



SparkUp

SPARKUP — INTERACTIVE INNOVATION JOURNEY PROJECT

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- **Course:** CSC 305 – Software Engineering

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INTRODUCTIIION

Have you ever had a great idea but lacked the right tools to develop it?

Many students face this challenge. SparkUp provides a platform to organize ideas, get feedback from mentors, and showcase projects to a wider audience.

PROJECT OVERVIEW

Problem Statement:

University students often struggle to find platforms that help in sharing and developing their innovative ideas. Many creative and technical concepts remain underdeveloped due to a lack of structured tools and resources.



PROJECT OVERVIEW

Problem Goal:

The goal of SparkUp is to create a platform that empowers students to submit, organize, and develop their ideas. It offers tools for idea classification, access to educational resources, mentorship from academic professionals, and a space to showcase projects to a broader audience.



PROJECT IMPORTANCE

Why This Project Matters:

- SparkUp addresses the gap in the current educational ecosystem by providing students with a structured platform for creativity and innovation. It helps students present their ideas professionally, receive constructive feedback from mentors, and gain exposure to a wider community.
- This project promotes student creativity, supports academic growth, and encourages collaboration among peers and mentors, ultimately contributing to the development of real-world skills.

PROJECT METHODOLOGY & APPROACH

How the Project Was Executed:

- **Methodology:** The project followed an Waterfall methodology, with iterative development cycles and continuous feedback from both team members and stakeholders.

Phases

Planning

Defined the scope, goals, and deliverables of the project.

Design

Designed the system architecture, user interface, and database structure.

Development

Developed core functionalities, including idea submission, mentor feedback, and project gallery features.

Testing

Performed various levels of testing, including unit testing, integration testing, and user acceptance testing.

Deployment

Deployed the platform for academic use and received feedback for future improvements.

Tools & Technologies Used

- **Tools Used in the Project:**

- UI Design: Canva
- Project Management: ClickUp
- Meetings & Communication: Zoom

- **System Modeling:**

- UML (Use Case Diagrams)
- ER Diagrams
- Database design (ER & schema) using MySQL

SOFTWARE PROJECT MANAGEMENT PLAN

SPMP- OBJECTIVE (OVERVIEW)

Project Management

- Define project timeline, and budget.
- Allocate resources to ensure efficient execution.

Risk Management

- Identify technical, and security risks.
- Apply mitigation strategies to reduce impact.

