

Task Management Application — MVP Specification

1. Business Requirements (7)

- 1 User registration & login — Users can register and log in securely.
- 2 Create tasks — Logged-in users can create tasks with title, description, and deadline.
- 3 Assign tasks — A user can assign a task to another registered user.
- 4 List tasks — Users can view their own created or assigned tasks.
- 5 Update task status — Tasks can be marked as 'To Do', 'In Progress', or 'Done'.
- 6 Delete tasks — Task owners can delete their own tasks.
- 7 Notifications — Log events when a task is assigned or completed.

2. MVP Features (5)

- **User Management** — JWT authentication, registration, login endpoints with secure password storage.
- **Create & Assign Tasks** — Users create tasks and assign them to others; transactional logging on assignment.
- **List & Filter Tasks** — Users can list and filter tasks by status or due date.
- **Update & Delete Tasks** — Update title, description, or status; delete only by creator; AOP audit logging.
- **Error Handling & AOP** — Centralized exception handling; logging and performance metrics using aspects.

3. Data Model Summary

Entities: User, Task, TaskLog (optional), Role (optional), AuthToken (optional).

Relations: User→Task (1–N for created tasks), User→Task (1–N for assigned tasks), Task→TaskLog (1–N).

4. Example Endpoints

- POST /api/v1/auth/register
- POST /api/v1/auth/login
- POST /api/v1/tasks
- PUT /api/v1/tasks/{id}/assign/{userId}
- GET /api/v1/tasks
- PUT /api/v1/tasks/{id}
- DELETE /api/v1/tasks/{id}