
SOEN 6841 SOFTWARE PROJECT MANAGEMENT

Software Solution Project Plan

Submission Date : 10 November 2024

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Term : Fall 2024

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Project GitHub Repository:

https://github.com/parikhalay/SPM_Team_12

Software Solution Project Plan

Table of Contents

Project Overview	4
Project Timeline	4
Total Time for Completion	4
Milestones	4
Iteration 1: Requirements & UI	4
Iteration 2: Task Management Functionality	4
Iteration 3: Graphical Collaboration System View	4
Iteration 4: Technical Collaboration System View	5
Iteration 5: Text-Based Collaboration System View.....	5
Iteration 6: Program Tracking Functionality.....	5
Iteration 7: Version Control Functionality.....	5
Iteration 8: Teams Communication & Collaboration	6
Iteration 9: Document & Diagram Sharing	6
Iteration 10: Authentication	6
Iteration 11: Integration with Other Tools.....	6
Project Phases, Timelines, and Milestones	7
Iteration 1: Requirements & UI	8
Iteration 2: Task Management Functionality	8
Iteration 3: Graphical Collaboration System View	9
Iteration 4: Tech Collaboration System View	10
Iteration 5: Text-Based Collaboration System View.....	10
Iteration 6: Program Tracking Functionality.....	11
Iteration 7: Version Control Functionality.....	12
Iteration 8: Teams Communication & Collaboration	13
Iteration 9: Document & Diagram Sharing	13
Iteration 10: Authentication	14
Iteration 11: Integration with Other Tools.....	15

<i>System Features:.....</i>	<i>15</i>
<i>App Features:</i>	<i>16</i>
<i>Major Project Milestones.....</i>	<i>16</i>
<i>Deliverables at Each Project Stage</i>	<i>17</i>
<i>Technological Resources Allocation:.....</i>	<i>18</i>
<i>Identification of Key Project Dependencies</i>	<i>18</i>

Project Overview

- **Project Name:** SyncWave
- **Development Methodology:** Incremental Software Development
- **Responsible Organization:** COMP 6841, Concordia University
- **Current Version:** 1.0

SyncWave aims to simplify project management and streamline collaboration for creative teams. Its main functionality encompasses task and project management, version control, document sharing, team communication, progress tracking, and integration with widely used tools, designed to address unique needs in creative workflows.

Project Timeline

- **Start Date:** November 10, 2024
- **End Date:** December 2027 (including buffer time)
- **Total Time to Complete Project:** 36 Months (34 Months + 2 Months Buffer Time)

Total Time for Completion

- **Total Time = 36 Months** (34 Months + 2 Months Buffer Time)

