Module 5 - Design Methodology

Brady Chin

Colorado State University Global

CSC501-1: Management for the Computer Science Professional

Dr. Jonathan Vanover

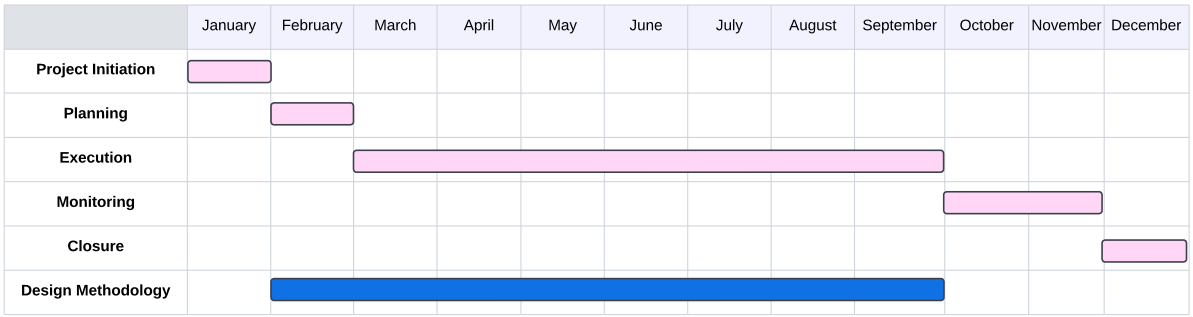
August 18th, 2024

Design Methodology

The design methodology is a subset of the project plan and is integrated into the overarching schedule. More specifically, it is integrated within the planning and execution phases. Figure 1 shows a gantt chart of the timeline of the project plan and where the design methodology takes place.

Figure 1

Project plan and design methodology timeline



Having a structured approach to guide the development process of a Project Management API using Python and Blockchain Technology is important to ensure the success of the project. Creating a design methodology will help make this process more smooth. The design methodology will consist of 5 phases: defining the problem, research, design and prototyping, testing, and implementation.

Defining Problem

Problem Statement: Identify the need for a secure, decentralized project management API that leverages python and blockchain technology.

Stakeholders: Project manager, blockchain engineers, software developers, upper management, IT security, quality control team, UI/UX designers, investors, customers.

Project features: Task tracking, resource management, and milestone tracking

Research

Competitor analysis: Research competitors products to identify issues, missing features, or potential risks.

Explore available resources: Research python libraries and frameworks that can be implemented into this project. Determine the most suitable blockchain technologies.

Design and Prototyping

Conceptual design: Define the structure of the project. Define process flow, databases, and blockchain integration.

Define architecture: Choose python libraries, blockchain platform, database, and version control system.

Prototype: Develop a prototype of the project with basic functionalities. This will include a basic user interface so that the user can interact with the API. This prototype can be loaded with “dummy” data to simulate the finished product.

Testing

Internal testing: Have the quality team test the prototype and identify any issues. The IT team will perform security testing and ensure that there are no potential threats.

External testing: Have potential users, such as investors or customers, test the prototypes functionality and ask to provide any feedback. This will consist of UI/UX design, usability, functionality, and any other feedback that the users experience.

Implementation

Finalize: Finalize the API based on the feedback during the testing phase. This will consist of removing any unnecessary features and ensuring that all core features are implements and functioning properly. Documentation will also need to be created for future users.

Evaluation: Once the final product is released, monitor the API by collecting real-world data and user feedback. Use this data and feedback to evaluate the performance, security, and scalability of the API and consider future enhancements.

Conclusion

The design methodology provides a structured approach to the development of a project that is implement into the planning and execution phases of the project plan. Design methodology helps the team organize and define the features of the finalized product and lays our a roadmap to arrive at best solution.