PES UNIVERSITY, BANGALORE

Department of Computer Science and Engineering

B. Tech (CSE) – 5th Semester – Aug-Dec 2023

UE21CS341A - Software Engineering
PROJECT PLAN DOCUMENT

CAMPUS COMPASS : Navigating College Life Together

Team Member 1	PES1UG21CS564	Team Member 3	PES1UG21CS574
Team Member 2	PES1UG21CS568	Team Member 4	PES1UG21CS599

Life-cycle followed

The Agile Software Development Model using the Scrum framework

We have chosen the Agile model as it allows for flexibility in responding to changing requirements and promotes continuous collaboration with stakeholders, which is crucial for a project aimed at serving college students' evolving needs.

SCRUM model will allow us to do the following :-

Flexibility: Scrum's iterative approach allows for adapting to changing requirements by organizing work into time-boxed sprints for regular feedback and adjustments.

Risk Mitigation: Scrum identifies and addresses risks early by delivering smaller, manageable portions of the project incrementally.

Regular Inspections: Frequent Sprint Reviews and Retrospectives enable continuous improvement and refinement of the product and development processes.

Enhanced Transparency: Scrum emphasizes transparency through artifacts like the Product Backlog and Burndown Charts, ensuring a clear view of project progress and priorities for all stakeholders.

Continuous Collaboration: Scrum promotes transparent communication with stakeholders through ceremonies like Sprint Reviews and Sprint Planning, ensuring alignment with user needs in future.

Tools Used for this Project

1. **Project planning and management tools:**

Trello: for managing tasks, creating boards, and organizing project activities.

Asana: Manage tasks and projects, set deadlines and assign responsibilities.

Jira: plays a key role in project planning and management, providing a comprehensive task tracking, agile planning, collaboration and reporting platform that enables teams to organize and execute projects effectively.

2. **Design Tools:**

Figma: A collaborative design tool for creating wireframes, prototypes and design concepts.

Adobe XD: A user experience and interaction design tool for creating interactive prototypes.

3.**Version Control:**

Git: A distributed version control system for tracking changes to source code.

GitHub: Online platforms for hosting Git repositories and collaborating with your team.

4. **Development tools:**

Integrated development environment (IDE): Python's flexibility and Django's powerful features allow for the rapid development of the application's backend logic. Campus Compass leverages the power of Visual Studio Code for efficient development, Python with Django for a robust and secure backend, and HTML/CSS/JavaScript for an intuitive and user-friendly frontend.

Database management system : MySQL

5. **Bug Tracking:**

Jira: A popular issue and project tracker that can be used to track bugs.

6. **Testing Tools:**

Selenium: For automated testing of web applications.

Jest: Jest is a widely-used JavaScript testing framework for testing frontend code.

Cypress: Cypress is a comprehensive testing platform specifically designed for testing web applications.

Pytest: Pytest is a popular Python testing framework that can be used with Django for more advanced and flexible testing.

7. **Documentation tools:**

Confluence: Collaboration and documentation tool often used in conjunction with Jira.

Google Docs or Microsoft Word: Used to create project documentation, manuals, and reports.

8. **Communication and collaboration tools:**

Zoom : For virtual meetings and discussions.

Google Workspace: for email, file sharing and collaboration.

9.**Code review and collaboration:**

GitHub : In addition to version control, these platforms offer code review and collaboration features.

Deliverables classified as reuse/build components

Reusable Components:

User Authentication Module

Resource Sharing Module

Mentorship Module

Community Discussion Module

Build Components:

User Interface (UI) Components

Database Schema

User Role Management System

Announcement and Event Management System

Work Breakdown Structure

Project: Campus Compass - Navigating College Life Together

1. Project Initiation and Planning (Weeks 1-2)
   1.1. Define project objectives and scope
   1.2. Form project teams and assign roles
   1.3. Gather initial user requirements
   1.4. Create a comprehensive project plan and schedule

2. Design and Prototype (Weeks 3-4)
   2.1. Design user interface concepts
   2.2. Create a functional prototype demonstrating core functionalities

3. Architectural Design and UML Diagrams (Weeks 5-6)
   3.1. Define system architecture
   3.2. Create UML diagrams illustrating system structure and behavior

4. Development and Coding (Weeks 7-8)
   4.1. Front-end Development
      4.1.1. Implement user profiles, registration and login
      4.1.2. Develop resource sharing functionality
      4.1.3. Create mentorship features
      4.1.4. Develop announcement functionality
   4.2. Back-end Development
      4.2.1. Build database components
      4.2.2. Implement user authentication and authorization
      4.2.3. Develop algorithms for doubt resolution
   4.3. Integration of Front-end and Back-end

5. Testing and Documentation Kickoff (Week 9)
   5.1. Functional Testing
      5.1.1. Test user registration, login and user profile
      5.1.2. Test resource sharing functionality
      5.1.3. Test mentorship features
      5.1.4. Test announcement functionality
   5.2. Usability Testing
      5.2.1. Gather user feedback on the prototype
      5.2.2. Implement design improvements
   5.3. Performance Testing
      5.3.1. Ensure system scalability and responsiveness
   5.4. Documentation
      5.4.1. Create user manuals and guides
      5.4.2. Prepare technical documentation

6. Testing, Finalization, and Presentation (Week 10)
   6.1. Continued Testing
      6.1.1. Address issues and bugs
   6.2. Finalize Project Documentation
      6.2.1. Review and edit documentation
   6.3. Project Presentation
      6.3.1. Prepare presentation materials
      6.3.2. Showcase the fully functional "Campus Compass"

7. Project Completion (Week 10)
   7.1. Review and finalize all project deliverables
   7.2. Handover the project to relevant stakeholders
   7.3. Post-launch support planning

8. Ongoing Support and Maintenance (Post-Project)
   8.1. Monitor system performance and address issues
   8.2. Update and enhance features based on user feedback
   8.3. Provide ongoing technical support to users

Functionalities within the above tasks include:
- User Registration and Authentication
- User Profiles
- Resource Sharing
- Mentorship and Guidance
- Doubt Resolution
- Year-Based Roles (Student Hierarchy)
- Vital Announcements
- Content Moderation and User Management

Effort Estimation (in person-months)

Project title:
No. of working days= 7 days
Effort estimation=7/21.66 = 0.323 person-months

SRS and WBS:
No. of working days=10 days
Effort estimation= 10/21.66=0.461 person-months

Designing and Prototyping:
No. of working days= 14 days
Effort estimation=14/21.66=0.646 person-month

Development:
No. of working days= 14 days
Effort estimation= 14/26.1= 0.646 person-month

Testing:
No. of working days= 10 days
Effort estimation = 10/21.6= 0.461 person-months

Report and Presentation:
No. of working days= 10 days

Effort estimation = 10/21.6= 0.461 person-months

Gantt Chart