poker; this disturbs workflow and reduces efficiency. The user requires a "quick look" to allow the user to look at the contribution of each item.

4.1.3 Supervisor needs and requirements

- The supervisors need a system that promotes anonymity by removing employee-identifying information while simultaneously being able to look at the contributions of the developer, engineer, and supervisor that have contributed toward a story point.

4.2 Effort Logger System Description

This section defines the current capabilities and features of the EffortLogger software and proposes additional features that fit the needs and requirements of the above section.

4.2.1 System Overview

EffortLogger was designed as a way to capture effort and defect information for up to ten people over the course of a week. The projects, life cycles, deliverable types, and defect types are user-defined and can be configured anytime. Then they are used to organize what the programmers are doing with their time.

4.2.2 Functional Elements

- Screens
    - Acts as a canvas to place other elements on.
    - Created by the EffortLogger developer and not configurable by the user.
    - The program shows one screen at a time.
- Labels:
    - Pieces of text were placed on the screen.
    - Gives context to the other elements.
- Buttons:
    - Do some action when clicked on.
- Dropdown menus:
    - Allows the user to choose between some defined options.
    - Used on the effort console to pick a project.
    - Options can be customized on the Definitions screen.
- Textboxes:
    - Creates a place for the user to enter information.
    - Used in the defect screen so the user can give a detailed description of the defect.
- Excel Grid:
    - Used in the Logs and Definitions screens

4.2.3 System Interfaces

The interface of EffortLogger consists of five different screens:

- The Effort console, which has:
    - A clock to track the time spent on activities.
    - A collection of drop-down menus to specify information about the activity currently being worked on
- The Effort Log Editor has
    - A menu to select the project and activity that needs to be edited.
    - Buttons to update, split, and delete activities
    - The split button splits the activity time in half and duplicates all other information.
    - Text boxes to change the date and time an activity has been done
- The defect console consists of:
    - A project and defect selection menu.
    - Textboxes to name and define information about a found defect.
    - A menu to give when the defect was found and when it was fixed.
    - Buttons to update and remove defects.
- The Logs Screen gives a place to view all logs, defects, and activities for all projects.
    - Logs are shown in a large spreadsheet.
    - Each project is allocated a thousand rows.
    - All information about each activity and defect is clearly defined in a series of columns and is the same as what is shown on the console screens.
- The Definitions Screen:
    - Is where the user customizes the projects, life cycles, effort categories, plans, deliverables, and other items to their needs.
    - Definitions are organized in a collection of charts.

    - The charts are placed on a spreadsheet.
    - Customization is done by changing the values in the chart.

4.2.4 Mode of Operations

There are three major ways that EffortLogger is used.

- The general user will only need to log their activities and defects. When they start working on an activity, they open the effort console and click the "Start An Activity" button, then use the drop-down menus to pick the project, life cycle step, and effort category. The defect log follows a similar process.
- A manager will have to track a project's progress by going to the Logs screen and looking through the activity and defect logs.
- A project manager will have to use the Definitions Screen to define plans, deliverables, life cycle steps, and interruptions. As well as to create new projects and define their life cycles.

3.2.5 Proposed Capabilities

- Recreate the current program with all of its functions and features in the Java programming language. This will provide a larger and more stable code base to build upon and an easier expansion path to create new features.
- Devise a system that allows creating and managing multiple scrum teams for enterprise agile development support.
- Allow the manager of the teams to view activity and defect information about the team without the individual's information present so that coordinating and tracking the progress of multiple teams is possible while still allowing the individual user privacy.
- Add additional data for each activity and deliverable that assigns it a weight value that corresponds to the various time cards commonly used in planning poker.
- Use JavaFX to create a more navigable and pleasing user interface that will support the additional features.

4.3 Environmental Considerations

4.3.1 Physical Environment

- Ensure that EffortLogger is capable (if needed) of interacting with other existing systems or external hardware components.
- Guarantee transportation capabilities and security if software and its data are ever to be stored on a physical drive, i.e., physical shocks and vibrations during transit.
- The system should be designed to handle off-nominal conditions as much as possible.
    - Ensure that there are existing mechanisms and functions within the system to help it recover from external failures and errors such as power outages, hardware failures, network failures, security breaches, data corruption, and human error.

