

□ Project Specification Document

1. Project Overview

Project Title: WorkHub

Objective:

Develop a full-stack web application that enables teams to manage projects, tasks, and progress efficiently. The system will include role-based access control, progress visualization through charts, and real-time collaboration features.

Technologies Used:

- **Frontend:** Angular (TypeScript, HTML, CSS, Bootstrap/Tailwind)
- **Backend:** Spring Boot (Java, Spring Security, JWT, JPA)
- **Database:** MySQL
- **Charts:** Chart.js or ngx-charts
- **Build Tools:** Maven (backend), Angular CLI (frontend)
- **Version Control:** Git/GitHub

2. System Description

The Project Management Dashboard allows users to:

- Manage multiple projects.
- Assign team members to projects and tasks.
- Track progress through interactive dashboards.
- Communicate and collaborate via comments and activity logs.
- Access features according to user roles (Admin, Manager, Team Member).

3. Actors and Roles

Role	Description	Main Responsibilities
Admin	System administrator	Manage users, assign roles, oversee projects
Project Manager	Manages projects	Create/edit projects, assign tasks and members
Team Member	Executes assigned tasks	View and update tasks, comment, collaborate

4. Functional Requirements

4.1 Authentication & Authorization

- Users can log in securely using JWT tokens.
 - Admins can create, edit, and delete user accounts.
 - Role-based access:
 - Admin: Full system access.
 - Manager: Project and task management.
 - Member: Access assigned projects and tasks only.
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4.2 User Management

- Create new users and assign roles.
 - Edit or deactivate users.
 - View all registered users with their assigned roles and status.
 - Reset or change passwords.
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4.3 Project Management

- Create a new project with:
 - Title, description, start date, end date, and status.
 - Assign team members to a project.
 - Update project information (e.g., progress or deadlines).
 - Change project status (Planned, Active, On Hold, Completed).
 - View project dashboard summarizing:
 - Progress percentage.
 - Total tasks.
 - Assigned members.
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4.4 Task Management

- Create tasks under a project.

- Assign tasks to team members.
 - Edit task information (title, description, priority, deadline, status).
 - Track task progress (To Do → In Progress → Done).
 - Filter tasks by status, priority, or assignee.
 - Delete or archive tasks.
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4.5 Collaboration & Communication

- Comment on tasks to discuss progress or share updates.
 - View task history and all related comments.
 - Upload attachments (optional extension).
 - View recent project activities (Activity log).
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4.6 Dashboard & Reports

- Admin and Managers can access an overview dashboard displaying:
 - Total projects, tasks, and users.
 - Projects by status (Active, Completed, etc.).
 - Task distribution per user.
 - Progress visualization (Pie/Bar charts).
 - Generate and export reports (optional).
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4.7 Notifications (Future Enhancement)

- Notify users when:
 - They're assigned a task.
 - A task's status changes.
 - A new comment is added.

5. Future Enhancements

- Real-time notifications via WebSocket.
- File attachments for tasks.
- Calendar or Gantt chart view.
- Integration with Google Calendar or Slack.
- Multi-language support.