

Builder Portfolio Project

Workflows Documentation

1. User Authentication Workflow (Login / Register)

Roles: User (Builder, Project Manager, Client), Authentication Service

Steps:

a) Register a new user:

- User provides: username, email, password, role.
- AuthenticationServiceImpl.register(user) is called.
- UserDao.addUser(user) inserts the user into the database.
- Success → User is registered.

b) Login existing user:

- User provides: username, password.
- AuthenticationServiceImpl.login(username, password) is called.
- UserDao.getUserByUsername(username) fetches the user.
- If username and password match → login successful.
- Else → throws InvalidUserException.

Decision Points:

- Wrong credentials → show error.
- User role (Builder/Manager/Client) determines available actions.

2. Project Management Workflow

Roles: Builder, Project Manager, Client, Project Service

Steps:

Create Project (Builder only)

- a) Builder inputs project details:
 - Project name, builderId, clientId, managerId, budget.
- b) ProjectServiceImpl.createProject(project, currentUser) is called.
- c) Checks if currentUser.role == BUILDER.
- d) ProjectDao.addProject(project) adds project to DB.

- e) Default values: status = NEW, actualSpend = 0.
- f) Project created successfully.

Update Project (Project Manager only)

- a) Project Manager selects project to update.
- b) Can update:
 - a. Status (UPCOMING, IN_PROGRESS, COMPLETED)
 - b. Expenses
- c) ProjectServiceImpl.updateProject(project, currentUser) is called.
- d) Checks if currentUser.role == PROJECT_MANAGER.
- e) ProjectDao.updateProject(project) updates DB.

View Projects

- a) Any user can view projects.
- b) ProjectServiceImpl.viewProjects(currentUser) returns a list of projects.
- c) Client can only view project status and documents, cannot update.

Delete Project

- a) Builder or Admin can delete project.
- b) ProjectDao.deleteProject(projectId) removes project from DB.
- c) Ensure foreign key constraints are handled (e.g., cascade delete documents).

3. Budget & Timeline Tracking

Roles: Builder, Project Manager

Fields:

- a) **Budget:** total allocated amount for project
- b) **Actual Spend:** money spent so far
- c) **Status:** NEW, UPCOMING, IN_PROGRESS, COMPLETED

Steps:

- a) When creating a project → set budget, actualSpend = 0.
- b) Project Manager can **add expenses** using Project.addExpense(amount):
 - Updates actualSpend.
 - Updates status as needed (e.g., IN_PROGRESS when work starts).
- c) System can display budget utilization:
 - actualSpend / budget for tracking.
- d) Status changes track timeline progress:

- NEW → UPCOMING → IN_PROGRESS → COMPLETED

4. Document Management Workflow

Roles: Project Manager, Client

Steps:

- a) Project Manager uploads documents related to a project:
 - Input: projectId, documentName, filePath
 - ProjectDocument object created.
 - ProjectServiceImpl.uploadDocument(doc, currentUser) called.
 - Checks role → must be PROJECT_MANAGER.
 - DocumentDAO.addDocument(doc) saves to DB.
- b) Client can view documents for a project:
 - ProjectServiceImpl.getDocumentsForProject(projectId)
 - Returns list of documents (name + path)
 - Read-only access.

Notes:

- Documents are linked to projects via project_id.
- Security: Only Project Managers can upload/update; Clients can view.

- 5. **GitHub Link :** <https://github.com/SoumyaBehura18/BuilderPortfolioProject.git>