Milestones

Iteration 1: Requirements & UI

Milestone 1.1: Detailed System Requirements Specification (SRS) document

Milestone 1.2: General UI and Dashboard Development

Iteration 2: Task Management Functionality

Milestone 2.1: CRUD Task Functionality

Milestone 2.2: Organize Task Functionality

Milestone 2.3: CRUD Project Plan Functionality

Milestone 2.4: Assign Task to User Functionality

Milestone 2.5: View Project Calendar

Milestone 2.6: View Project Deadlines

Iteration 3: Graphical Collaboration System View

Milestone 3.1: Create Project Functionality

Milestone 3.2: Assign People to Project Functionality

Milestone 3.3: Edit Project Access Rights Functionality

Milestone 3.4: View Project Functionality

Milestone 3.5: View Project Changelog

Iteration 4: Technical Collaboration System View

Milestone 4.1: Create Project Functionality

Milestone 4.2: Assign People to Project Functionality

Milestone 4.3: Edit Project Access Rights Functionality

Milestone 4.4: View Project Functionality

Milestone 4.5: View Project Changelog

Iteration 5: Text-Based Collaboration System View

Milestone 5.1: Create Project Functionality

Milestone 5.2: Assign People to Project Functionality

Milestone 5.3: Edit Project Access Rights Functionality

Milestone 5.4: View Project Functionality

Milestone 5.5: View Project Changelog

Iteration 6: Program Tracking Functionality

Milestone 6.1: CRUD Milestone Functionality

Milestone 6.2: CRUD Deliverable Functionality

Milestone 6.3: View Project Progress

Milestone 6.4: Audit Project Functionality

Milestone 6.5: Update Project Status

Iteration 7: Version Control Functionality

Milestone 7.1: Request Change to Project

Milestone 7.2: View Change Request

Milestone 7.3: Approve/Decline Change Request

Milestone 7.4: Update Project Version

Milestone 7.5: Merge Versions

Milestone 7.6: View Code Changes

Milestone 7.7: Resolve Merge Conflicts

Milestone 7.8: CRUD Project Branch Functionality

Iteration 8: Teams Communication & Collaboration

Milestone 8.1: Establish Communication API

Milestone 8.2: Implement Chatting Platform

Milestone 8.3: Receive Notifications

Iteration 9: Document & Diagram Sharing

Milestone 9.1: Import Document

Milestone 9.2: Export Document

Milestone 9.3: Create Document

Milestone 9.4: Create Diagram

Milestone 9.5: Import Diagram

Milestone 9.6: Export Diagram

Iteration 10: Authentication

Milestone 10.1: Login Functionality

Milestone 10.2: Registration Functionality

Iteration 11: Integration with Other Tools

Milestone 11.1: Create Template

Milestone 11.2: Import Template

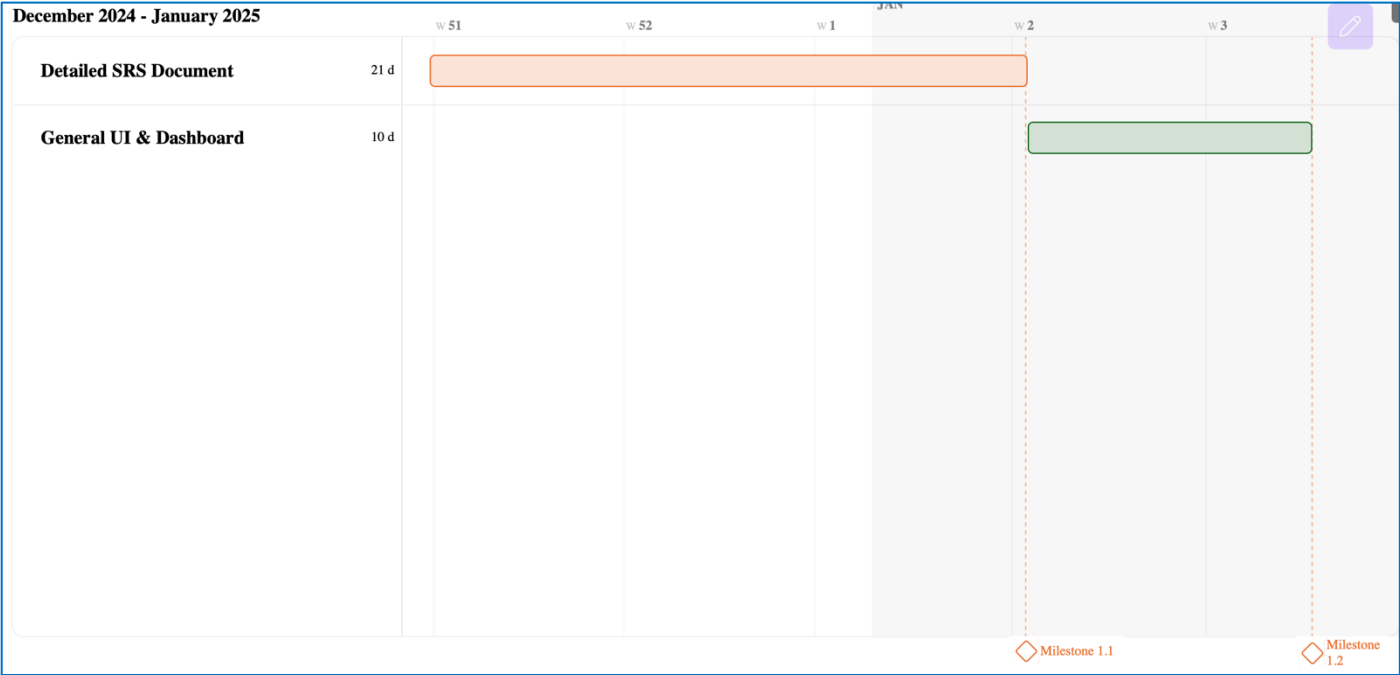
Milestone 11.3: Create API for Tools Integration

Project Phases, Timelines, and Milestones



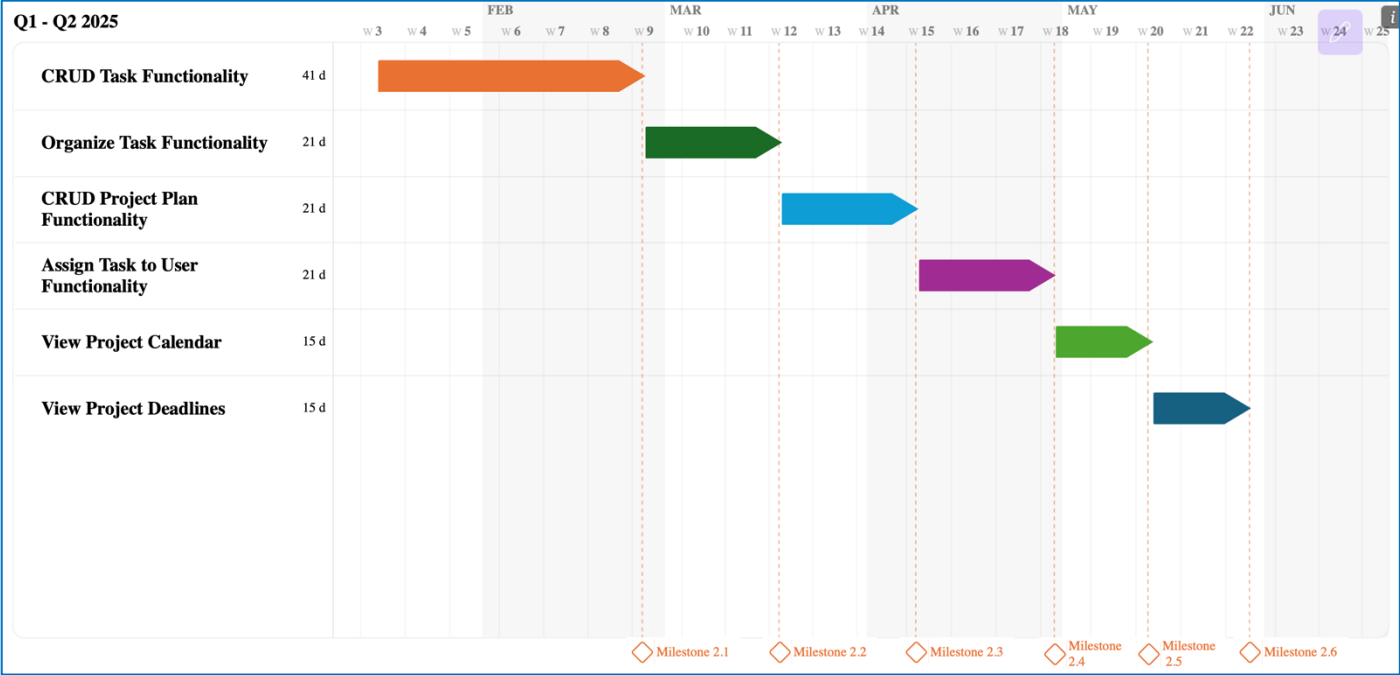
Iterations	Duration	Start Date	End Date
Requirements & UI	30 days	2024-12-16	2025-01-14
Task Management Functionality	130 days	2025-01-15	2025-05-24
Graphical Collaboration System View	85 days	2025-05-25	2025-08-17
Tech Collaboration System View	85 days	2025-08-18	2025-11-10
Text-Based Collaboration System View	85 days	2025-11-11	2026-02-03
Program Tracking Functionality	90 days	2026-02-04	2026-05-04
Version Control Functionality	131 days	2026-05-05	2026-09-12
Teams Communication & Collaboration	50 days	2026-09-13	2026-11-01
Document and Diagram Sharing	105 days	2026-11-02	2027-02-14
Authentication	35 days	2027-02-15	2027-03-21
Integration with Other Tools	50 days	2027-03-22	2027-05-10