4.3.2 Support Environment

- Determine how maintenance is going to be carried out, i.e., scheduling, which sections to monitor, etc.
- Define what the future procedures will be regarding changing the system configuration, system updates, and data uploads to maintain security and minimize system operation disruptions.
- Consider and plan ahead to address security vulnerabilities from system updates and how to apply patches in a timely manner to maintain confidentiality and data integrity.
- Ensure that users of the system are trained and make ongoing user support available via user manuals, helpdesk, etc.
- Allow proactive maintenance by implementing both manual and automated performance management to continuously assess system performance and health.
- Plan for backup and recovery procedures to safeguard data and systems in case of off-nominal conditions.

4.4 Risks and Potential Issues

4.4.1 Project risks

Project schedule

- Essentially, that team understands the available resources and the allocation of resources prior to the start of the project.
- Make sure to allocate enough time to completely understand the customer's vision and requirements. Set aside 1-2 days to clear up confusion and bring up needed clarifications.
- Allocate time for risk assessment, security audits, and implementing security practices. Robust security measures are essential given the nature of the project requirements and design.
- Include time for training the development team on the transitioned custom agile process.
- Plan the balance between implementing essential features and crucial privacy concerns in the product.
- It is essential to provide sufficient time to allow the quality assurance team to apply rigorous testing and quality assurance activities.

Staffing support

- Ensure the project team has members with adequate security expertise to address confidential information and security concerns effectively.
- The privacy compliance team needed to emphasize and keep up with data privacy regulations and compliance during and after production.
- The quality assurance team needed to professionally test the quality of the system.
- Members with architectural and design expertise to address the lack of accessibility and design in the previous system.
- Members with design expertise need to create a scalable and maintainable solution for the long term.
- Agile coaches to aid in the transition to a customized agile process

Implementation approach

- Transition to a customized agile process:
    - We need to train employees in the new agile process. Provide available coach support, user guides, and workshop training.
    - It is essential that the transition be gradual for smoother operations.
    - All changes are documented and customized for the team's needs.
- Security concerns:
    - Secure the development team's safe coding practices, data encryption, access controls, and continuous monitoring.
    - Carefully plan to allow customer control over data while still enabling automated, secure data collection.
- Scalability concerns:
    - Ensure ease of maintenance for future updates. Provide a clear upgrade path after production.
    - Plan to use flexible and versatile technologies and modular design.
- Data migration between the old Excel-based model and the new EffortLogger system
- Quality assurance must ensure automated testing, continuous integration, and regular code reviews throughout the development process.

5. Received Requirements

5.1 EffortLogger Customer Need V2-0 Document V1-1

The clients that hired our team to develop EffortLogger V2.0 have expressed some concerns and requirements for the EffortLogger update. We have received input from the customer, supervisors/management, and employees. Below are the user stories depicting the stakeholders' requirements for EffortLogger V2.0

5.1.1. **Title:** Ensuring Employee Privacy and Anonymity

Story: As a member of the development team, I want to ensure that the EffortLogger V2.0 solution provides robust mechanisms for maintaining employee privacy and anonymity so that we can collect essential performance data without compromising personal information.

Acceptance Criteria:

1. The system must allow employees to choose what performance data is shared with their supervisors or managers.
2. Employees should have the option to remain anonymous while providing performance data.
3. The system should support professional role levels (e.g., programmer, software engineer) for categorizing and reporting performance data.
4. Data collection methods should be automated and secure to prevent unauthorized access to personal information.
5. The system should have a clear audit trail to track who accesses performance data and for what purposes.
6. Compliance with data privacy regulations (e.g., GDPR, CCPA) must be ensured in the design and implementation.
7. Employees should have full control over their personal information and the ability to revoke access at any time.

5.1.2. **Title:** Strengthening Data Security and Protection

Story: As a member of the leadership team, I want to ensure that EffortLogger V2.0 provides robust security measures to protect our confidential information from potential data breaches and unauthorized access to safeguard our competitive advantage.

