**C868 – Software Capstone Project Summary**

**Task 2 – Section A**



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| **Capstone Proposal Project Name:** | Project Planner |
| **Student Name:** | Samuel Feese |

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# Business Problem

## Objective

The goal is to make a MAUI application for Android that acts as a daily/sprint-oriented planner with a unique focus on project management. Each project will have its own page with the top goals for the sprint, a daily view, and a fill sprint (two- week) view of the tasks and priorities.

## Customers

The application targets professionals and team leaders needing a way to record and track daily priorities across multiple projects. Standard daily planners do not meet the organizational requirements of teams and individuals that manage multiple projects and are looking for a way to see daily and sprint tasks per project.

## Utility

This app fills a critical need for a streamlined, accessible-anywhere tool to track tasks across multiple projects. Most day planners split days into multiple project goals, this application splits projects into multiple days. It also will allow customers to create sprints and set goals within that sprint.

# Existing Gaps

## Market Gap

Currently, there are few mobile project-focused planners that fit this granular niche. Existing solutions either focus solely on daily task management or offer complex project management tools without a simplified daily view. This app will aid technical leaders in managing time across various teams or projects within an agile sprint framework.

# Methodology

## Approach

Agile SDLC will be employed, featuring iterative development for continuous feedback, adaptability, and enhanced stakeholder involvement. Agile SDLC emphasizes regular, structured feedback loops at every stage of development. Using sprints and retrospectives, the project can ensure that it is following user requirements and minimizing scope-creep. Breaking down the project into feature iteration creates much more manageable pieces of the application to develop. These smaller iterations can go in front of users and stakeholders at more frequent intervals to provide more accurate acceptance and validation.

# Deliverables

## Stories/Backlog

Typically using Agile SDLC there will be many levels of task documentation, including Epics or a Product Backlog, a Sprint Log, and User Stories. Since this project is not at a scale that requires Product or Sprint backlogs, the stories will be organized by features, such as “Ability to add a project” or “Add a daily task to a project.”

## Increment Product

With each story complete, a part of the project will be shippable. It may not be feature but it gives the ability to verify functionality with stakeholders and add testing where required.

## Documentation

After all increments are complete, documentation will be created to assist in the operation and maintenance of the application.

# Implementation

## Phases

There will be five main phases of this project: Conceptualization, Planning, Execution, Monitoring, and Closure. Conceptualization includes defining scope. Interviewing stakeholders and users and evaluating the current market. Planning will be when the epics and stories are created, as well as define resources and timelines. Execution will be the main phase for development and reevaluation. This is where the iterations will most likely end up going into acceptance. Monitoring will be more project management focused, ensuring that we are meeting defined goals and timelines. Closure is the end of the project, when all features are accepted, and documentation gets created to deliver to the user.

## Outcomes

The primary outcome will be a user-friendly mobile application designed for sprint-level project tracking, offering a unique solution for organizing users on a by-project basis. Emphasizing project focused planning, the users will be able to track requirements and goals more easily across multiple projects.

## Post-Implementation

An O&M plan (Operation and Maintenance) will be set up to provide regular updates and technical support. A service level agreement (SLA) will be defined to provide regular software updates, bug fixes and possible new features. O&M also encompasses the management of resources to deploy the application.

# Validation and Verification

## Continuous Integration Testing

Continuous Integration (CI) Testing is a critical practice that ensures every code commit is automatically tested for functionality at each development stage. This approach helps reduce development time for each iteration and insures that every commit to the code functions as intended.

## Code Reviews

Code reviews are an opportunity to both ensure the code that is written is sound, and foster team coherency. The primary goals are to ensure the code is clean, efficient, and aligns with the project’s coding standards and best practices. A benefit of code reviews is it helps share knowledge among developers so knowledge silos stay small and manageable.

## User Acceptance Testing

Possibly the most critical step in validation is User Acceptance Testing (UAT). UAT will verify that the project is delivering what it promised and creates a feedback loop to fix anything that has strayed away from the scope of the project. This works very well in the iterative approach to software development as well since each iteration will have UAT, keeping close communication with the users.

# Environments and Costs

## Programming Environment

The project will be focused around the .NET MAUI architecture that is specially developed for mobile app development. XAML will be used to provide views and interactions with the user, with a C# back end that leverages strong typing to ensure programmer induced bugs are kept at a minimum. SQLite is the database architecture selected for this project as it runs in local file systems on mobile devices and gives a mostly relational database design to keep data organized.

## Costs

The project's costs are primarily limited to development time. This project leverages open-source technology such as SQLite that only require research for implementation. .NET MAUI has a robust and cost-effective library of mobile application tools to ensure the application will work across multiple platforms.

## Human Resources

The only human resource required is one software developer to iterative plan and execute the application.

# Project Timeline

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Phase | Milestone/Task | Deliverable | Description | Dates |
| Structure and Planning | Planning | Requirements | Gathering Customer requirements and acquiring resources | 1/15/2024 – 1/22/2024 |
| Design | Design files | Low fidelity wireframe  High fidelity mockup | Create the UI that relates the look and feel of the project | 1/22/2024 – 1/29/2024 |
| Application Development | Code Creation | MVP planning tool | Create the Project Planner with Daily and Sprint level tasking | 1/29/2024 – 2/26/2024 |
| Testing and Verification | Testing | Testing instructions | Writing Tests and Verifying Acceptance | 2/26/2024 – 3/4/2024 |
| Documentation | Documentation | User Documentation | Writing user based instructions on how to use the application. | 3/4/2024 – 3/8/2024 |