Iteration 1: Requirements & UI



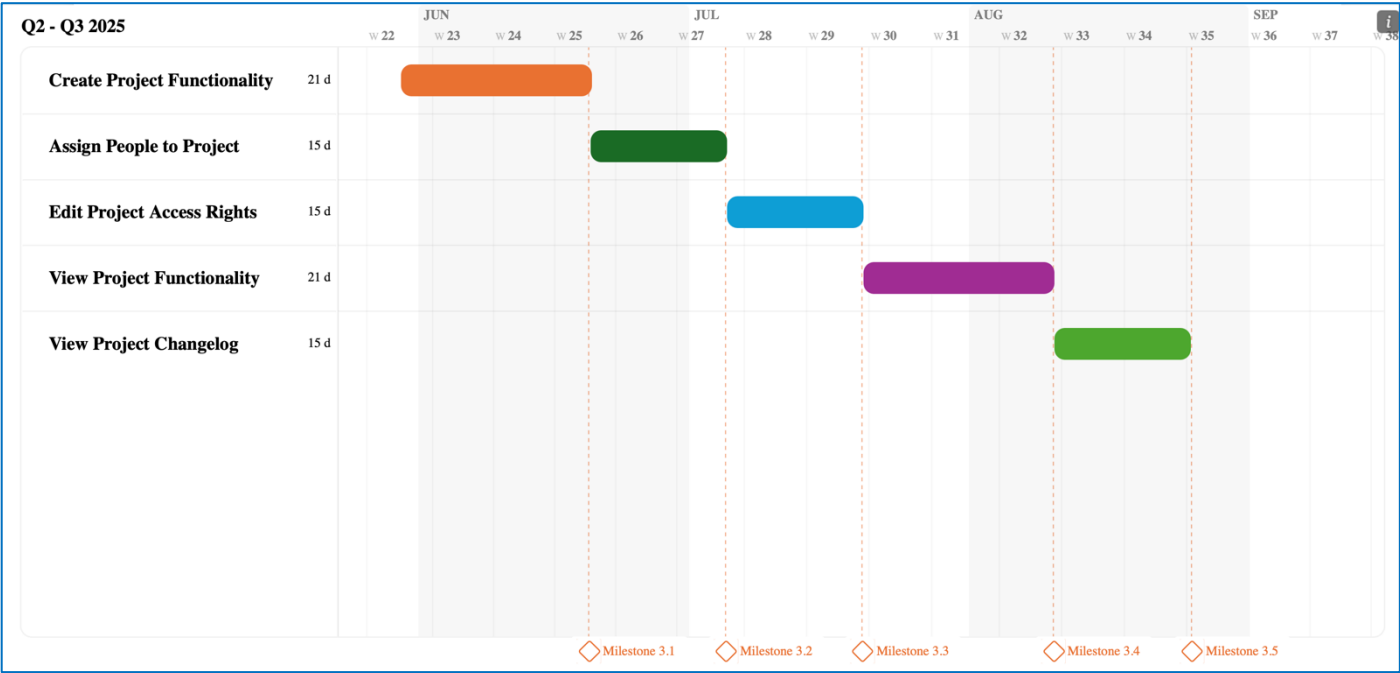
Task	Duration (Days)	Start Date	End Date	Milestone
Detailed SRS Document	21	2024-12-16	2025-01-05	Milestone 1.1
General UI & Dashboard	10	2025-01-06	2025-01-15	Milestone 1.2

Iteration 2: Task Management Functionality



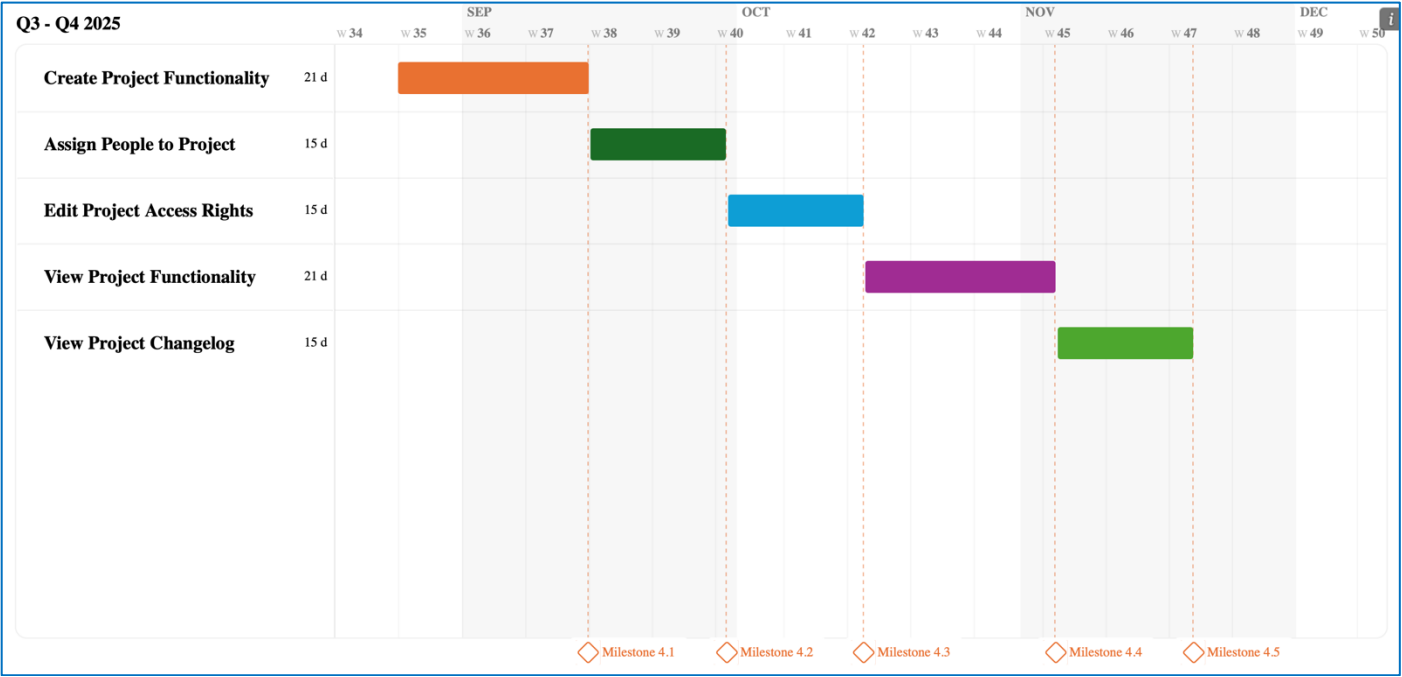
Task	Duration (Days)	Start Date	End Date	Milestone
<i>CRUD Task Functionality</i>	41	2025-01-16	2025-02-25	Milestone 2.1
<i>Organize Task Functionality</i>	21	2025-02-26	2025-03-18	Milestone 2.2
<i>CRUD Project Plan Functionality</i>	21	2025-03-19	2025-04-08	Milestone 2.3
<i>Assign Task to User Functionality</i>	21	2025-04-09	2025-04-29	Milestone 2.4
<i>View Project Calendar</i>	15	2025-04-30	2025-05-14	Milestone 2.5
<i>View Project Deadlines</i>	15	2025-05-15	2025-05-29	Milestone 2.6