Acceptance Criteria:

1. The system must implement robust encryption mechanisms for all data related to project plans, schedules, budgets, specifications, and technical details.
2. Access to confidential information must be role-based, with strict access controls and authentication requirements.
3. Real-time threat monitoring and detection mechanisms should be in place to respond to new threats promptly.

4. All critical work products, including Customer Need Assessments, Concepts of Operations, Storyboards, User Stories, Use Cases, and architectural artifacts, should be protected with encryption and access controls.
5. The system should maintain design integrity and traceability of all work products, ensuring they are not tampered with during the development lifecycle.
6. Regular security assessments and penetration testing should be conducted to identify vulnerabilities and address them proactively.
7. Compliance with industry standards for information security (e.g., ISO/IEC 27001) and legal requirements should be maintained.
8. In the event of a security breach, the system should have a response plan in place to minimize damage and ensure rapid recovery.

These user stories address the key requirements outlined in the document, focusing on employee privacy and confidentiality concerns. They provide a clear description of the desired functionality and criteria for success.

5.1 EffortLogger Supervisor Input 2023-08-11

5.2.1. **Title:** Protecting Employee Privacy while Maintaining Transparency

Story: As a member of the process improvement team, I want to ensure that EffortLogger V2.0 maintains a balance between individual privacy and transparency in data reporting so that we can continue data-driven decision-making and improvement efforts effectively.

Acceptance Criteria:

1. The system must anonymize all individual effort and defect reports before they are accessed by any team, project, program, or organizational analysis tool.
2. Identifying information about individuals (e.g., developer 1, engineer 3, supervisor 2) should be included in individual effort and defect reports for targeted improvement efforts and knowledge sharing.
3. When there are insufficient reports to ensure anonymity, access to the source data must not be provided, and summary data should not reveal individual identities.
4. The process flow of data from individuals to analysis tools must be transparent, and a clear explanation of how privacy is maintained should be provided in user-friendly terms.
5. An audit trail should be maintained to track access to individual-identifying information, ensuring accountability and compliance with privacy standards.

5.2.2. **Title:** Facilitating Targeted Improvement Efforts

Story: As a first-level supervisor, I want to ensure that EffortLogger V2.0 provides the capability to direct improvement efforts effectively by including identifying information in individual effort and defect reports so that we can enhance predictability and gather best-practice insights from high-performing groups.

Acceptance Criteria:

1. The system should allow the inclusion of identifying information about individuals (e.g., developer 1, engineer 3, supervisor 2) in individual effort and defect reports.
2. Reports should be accessible to authorized users and improvement teams to analyze performance data.
3. Effective improvement efforts should be directed toward groups where predictability improvement is needed based on the analysis of individual-identifying data.
4. High-performing groups should be recognized, and their best practices should be documented for knowledge sharing.
5. The system should support data-driven decision-making by providing tools for analyzing and visualizing performance data.

These user stories address the requirements outlined in the document related to maintaining individual privacy while supporting effective improvement initiatives and data-driven decision-making. They provide clear descriptions of the desired functionality and criteria for success.

5.3 EffortLogger User Input 2023-08-11

5.3.1 Title: Improving Planning Poker Sessions

Story: As a member of our scrum team, I want to ensure that EffortLogger V2.0 improves the poker planning sessions so that our scrum team can effectively and quickly specify the criteria of the project and the weights for each item.

Acceptance Criteria:

1. The system should allow users to input project criteria such as programming language and application domain before a Planning Poker session.
2. The tool should filter historical data based on the specified project criteria, presenting only relevant items for estimation.
3. During the Planning Poker session, the system should enable users to quickly assign weights (e.g., 0 through 4) to each item, indicating its relevance to the current user story.
4. The application should have a stylized look and should share the team's poker card weight once it is time to share.
5. A weighted average calculation should be performed automatically, reflecting the contribution of each item to the story points.
6. Users should be able to adjust weights during the session as discussions progress.
7. The two-step process should significantly reduce the time spent on accessing personal repositories and manual calculations, making Planning Poker more efficient.

These user stories address Kim's suggestions for functional improvements to EffortLogger V2.0, focusing on making Planning Poker sessions more efficient, transparent, and collaborative. They provide clear descriptions of the desired functionality and criteria for success.