SOFTWARE PROJECT MANAGEMENT PLAN

SPMP- IMPLEMENTATION PLAN

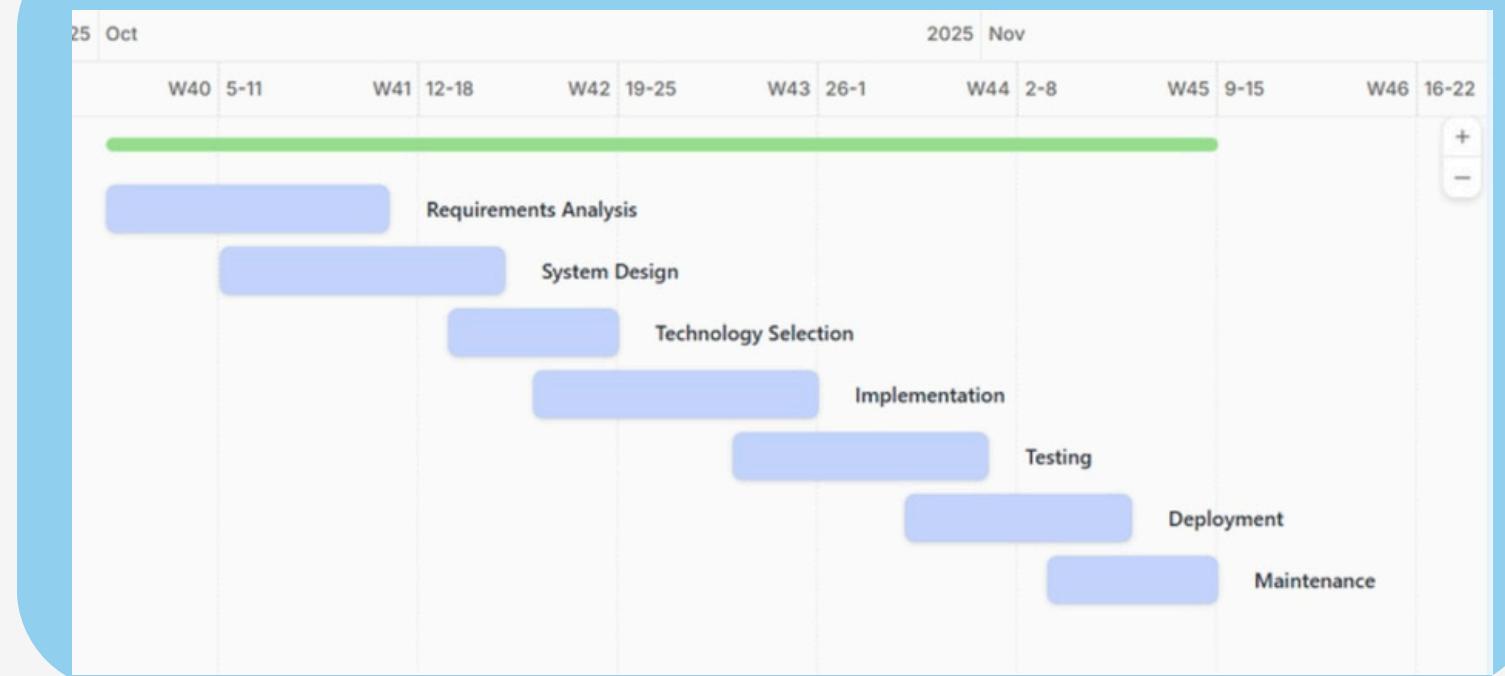
Progress Monitoring

- Weekly meetings and status reports to ensure the project adheres to the timeline and budget.

Initial Planning & Scheduling

- Define phases using the Waterfall model.
- Estimate time, cost, and required resources.
- Assign roles based on team expertise.

Project Schedule (Waterfall Model)



SOFTWARE PROJECT MANAGEMENT PLAN

SPMP- EXPECTED RESULTS (DELIVERABLES)

Expected Results

- On-time delivery of all project phases.
- Effective risk handling.
- Efficient budget utilization.

Challenges

- Managing security risks such as data loss.
- Managing limited budget and time.

SRS – SOFTWARE REQUIREMENTS SPECIFICATION

System Scope

- SparkUp is a web-based platform supporting the full student innovation journey.
- Includes idea management, SEARCH tools, mentor consultations, digital library, project gallery, and administration.
- Excludes payments, physical logistics, and deep LMS integrations.

User Requirements

- Students: submit ideas, use search tools, request mentoring, publish projects.
- Mentors: review ideas and provide guidance.
- Admins: manage users, content, and reports.
- Visitors: view published projects only.