Iteration 3: Graphical Collaboration System View



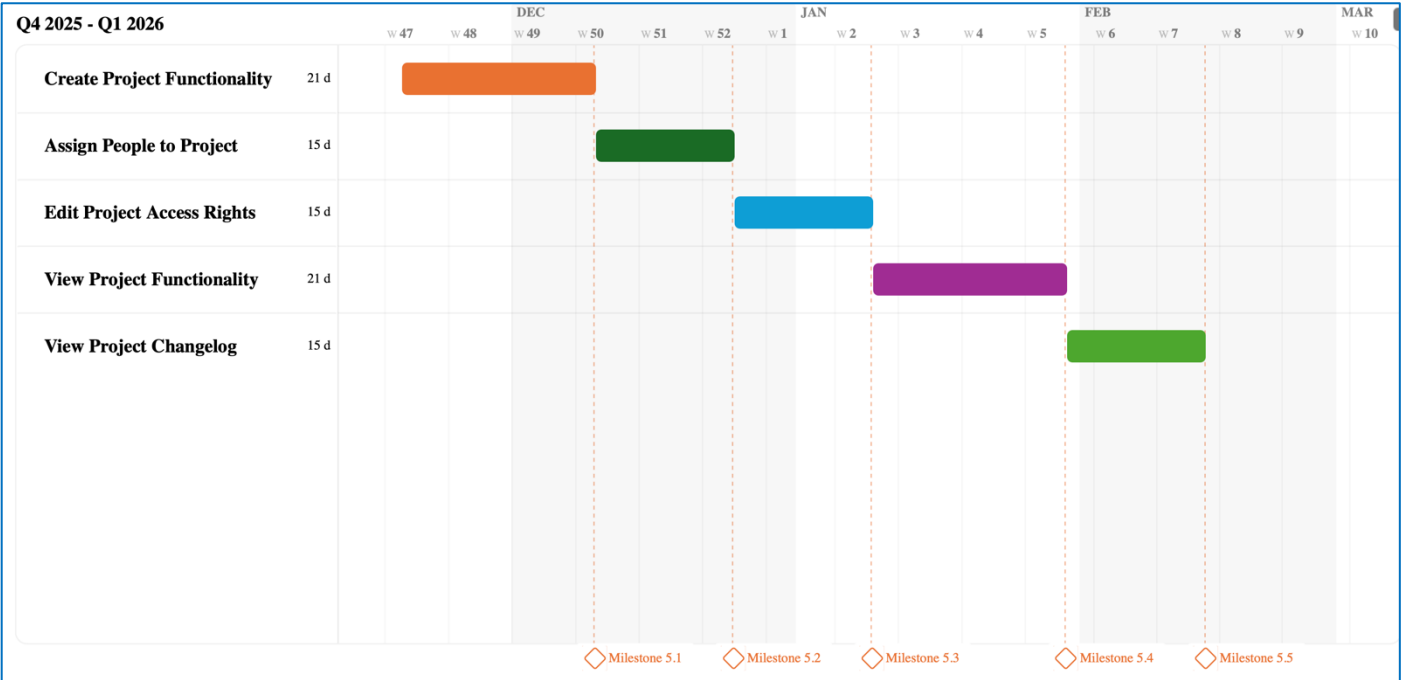
Task	Duration (Days)	Start Date	End Date	Milestone
<i>Create Project Functionality</i>	21	2025-05-30	2025-06-19	Milestone 3.1
<i>Assign People to Project</i>	15	2025-06-20	2025-07-04	Milestone 3.2
<i>Edit Project Access Rights</i>	15	2025-07-05	2025-07-19	Milestone 3.3
<i>View Project Functionality</i>	21	2025-07-20	2025-08-09	Milestone 3.4
<i>View Project Changelog</i>	15	2025-08-10	2025-08-24	Milestone 3.5

Iteration 4: Tech Collaboration System View



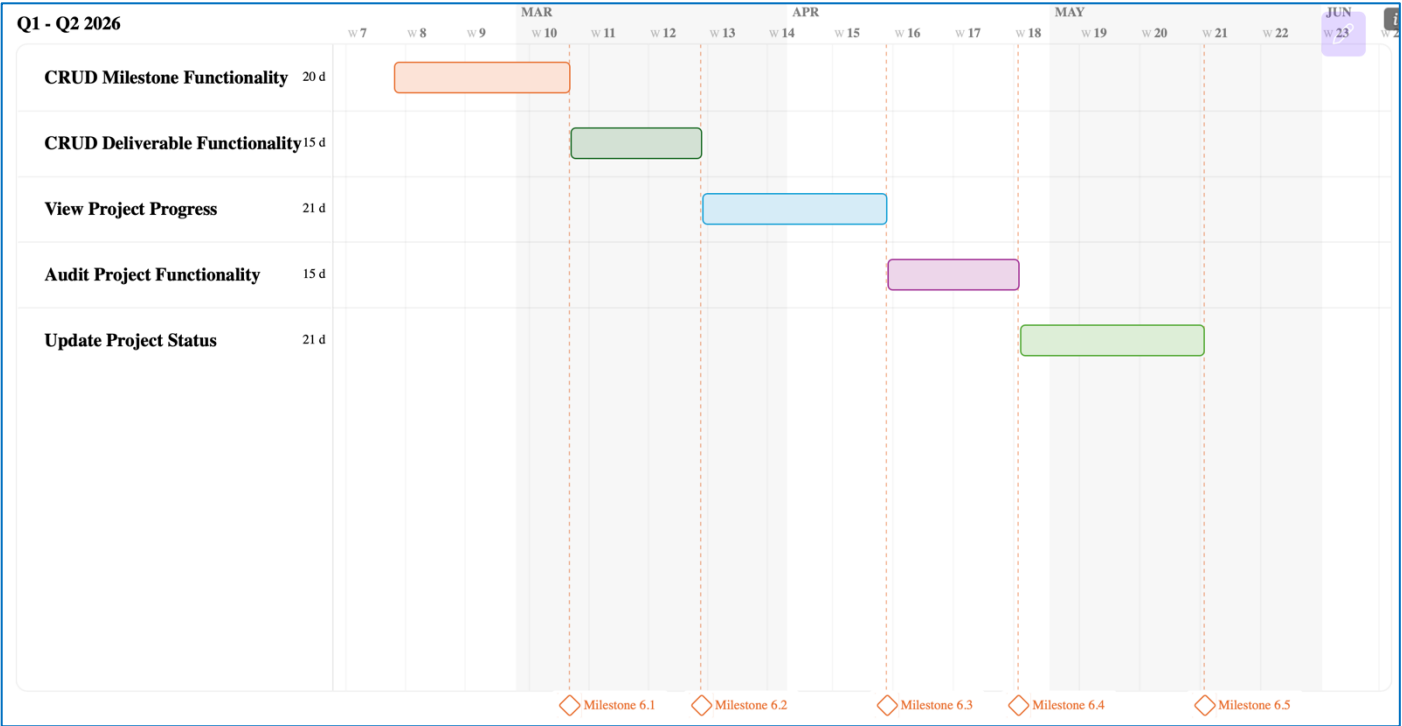
Task	Duration (Days)	Start Date	End Date	Milestone
Create Project Functionality	21	2025-08-25	2025-09-14	Milestone 4.1
Assign People to Project	15	2025-09-15	2025-09-29	Milestone 4.2
Edit Project Access Rights	15	2025-09-30	2025-10-14	Milestone 4.3
View Project Functionality	21	2025-10-15	2025-11-04	Milestone 4.4
View Project Changelog	15	2025-11-05	2025-11-19	Milestone 4.5