6. Derived Requirements

6.1. Ensuring Employee Privacy and Anonymity

A comprehensive approach to safeguarding employees' personal data. This includes providing user-friendly profile management features, strict access controls, and secure data protocols.

6.1.1. User Profile Management

1. When user data sharing is updated for supervisor view, delete all stored data and history of data the employee no longer wishes to share
2. Options for employees to revoke access to their data at any time and implement a confirmation process to ensure employees understand the implications of revoking access

6.1.2. Secure Data Collection

1. Access controls and authentication methods are in place to restrict authorized access to personal information
2. Use secure protocols for data transfer

6.1.3. Audit Trail

1. Include details such as who accessed the data, when it was accessed, and for what purpose, and provide the authorized admin with the ability to review the audit trail
2. Implement alerts for suspicious or unauthorized access attempts

6.1.4. Compliance with Data Privacy Regulation

1. Conduct a thorough assessment of data privacy regulation (e.g., GDPR, CCPA) to identify specific compliance requirements for company security
2. Integrate compliance checks into the system’s data handling processes and document compliance measures for auditing purposes
3. Regularly update the system to stay in compliance with evolving regulations

6.2. Strengthening Data Security and Protection

A proactive approach describing comprehensive measures to safeguarding data, preventing security breaches, and breach response plan procedures.

6.2.1. Data Encryption and Protection of Products

1. Classify data based on sensitivity (e.g., confidential, sensitive, public)
2. Strong encryption algorithms for different types of data for process optimization
3. Implement encryption for both data at rest (e.g., database encryption), and data in transmission using protocols like HTTPS

4. Robust key management system to securely generate, store, and rotate encryption keys
5. Ensure only authorized personnel have access to decryption keys

6.2.2. Threat Monitoring and Security Assessments

1. Conduct regular security assessments and penetration testing to identify vulnerabilities and address them proactively
2. Configure alerts or suspicious activities and potential security threats
3. Employ intrusion detection systems (IDS) and intrusion prevention systems (IPS) for real-time monitoring of network traffic and system activities

6.2.3. Compliance with Industry Standards

1. Ensure compliance with industry standards for information security, such as ISO/IEC 27001, and legal requirements.
2. Demonstrates the thoroughness and commitment to maintaining a high level of security

6.2.4. Security Breach Response Plan

1. Develop a plan for responding to security breaches both internally through the software and externally within the company practices.
2. Minimize damage and ensure a swift recovery in case of a breach
3. Create an incident response team with clearly defined roles and responsibilities and establish a communication plan for notifying affected parties
4. Define procedures for containing security breaches and rapidly recovering affected systems and conduct post-incident analysis to identify root causes and improve security measures

6.3. Protecting Employee Privacy while Maintaining Transparency

This requirement aims to safeguard employee privacy within the system while ensuring transparency in data handling and access.

6.3.1. Data Anonymization

1. Implement automatic data masking algorithms when users enter their credentials and encrypt logs for secure data storage
2. Require restricted access controls to limit who can access original individual effort and defect reports
3. Ensures transparency and allows users to make informed privacy choices for both present and future best practices.

6.3.2. Transparent Data Flow

1. Provide a user-friendly interface for clear understanding and privacy explanations such as tooltips and notification pop-ups that explain privacy mechanisms

2. Allow users to provide explicit consent during various data-sharing points to track their work throughout the process.
3. Ensures transparency and allows users to make informed privacy choices.

6.3.3. Audit Trail for Access

1. Within restricted pages, provide access controls for viewing the audit trail for the users with timestamped system alerts and notifications every time a new log is published
2. Create automized compliance reports that summarize audit trail data to facilitate compliance audits and accountability reviews
3. Audit trail data is stored securely for an extended period of time to meet legal and regulatory requirements
4. Enhances accountability, transparency, and supports compliance audits.

6.4. Facilitating Targeted Improvement Efforts

Identifying individual information involves enabling authorized users and improvement teams to access and analyze performance data through password-protected data pages categorized into their respective teams. This requirement aims to facilitate a data-driven approach to improve initiatives and empower supervisors with the necessary tools for informed decision-making.