SRS – FUNCTIONAL & NON-FUNCTIONAL REQUIREMENTS

Core Functional Features

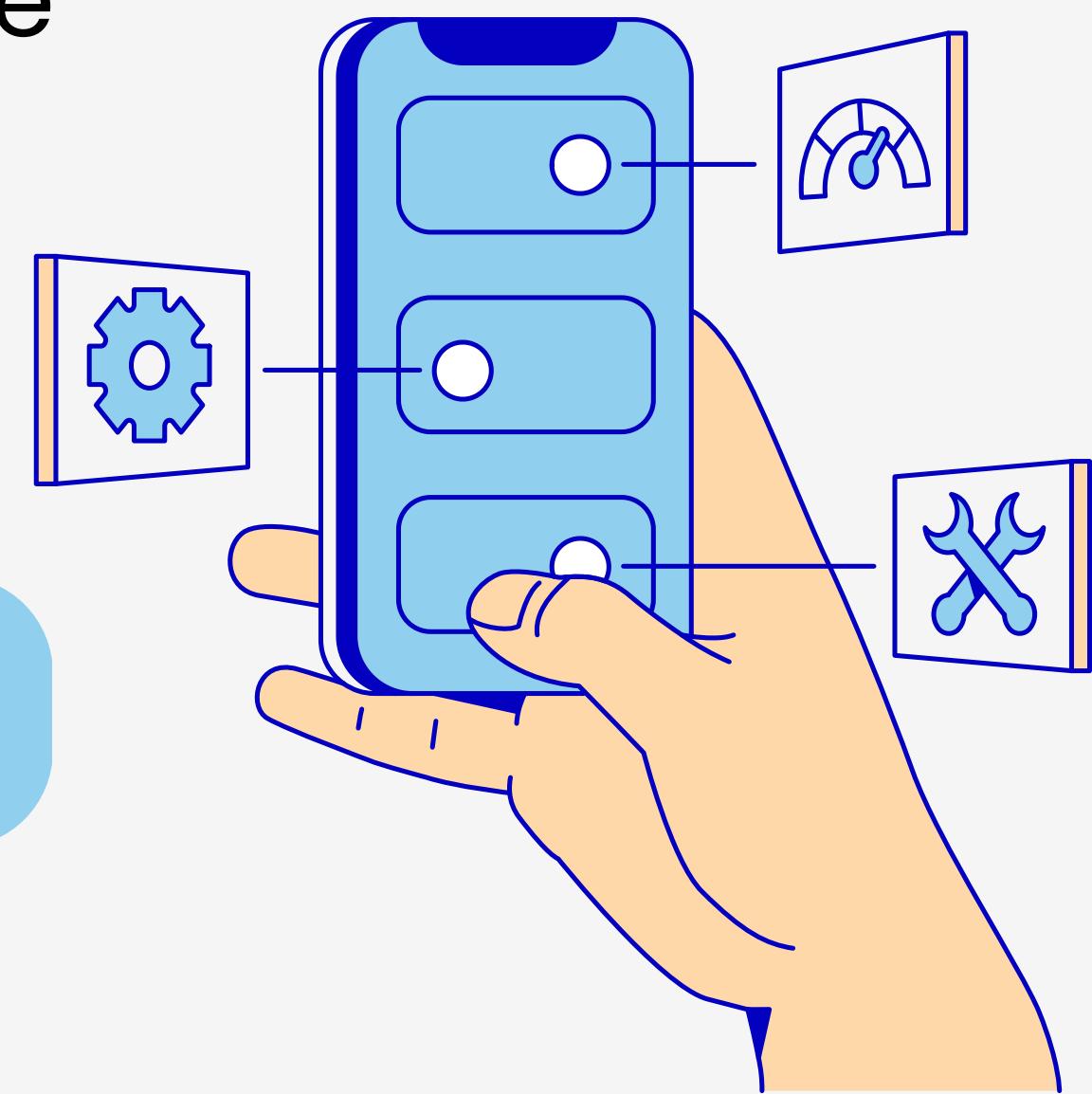
- Idea submission and management
- SEARCH-assisted naming and classification
- Mentor consultation system
- Digital library access
- Project exhibition and interaction
- Administration and moderation

Key Non-Functional Constraints

- Page load \leq 3 seconds, SEARCH response \leq 5 seconds
- Secure access with encryption and role-based control
- WCAG 2.1 AA accessibility compliance
- $\geq 99\%$ system availability
- Web-based, HTTPS required

SDS – SYSTEM DESIGN OVERVIEW

- High-level system architecture
- Separation of frontend, backend, and database
- Modular design approach
- Scalable and maintainable system