Iteration 5: Text-Based Collaboration System View



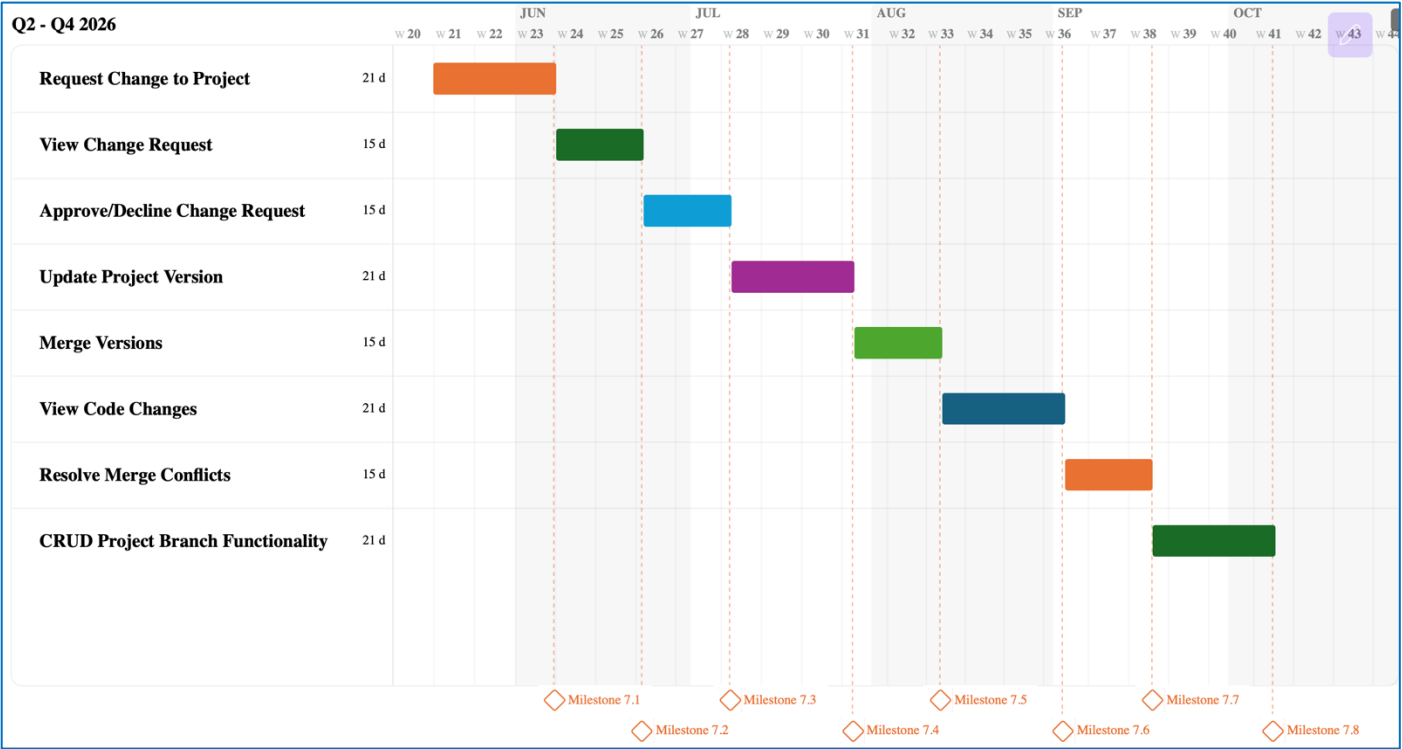
Task	Duration (Days)	Start Date	End Date	Milestone
Create Project Functionality	21	2025-11-20	2025-12-10	Milestone 5.1
Assign People to Project	15	2025-12-11	2025-12-25	Milestone 5.2
Edit Project Access Rights	15	2025-12-26	2026-01-09	Milestone 5.3
View Project Functionality	21	2026-01-10	2026-01-30	Milestone 5.4
View Project Changelog	15	2026-01-31	2026-02-14	Milestone 5.5

Iteration 6: Program Tracking Functionality



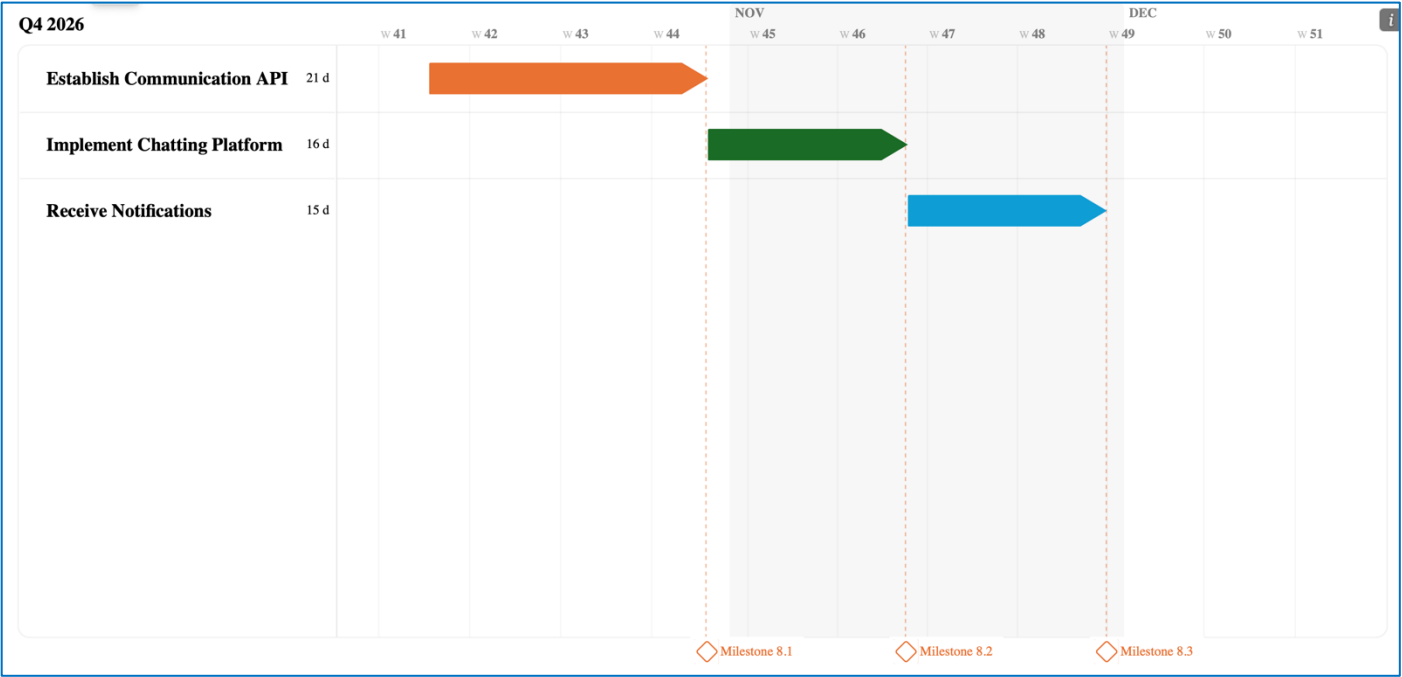
Task	Duration (Days)	Start Date	End Date	Milestone
CRUD Milestone Functionality	20	2026-02-15	2026-03-06	Milestone 6.1
CRUD Deliverable Functionality	15	2026-03-07	2026-03-21	Milestone 6.2
View Project Progress	21	2026-03-22	2026-04-11	Milestone 6.3
Audit Project Functionality	15	2026-04-12	2026-04-26	Milestone 6.4
Update Project Status	21	2026-04-27	2026-05-17	Milestone 6.5