6.4.1. Access to Reports

1. Ensure that authorized users and improvement teams can access and analyze performance data given a password-required data page for each individual, categorized into their working teams
2. Supports data-driven improvement efforts and decision-making.

6.4.2. Data-Driven Decision-Making Tools

1. Provide a page that displays user-accessible tools for analyzing and visualizing performance data to support the supervisor's data-driven decision-making.
2. Enables supervisors to make informed decisions based on data.

6.5. Improving Planning Poker Sessions

This updated feature enhances the process by allowing users to input project criteria, assign weights and adjust them if needed mid-process, customize team representation, and generate comprehensive session documentation.

6.5.1. Project Criteria Input

1. Before allowing access to begin the session, users would be required to input project criteria (programming language, application domain, etc.) before a Planning Poker session.

6.5.2. Efficient Weight Assignment

1. Users will be able to quickly assign weights to each item during the Planning Poker session by assigning the weight attribute to the program class through text input with automatic weighted average calculations later on.

6.5.3. Stylized Look and Team Card Sharing

1. Allow teams to choose or create unique tags or avatars to represent a sense of collaboration
2. Prevent two users from selecting the same display card to ensure clear communications

6.5.4. Adjustable Weights

1. Adjusting weights will be through simple mechanisms and changes will be shared in real time with other users for consistent understanding
2. Adjustments are reflected in the automatic weighted average calculations

6.5.5. Final documentation

1. Generate a summary report that has all items discussed during the session, but also includes any adjustments made during the session and comments or notes provided by participants
2. Allow export for record-keeping and sharing purposes
3. Provide an option to automatically send the summary report to session participants

7. High-Level System Architecture

1 to 3 pages, single space 12 pt. font: Times or Calibri

7.1. Architectural Overview

Provide a short multi-level outline description of that operational aspect.

7.1.1. User accessible program space

This is the portion of the program that will be interacted with by the end users. Consists of the GUI made in javaFX and controlled pathways to access stored information.

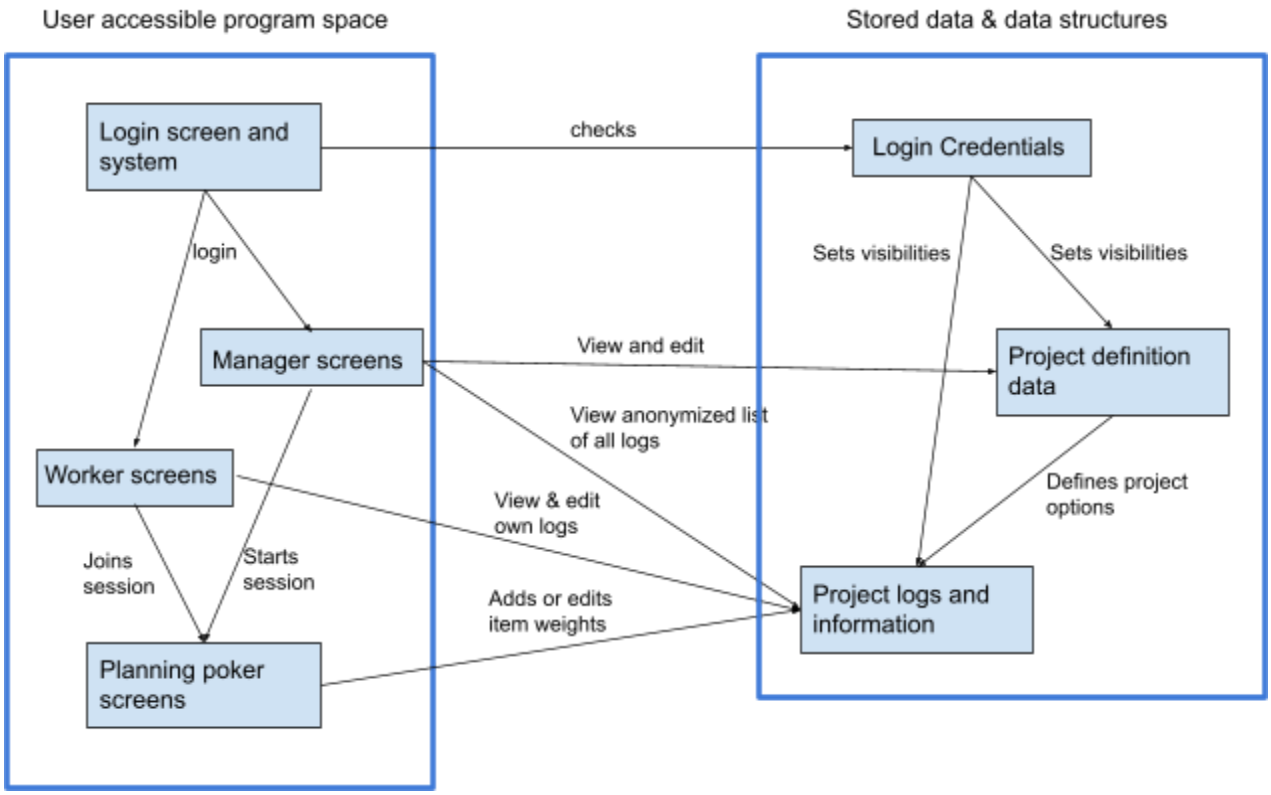
The different screens will offer different options and will change based on who is logged in.