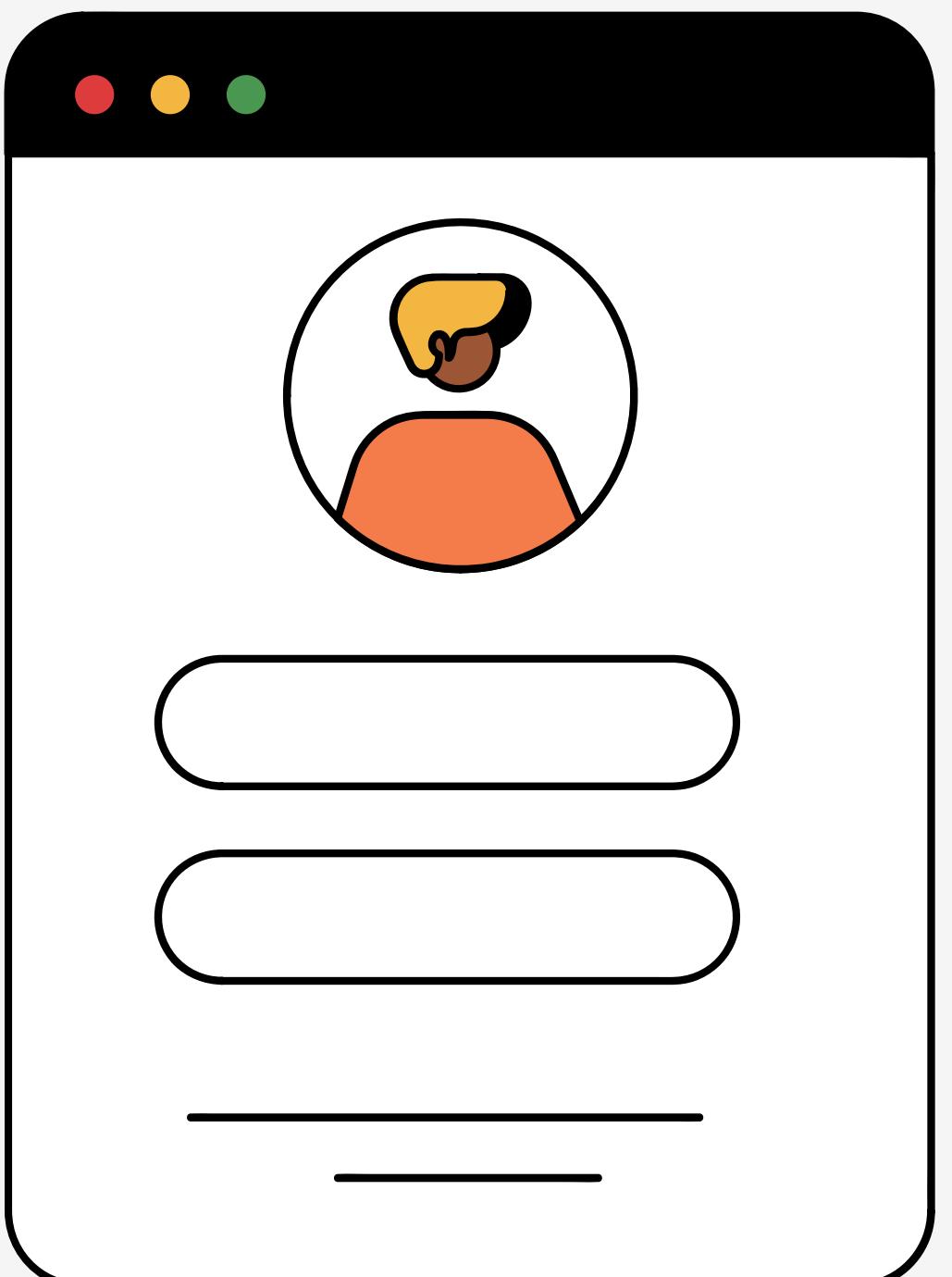
SDS – KEY DESIGN DECISIONS

- Role-based user access
- Secure authentication and authorization
- Centralized database design
- Clear separation of system responsibilities