Iteration 7: Version Control Functionality



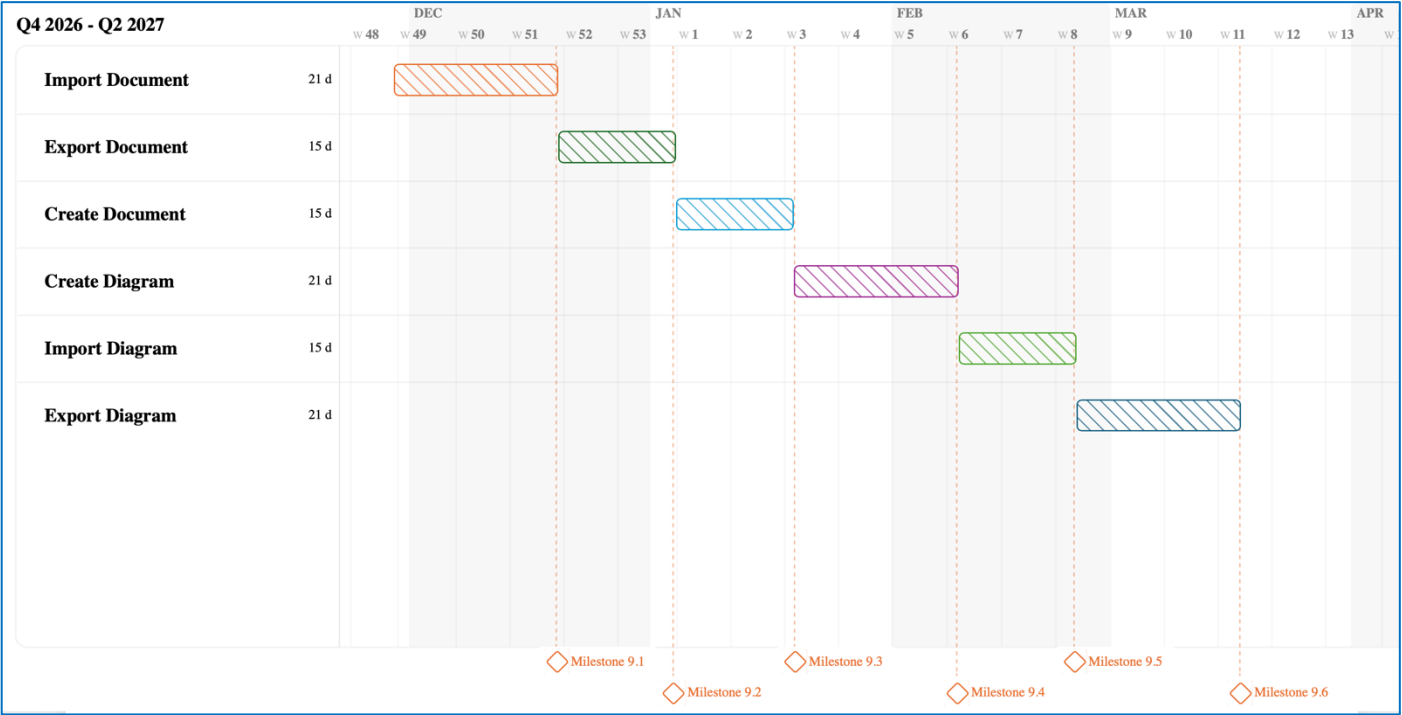
Task	Duration (Days)	Start Date	End Date	Milestone
Request Change to Project	21	2026-05-18	2026-06-07	Milestone 7.1
View Change Request	15	2026-06-08	2026-06-22	Milestone 7.2
Approve/Decline Change Request	15	2026-06-23	2026-07-07	Milestone 7.3
Update Project Version	21	2026-07-08	2026-07-28	Milestone 7.4
Merge Versions	15	2026-07-29	2026-08-12	Milestone 7.5
View Code Changes	21	2026-08-13	2026-09-02	Milestone 7.6
Resolve Merge Conflicts	15	2026-09-03	2026-09-17	Milestone 7.7
CRUD Project Branch Functionality	21	2026-09-18	2026-10-08	Milestone 7.8

Iteration 8: Teams Communication & Collaboration



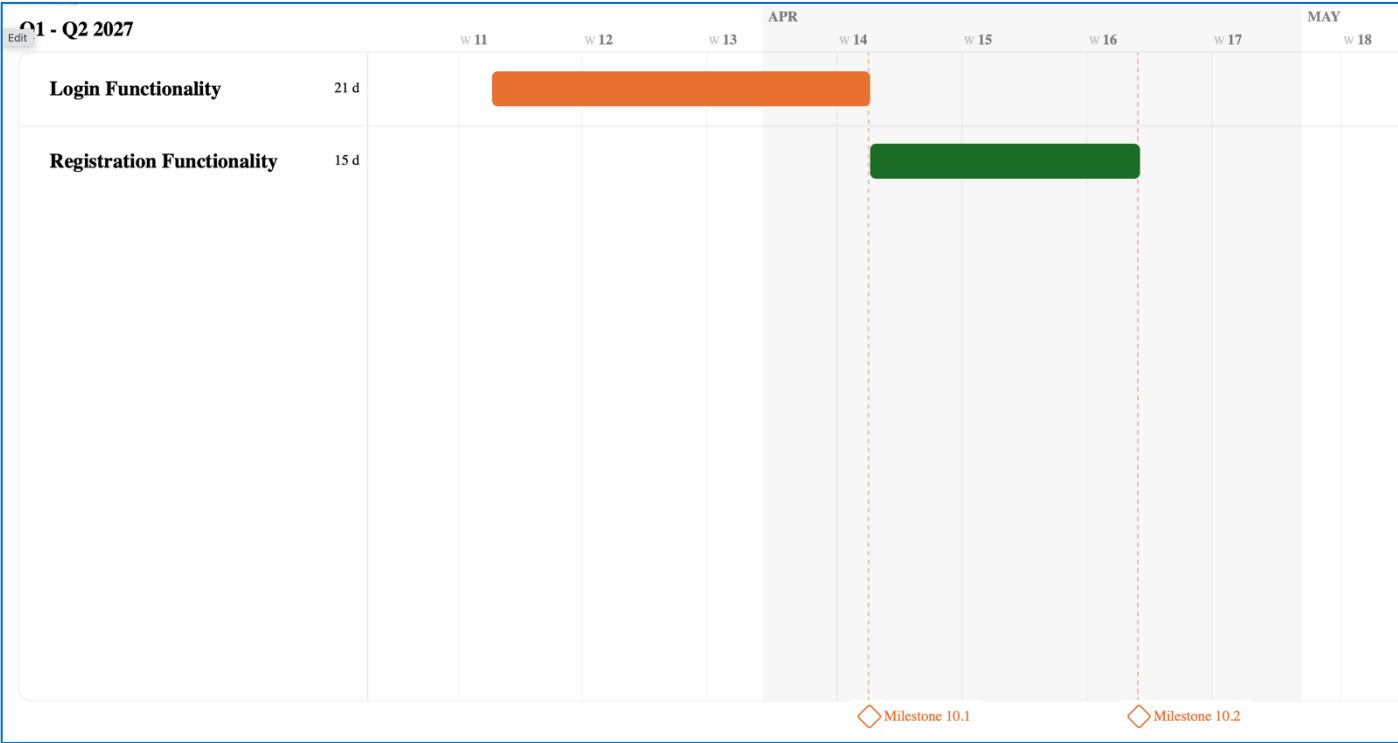
Task	Duration (Days)	Start Date	End Date	Milestone
Establish Communication API	21	2026-10-09	2026-10-29	Milestone 8.1
Implement Chatting Platform	15	2026-10-30	2026-11-13	Milestone 8.2
Receive Notifications	15	2026-11-14	2026-11-28	Milestone 8.3