7.1.2. Stored data and data structures

Handles storing login information, project definitions and project logs. All data will be encrypted and access permissions will be changed based on the current logged in user.

Everything in this section of the program will not be directly accessed by the user and instead will be viewed and edited through the different screens of the user interface.

7.2. Draft Architectural Diagram



7.3. Login Screen and system

7.3.1.1. Purpose: The major purpose of the login screen is to control who has access to the program as well as to identify the various users. The screen will have two text boxes, the first for the user's name and the second for their password. This will be checked against the stored login credentials to confirm what data the user can access and modify.

7.3.1.2. Rationale: To allow for data protection there needs to be identity checking that acts as a gateway between the user and the database. This login screen will be that gateway.

7.4. Worker screens

7.4.1.1. Purpose: The user screens will consist of three screens. They are the effort console, effort log editor, and defect console whose purpose is largely unchanged from effortLogger v1. The three screens will allow the user to make, check and edit their own logs but will not have any other worker's logs

7.4.1.2. Rationale: To allow for a smooth transition for workers accustomed to effortlogger v1. Their main interactions with the system are to be changed only as much as needed. The process of starting a stopped activity as well as creating a defect will be mostly unchanged.

7.5. Manager screens

7.5.1.1. Purpose: The manager screens will reuse all of the worker screens with two additional ones. The first will be the anonymized list of all logs for a project and the second will be one to access and modify the project definitions.

7.5.1.2. Rationale: These screens will allow effortlogger v2 to include a virtual representation of the planning poker sessions.

7.6. Planning poker screens

7.6.1.1. Purpose: These screens will be how the scrum team runs their planning poker sessions. They will allow a manager to start a session and the workers to join that session in which the weights of the various deliverables defined in the project definition will be given.

7.6.1.2. Rationale: The manager will be the only one who can start a session and will be in control of it. The workers and manager will be able to vote on the weight of the deliverable. These screens are made to mimic the normal face to face planning poker sessions with card weights being the same and a similar system to handle disagreements.

7.7. Login credentials

7.7.1.1. Purpose: The login credentials will not have a viewable representation and instead is just how the program will store people and their passwords. It will be given a name and a password and will check if that combination of name and password exists in the stored credentials, returning true or false depending.

7.7.1.2. Rationale: The login credentials will be used to authenticate the user before showing that user, data that should be private.

7.8. Project definition data

7.8.1.1. Purpose: The project definition data is what was defined in the definitions page of effortlogger v1. The main difference is now only a project manager will be able to edit that data.

7.8.1.2. Rationale: A worker working on a project shouldn't need to change the deliverables, life cycle steps or other options defining the project so they don;t need the ability to change them. If any issue with them did arise they should no to the project manager.

7.9. Project logs and information

7.9.1.1. Purpose: This is the bulk of the database with each project log having many parameters including one main new one. A log will have all the same info as an effortlogger v1 log but will also include a viewability ID. This ID will be checked against the current logged in user and if it matches the log can be viewed and edited. If a manager is then logged in they can view all logs but won't be able to see the ID.