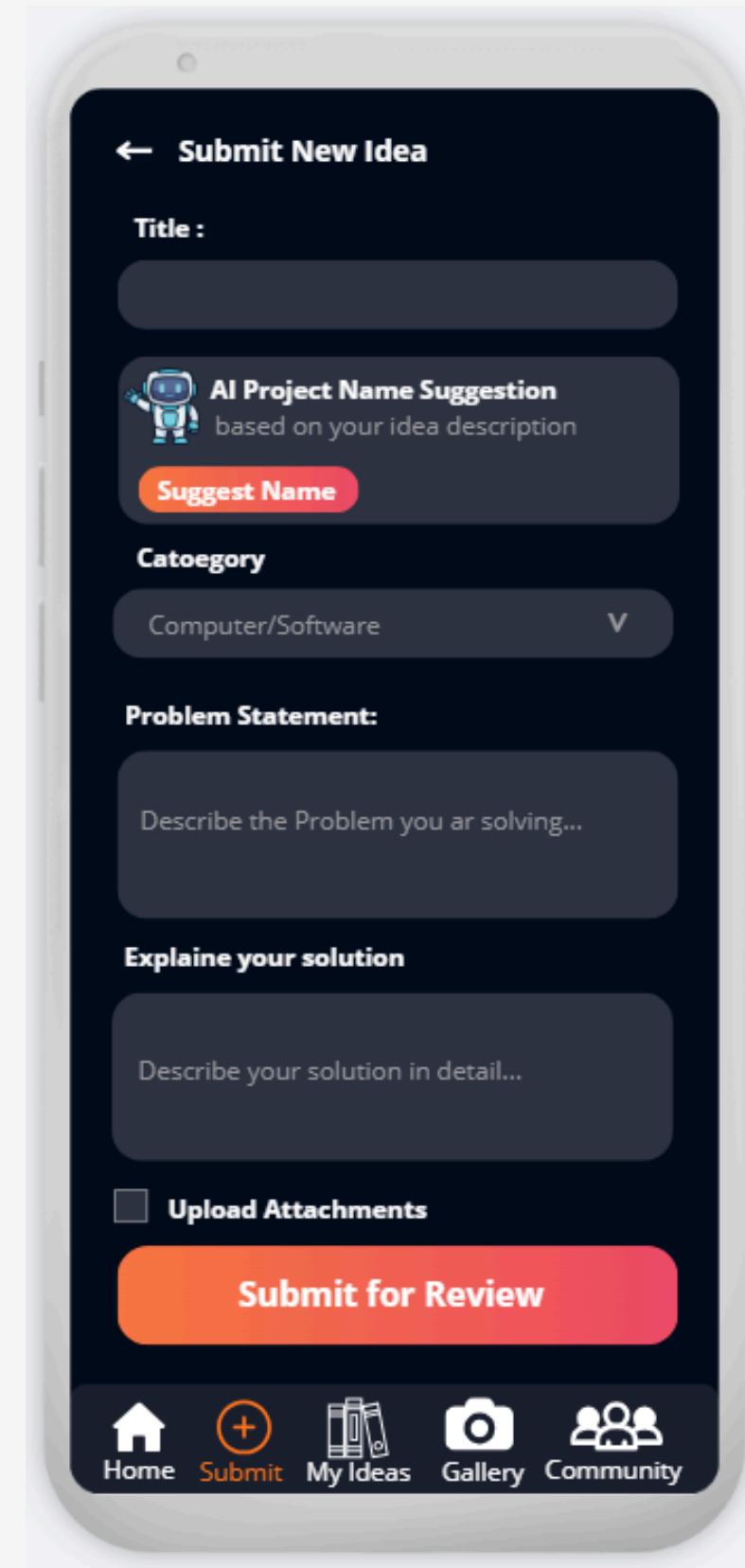
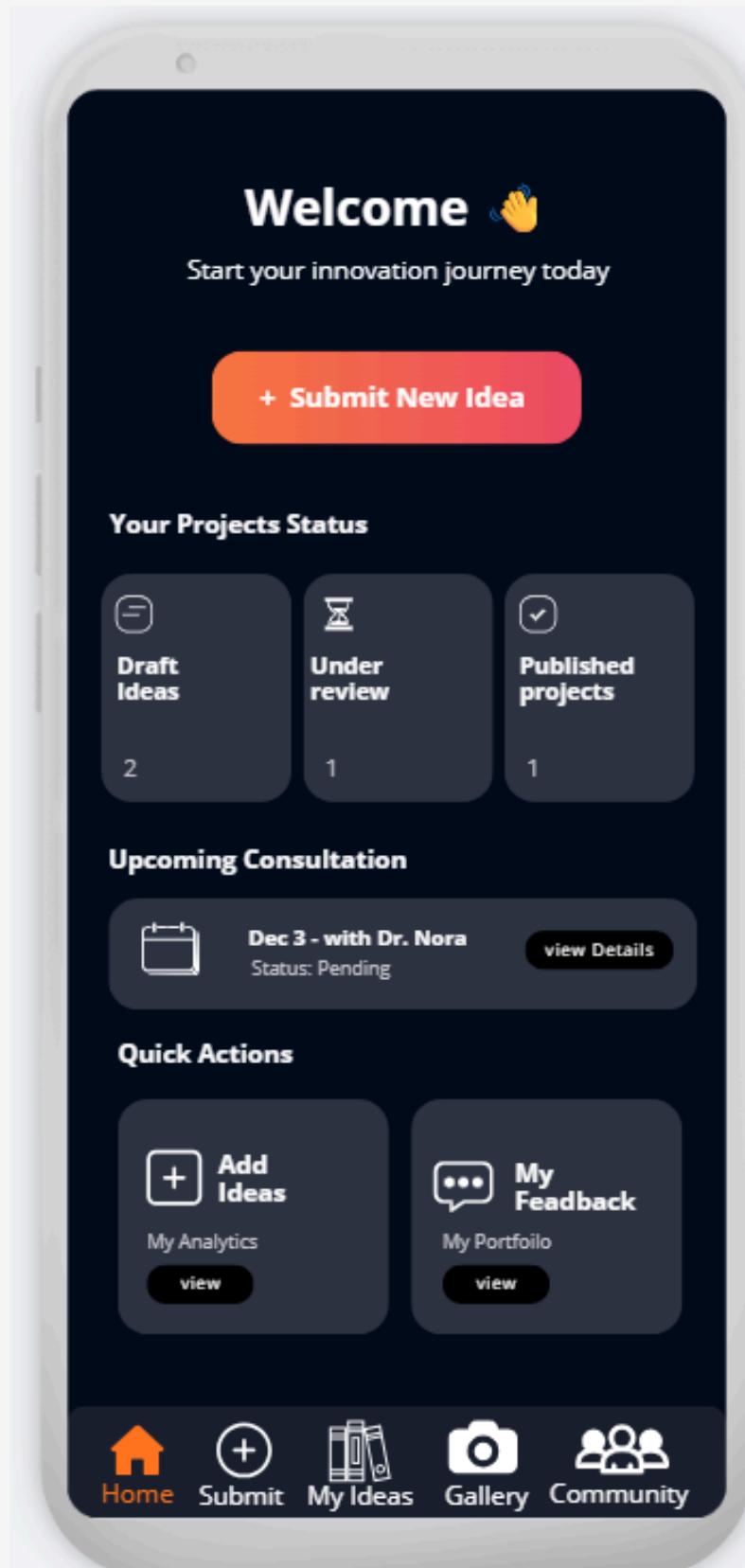