Iteration 9: Document & Diagram Sharing



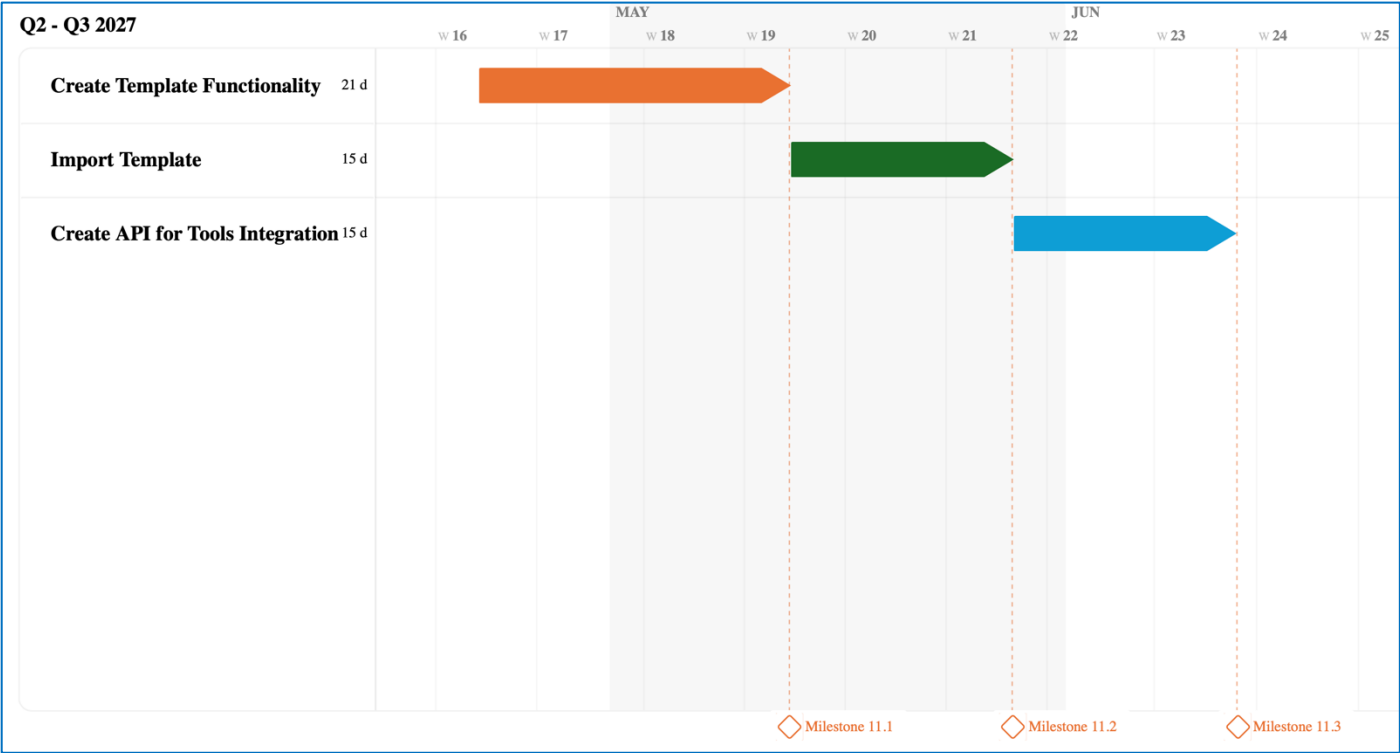
Task	Duration (Days)	Start Date	End Date	Milestone
<i>Import Document</i>	21	2026-11-29	2026-12-19	Milestone 9.1
<i>Export Document</i>	15	2026-12-20	2027-01-03	Milestone 9.2
<i>Create Document</i>	15	2027-01-04	2027-01-18	Milestone 9.3
<i>Create Diagram</i>	21	2027-01-19	2027-02-08	Milestone 9.4
<i>Import Diagram</i>	15	2027-02-09	2027-02-23	Milestone 9.5
<i>Export Diagram</i>	21	2027-02-24	2027-03-16	Milestone 9.6

Iteration 10: Authentication



Task	Duration (Days)	Start Date	End Date	Milestone
<i>Login Functionality</i>	21	2027-03-17	2027-04-06	Milestone 10.1
<i>Registration Functionality</i>	15	2027-04-07	2027-04-21	Milestone 10.2

Iteration 11: Integration with Other Tools



Task	Duration (Days)	Start Date	End Date	Milestone
Create Template Functionality	21	2027-04-22	2027-05-12	Milestone 11.1
Import Template	15	2027-05-13	2027-05-27	Milestone 11.2
Create API for Tools Integration	15	2027-05-28	2027-06-11	Milestone 11.3

System Features:

- Multiple dashboards tailored for different project types.
- Option to select the project type at the beginning of each project.
- Customizable user interface for enhanced flexibility.
- Built-in version control system.
- Ability to import and export documents, files, and diagrams in various formats.
- Auditing functionality to track project progress and compare it against assigned tasks and requirements.
- Time management functionality.
- Task prioritization capabilities.
- Real-time project progress monitoring.
- Branching and pull request review features.
- Diagram creation tool.
- Integrated in-app chat feature.
- Built-in meeting integration for seamless collaboration.

