

The Incremental Model allows for iterative development, where each increment introduces new functionalities, gradually building towards a comprehensive project management tool. Below is a detailed plan, documentation of challenges faced, and proposed improvements for each increment.

Increment 1: Task Creation and Assignment

- **Features Added:**

- Users can create tasks with titles, descriptions, and deadlines.
- Tasks can be assigned to team members.

- **Challenges Faced:**

1. Ensuring seamless user authentication and role-based access control.
2. Limited UI intuitiveness, causing confusion during task assignment.

- **Proposed Improvements:**

1. Implement a tutorial or guided walkthrough for first-time users.
2. Enhance UI with clearer icons and labels for task assignment.

Increment 2: Task Status Tracking

- **Features Added:**

- Introduced status options: To Do, In Progress, and Completed.
- Users can update the status of their tasks.

- **Challenges Faced:**

1. Difficulty in ensuring real-time updates across all user devices.
2. Overwhelming notifications for status changes.

- **Proposed Improvements:**

1. Implement WebSocket technology for real-time updates.
2. Introduce customizable notification settings.

Increment 3: Collaboration and Communication

- **Features Added:**

- Added a comment section for each task.
- Enabled file attachments for tasks.

- **Challenges Faced:**

1. Managing file upload size limits without compromising performance.
2. Ensuring secure data exchange and storage.

- **Proposed Improvements:**

1. Integrate a cloud-based storage solution for large file handling.
2. Use end-to-end encryption for sensitive communications.

Increment 4: Reporting and Analytics

- **Features Added:**

- Dashboards displaying task completion rates and deadlines met.
- Exportable reports on team performance.

- **Challenges Faced:**

1. Designing dynamic and visually appealing dashboards.

2. Ensuring compatibility with various file formats for report export.

- **Proposed Improvements:**

1. Use data visualization libraries (e.g., D3.js) for advanced charts and graphs.
2. Implement multiple export options (PDF, CSV, Excel).

Increment 5: Integration with Third-Party Tools

- **Features Added:**

- Integrated with calendar applications for task reminders.
- API support for syncing with external tools like Slack and Trello.

- **Challenges Faced:**

1. Ensuring compatibility with multiple third-party APIs.
2. Handling API rate limits during data synchronization.

- **Proposed Improvements:**

1. Establish a middleware layer for handling API calls efficiently.
2. Implement caching mechanisms to minimize redundant API requests.