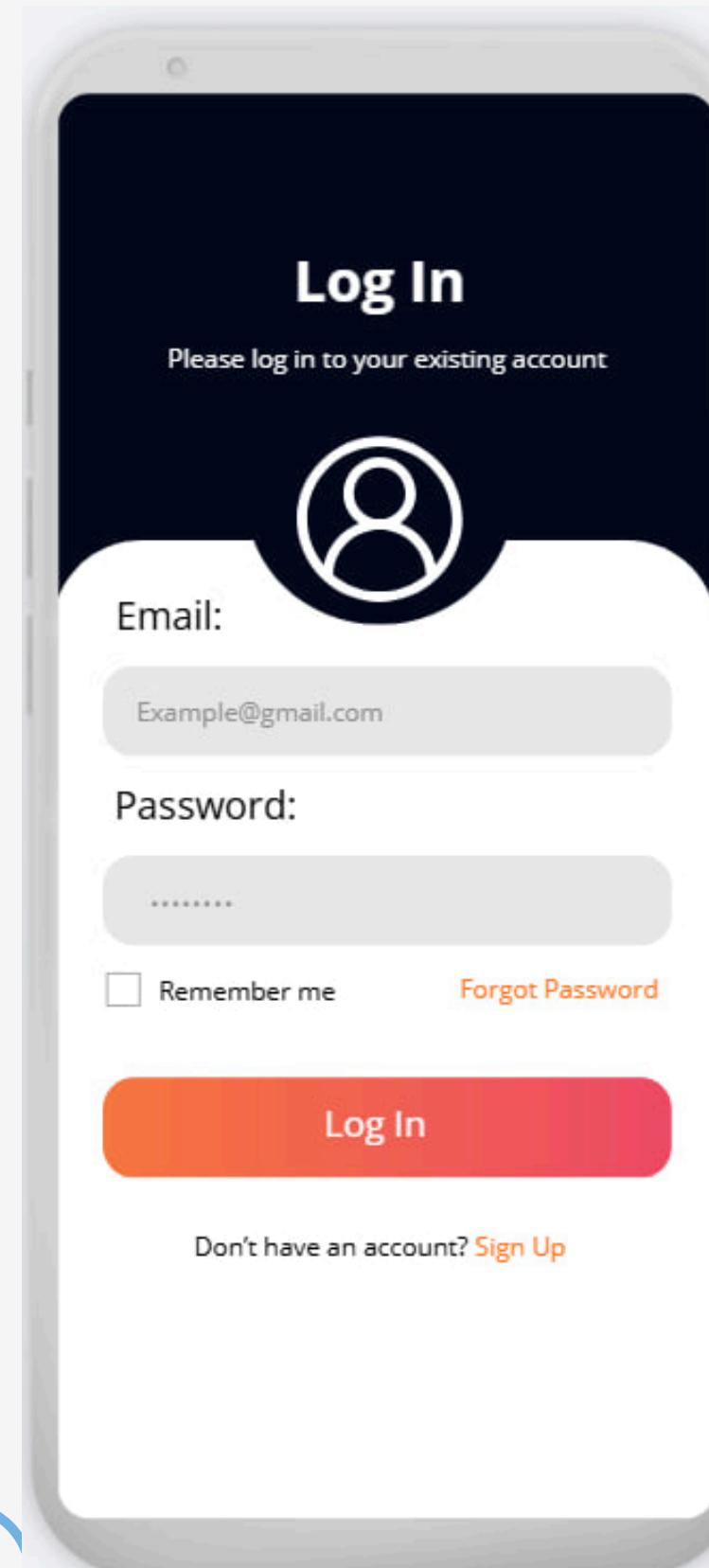