App Features:

- Real-time synchronization of data with the system.
- Dedicated project chat feature to keep work discussions separate from personal conversations.
- Meeting functionality that allows users to join anytime, from anywhere.
- Real-time notifications for important updates.
- Display of pending tasks for better task management.
- Office calendar integration for easy scheduling.
- Video recording functionality with storage for 7 days, allowing users to record and replay meetings or important discussions.

Major Project Milestones

1. Finalization of Requirements Document (Milestone 1.1):

- The system requirements document, including detailed user stories and functionalities, is finalized.
- This milestone is achieved upon completion of Iteration 1.

2. Stakeholder and User Approval (Milestone 1.2):

- Approval is secured from stakeholders and users for the finalized requirements document.
- This milestone follows Milestone 1.1.

3. Completion of Design and System Architecture (Milestone 2):

- System architecture diagram and high-level component designs are completed.
- UI mockups, wireframes, database schemas, and detailed design documents are finished.
- This milestone is achieved after Iteration 2 is completed.

4. Completion of Front-end Development (Milestone 3):

- Key front-end components and functionalities are developed, including user authentication and authorization features.
- The UI is integrated with back-end services. Basic UI and user acceptance testing (UAT) are conducted.
- Achieved after Iteration 3.

5. Completion of Back-end Development (Milestone 4):

- API endpoints for core functionalities are implemented, and user management and access control features are completed.
- Integration with external services is finished, followed by back-end unit and integration testing.
- This milestone is achieved after Iteration 4.

6. Deployment on Web Server (Milestone 5):

- The application is deployed to the AWS cloud platform with security configurations and performance testing conducted.
- This milestone is achieved after Iteration 5.

7. Completion of Software Testing (Milestone 6):

- System-wide testing, including integration, performance, and stress testing, is executed.
- All identified issues, bugs, and defects are resolved.
- This milestone is completed after Iterations 6 and 7.

8. Launch of Initial Version (Milestone 7):

- The first version of the application is launched, with all features accessible to a limited user group.
- This milestone is achieved upon the completion of Iteration 8.

9. Ongoing Maintenance and Monitoring (Milestone 8):

- A plan for continuous application support, updates, and monitoring is in place.
- This milestone is achieved after the final deployment of the project.

Deliverables at Each Project Stage

1. Project Requirements Document:

- A comprehensive document detailing the features, user stories, and functional requirements of the project.

2. System Design and Architecture Files:

- Includes diagrams of the system architecture, high-level design components, UI wireframes, mockups, database structure, and in-depth design documentation.

3. Frontend Development:

- Development of key user interface components and their associated functionalities.

4. Backend Development:

- Creation of API endpoints for essential functions, user management, access control features, and integration with third-party services.

5. Deployed System:

- The application is fully deployed on the AWS cloud with appropriate security configurations.

6. Testing Documentation:

- Reports outlining the results of integration, system, performance, and stress testing.

7. Initial Version Release:

- The first version of the software is launched with complete features, available to a limited user group for testing.

8. Ongoing Maintenance and Monitoring Strategy:

- A plan for continual support, software updates, and monitoring of the deployed application.

Technological Resources Allocation:

Phase	Category	Technological Resource	Cost (USD)
Phase 1: Requirements Elicitation	-	-	No technological costs specified
Phase 2: Design & Architecture	Software License	Adobe Licenses	\$708
	Security	SSL License	\$100
Phase 3: Front-end Implementation	Software License	Adobe Licenses	\$708
Phase 4: Back-end Implementation	Infrastructure	Servers	\$10,500
	Emergency Support	Emergency Bug Fixes/Updates	\$5,000
Phase 5: Web Hosting	Infrastructure	Servers	\$10,500
	Security	SSL License	\$100
	Subscription	AWS Subscription	\$0.5
Phase 6: Software Testing	Emergency Support	Emergency Bug Fixes/Updates (as needed)	Variable
Phase 7: Deployment	-	-	No specific technological costs specified
Phase 8: Maintenance & Monitoring	-	-	No specific technological costs specified

Identification of Key Project Dependencies

To ensure the smooth and efficient progress of the project, it's crucial to identify critical dependencies that can impact each stage of development. These dependencies include factors related to project scope, resource availability, technical requirements, and iterative feedback. Each dependency plays an essential role in facilitating a streamlined workflow and achieving project milestones without setbacks. Below are the key dependencies identified:

1. **Comprehensive Requirements Gathering**

The success of each development iteration relies on well-defined and clearly understood requirements. Having a precise understanding of what needs to be developed prevents delays and minimizes rework by aligning team members with project goals early on. Ensuring a stable foundation in requirements will enhance the team's ability to execute each feature with precision.

2. **Completion of Design & Architecture**

Design and architectural planning must be established before development commences for each iteration. A detailed architectural blueprint provides a roadmap, reducing the chances of encountering bottlenecks or inconsistencies. Without this phase, the development team might face implementation challenges, impacting the project timeline.

3. **Resource Availability & Allocation**

Consistent access to skilled resources, including developers, designers, and quality assurance testers, is essential for each project phase. Any shortages or unavailability of these key team members can hinder progress and potentially delay iteration timelines. Proactive resource management and allocation planning are needed to address this dependency.

4. **Technology and Tool Compatibility**

The development, testing, and deployment phases depend on specific tools and technology stacks. Compatibility and availability of these tools are critical to maintain development momentum. If there are delays in acquiring or troubleshooting these technologies, it could lead to substantial slowdowns, impacting iteration progress and final delivery.

5. **Timely Feedback and Iteration Review Cycles**

Receiving timely feedback from stakeholders and conducting review sessions are essential for refining each iteration. This dependency ensures that necessary adjustments are incorporated based on real-time feedback, enhancing functionality and user satisfaction. Delays in receiving feedback can disrupt the development flow and impact subsequent stages.

6. **Smooth Integration with External Systems**

Dependencies on third-party systems or services for integration need to be identified and planned. Integrations are essential to ensure that the solution works seamlessly within its intended environment. Any delays or technical issues in these integration points may disrupt project timelines, making early identification and management critical.

7. **Efficient Quality Assurance (QA) Processes**

Testing and quality assurance play a significant role in validating each iteration's stability and functionality. Dependencies on QA resources and processes must be managed efficiently to align with development timelines. Thorough testing and quality checks reduce the risk of issues post-release, ensuring that each iteration meets performance standards.

8. **Detailed Documentation and Knowledge Sharing**

Proper documentation and knowledge transfer activities are important for maintaining

project continuity, especially between iterations. This dependency enables future scalability, as each team member can have easy access to critical project information. Effective documentation practices help streamline knowledge-sharing processes and mitigate risks associated with personnel transitions.

9. **Proactive Risk Management Strategies**

Identifying and addressing risks proactively helps in minimizing unexpected challenges that may impact each iteration. Risk management activities should be an ongoing process, evaluating potential threats that may emerge and strategizing mitigation approaches. Dependencies on effective risk management ensure that any uncertainties are tackled early to keep the project on track.