7.9.1.2. Rationale: The inclusion of the ID will allow the accessibility of the data to be checked before giving the user any data.

8. Conclusion

The new system of systems will implement the enterprise-scale version of agile team development. Added flexibility for expansion and ease of access to critical information will skyrocket team fluidity and morale. The company's developers will be able to easily maintain a steady workflow and will be able to detect and resolve defects much simpler. Information will be secured and safe from any attempts of leakage or exposure. The proposed problems with the current software will be thoroughly solved and the rigidity will be adjusted to conquer future problems as well. Planning poker sessions will see an increase in accuracy and validity which will lead to a stronger meeting as a whole. Emphasis will be placed on user requirements to ensure the improved version of EffortLogger will represent a significant change in the positive direction. Transparency of data while also keeping important information at a high level of security will unify the members of the Agile team while also keeping privacy in mind. Derived factors of risk will be assessed and the product will remain secure in light of these findings.

A much-needed change has been proposed and this new system is expected to fulfill those requirements. Implementation is not expected to be especially difficult, as our team will develop this new software with data transfer from the previous version of EffortLogger in mind. The transparency of information in planning poker sessions and supervision will help recognize when the company is on track or when a different approach needs to be taken. All of these points paint the picture of what the new software is set to accomplish. In conclusion, the switch from the old software will take some time but will be well worth it in the long run for the company.

9. Appendix A: Credit Sheet

Team Member Name	Contributions
Team Member 1 Alma Babbitt	Organized group meetups. Parsed each member's work to do. Storyboard User Requirements Revised final document and submitted it Redid phase 1 to put in phase 2
Team Member 2 Trevor Huss	Revised and changed document to fit new grading criteria Helped organize meetings Document formatting
Team Member 3Karryl Dumalag	Derived Requirements Grammar check and proof reading
Team Member 4 Zachary Litwin	High Level System Architecture
Team Member 5 Ishan Yelnoorkar	Team Norms

11. Appendix B: Current Team Norms

Unsigned Norm Agreement:
https://drive.google.com/file/d/1u-mFyAV-puvFaXHqHHKCrbE5Cu1RqBAJ/view?usp=sharing

Goals

- The team will try to abide by the client's requirements and put forward best efforts to make that a reality

Meeting and communication norms

- Class time will be utilized to gather notes and information regarding software project management processes.
- Class time will be utilized to brainstorm how these ideas could be used in the project
- The team will meet every Friday to perform a scrum, discuss, manage backlog and plan future action
    - The team will meet at Noble Library, per convenience and the meeting will last 2 hours
- Apart from weekly meetings, the team will communicate via discord/text chain, giving minor updates every time, a task is complete
- The team will communicate effectively and swiftly to avoid delays in work
- During holidays and long weekends, work will be allocated per the team member's unavailability for the holiday. Work will be redistributed and overworked individuals will be compensated with fewer workloads for the following week after the holiday

Work norms

- The team will work 5 hours every week to ensure timely delivery of deliverables
- The team will split work according to the necessary skills required for the task to be completed
- In case a member of the team is not getting work done, they will be given a warning first, and then a mail to the TAs will be sent for a repeat offense
- The team will set deadlines based on the urgency and time requirements of a task
- Every week a different member of the team will be allocated to proofread work that has been done so far
- Everyone is allowed to work in their manner as long as progress is made and it does not impede the group's ability to make progress
- All team members are expected to adhere to team norms and meet its expectations

Decision Making

- For a decision to be made, the majority of team members should agree with the agenda

put forward, and simultaneously try and understand and help understand why the other's point of view may or may not work with the task at hand

- Team members will listen actively and take into consideration everyone's point of view, as well as try and resolve disagreements

We, group members of Tu37 have agreed to follow the terms listed above and plan to adhere to them until the culmination of this project. Our listed names below indicate our acceptance of the norms and are used as our digital signature.

Member 1: Alma Babbitt

Member 2: Zachary Litwin

Member 3: Trevor Huss

Member 4: Karryl Dumalag

Member 5: Ishan Yelnoorkar