SDS – UI & DATA DESIGN SUMMARY

- User-friendly interface design
- Simple navigation and clear workflows
- Structured data handling



SDS – UI DESIGN SAMPLES



STS – TESTING OVERVIEW

- Purpose of software testing
- Functional and non-functional testing coverage
- Multiple test levels and strategies
- Verification against system requirements



STS – SAMPLE TEST CASE (LOGIN / LOGOUT)

Field	Description
Test Case ID	TC-AUTH-01
Objective	Verify that registered users can log in and log out successfully.
Pre-conditions	User account exists and is activated; user is on the login page.
Test Steps	1) Enter valid email and password. 2) Click “Login”. 3) After login, click on “Logout”.
Expected Result	User is redirected to the dashboard after login; correct role dashboard is shown. After logout, user session ends and login page is displayed again.

CHALLENGES & SOLUTIONS

Problems

- **Integration of external systems.**
- **Time and resource limitations.**
- **User acceptance for mentorship features.**

Solutions

- **Agile methodology with iterative feedback.**
- **Collaboration tools (Zoom, ClickUp, WhatsApp)**
- **Rigorous testing cycles to meet user expectations.**

CONCLUSION – SUMMARY

Key Findings:

- SparkUp provides a structured platform for students to develop and showcase their ideas.
- Integration of AI tools and digital resources to support creativity.

Project Value:

Empowers students with mentorship, feedback, and exposure to a wider community.

FUTURE WORK

Improvements:

1. Advanced AI features for personalized recommendations.
2. Mobile app development for greater accessibility.
3. Expansion of mentorship network.

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THANK YOU