Software Test Plan for ProjectHub

Project Name: ProjectHub

Course: Software Engineering

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Objective: The objective of this software test plan is to define the testing strategies, objectives, resources, and schedule for the ProjectHub system. The plan ensures that the software meets functional and non-functional requirements.

Scope: This test plan covers testing of:
 - Backend services and APIs (main.py and app/database/models/*)
 - Database interactions (PostgreSQL via database.py)
 - Core functionality of user roles (Admin, Professor, Student)
 - API endpoints and business logic
 - Basic front-end integration if applicable

Test Types:

1. Unit Testing: To test individual modules (e.g., config, models).

2. Integration Testing: To test communication between components (e.g., DB models with endpoints).

3. System Testing: Full application tests simulating real-world usage.

4. Regression Testing: To ensure new changes don't break existing features.

Test Environment:

- OS: Any Unix-based or Windows OS

- Python Version: As per .python-version file

- Database: PostgreSQL

- Framework: FastAPI or similar (inferred from structure)

Tools:

- Pytest: For unit and integration tests
- Coverage.py: To assess test coverage
- SQLite/PostgreSQL: For test database setup

Schedule:

-Start Date: January 29, 2025
-End Date: May 08, 2025
-Milestones:
    1)Feb 7: Statement of Work
    2)Mar 10: Software Requirements Specification
    3)Apr 7: Software Design Document
    4)May 2: Software Test Plan
    5)May 8: Project Demos

Resources:

- Testers: medha, grisha
- Developers: grisha, medha, aditya, hriday
- Tools: Pytest, GitHub, PostgreSQL, VS Code

Risks:

1) Insufficient test coverage due to overlapping academic deadlines or limited time for thorough testing
2) Unclear or evolving project requirements affecting the stability of planned test cases
3) Delays in module integration from different team members may push testing timelines

Deliverables:

- Statement of Work Document

- Software Requirements Specification

- Software Design Document

- Software Test Plan

- Working model