Project Proposal

Software Engineering

CS-360

Fleeto

Group 6

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Daanish

Submitted in partial

fulfilment of the

requirements of a

Software Engineering course project

Monday 3rd Feb 2025

Maintain version history here

VERSION 1.0.0

PROJECT PROPOSAL

VERSION HISTORY				
VERSION	APPROVED BY	REVISION DATE	DESCRIPTION OF CHANGE	AUTHOR
1.0.0		03-02-2025	Project Proposal	Group 6

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1.0 Overview

1.1. Purpose

LUMS students often face difficulties navigating and keeping track of multiple apps to fulfil their daily needs for groceries, medicines, and food. Using a separate app for food, then another for grocery, and a completely different one for medicine leads to inefficiencies and inconvenience, making managing orders from different vendors challenging.

The project aims to develop a mobile application tailored for LUMS students, striving to consolidate all relevant local eateries, grocery stores, and pharmacies into a single platform. The application will streamline the ordering process, allowing students to browse menus, view pricing, and place orders for delivery directly to the university's main gate. The project addresses the need for a more efficient, centralized ordering system catering to the LUMS community. The project aims to improve the accessibility and convenience of obtaining food, groceries, and medicines without needing multiple apps or platforms. Having our app on the phone would give students easy access to all the daily-use items. (**Fatoki** 548).

Our projects aim to provide a one-stop shop solution to diminish the waste of time and effort in accessing the simplest things like food, groceries and medicine.

1.2. Project Scope

1.2.1. In Scope

- User registration and authentication system.
- Integration of local eateries, grocery stores, and pharmacies relevant to LUMS.
- Browsing menus, viewing pricing, and placing orders.
- Payment gateway integration for online transactions.
- Delivery tracking feature from vendors to the university's main gate.
- Additional in-app service is available to deliver orders from the main gate to hostel rooms.

- Discount coupons and promotional offers.
- Subscription model for premium services and benefits.
- User feedback and rating system.
- Admin panel for managing vendors, orders, and user data.

1.2.2. Out of Scope

- Deliveries beyond LUMS University premises.
- On-site dining or reservation functionalities.
- Direct vendor management outside of the app ecosystem.
- In-app chat or real-time communication features between users and delivery personnel.
- International payment gateway integrations.
- Advanced AI-based recommendation systems.

1.3. Project description

1.3.1. Project Goals and Objectives

The project aims to create a centralized platform for the LUMS community, offering easy access to food, medicines, and everyday essentials. It will feature a list of LUMS-exclusive eateries, particularly alumni-operated ventures, along with nearby medical and grocery stores.

This solution simplifies ordering by eliminating the need to browse multiple platforms. Users can conveniently place orders for meals, medicines, and essentials in one place, reducing time and effort. (**Fatoki** 548).

The platform addresses growing community needs by fostering alumni engagement and enhancing convenience, with initial interest from alumni businesses and student groups.

1.3.2. Business Drivers

Business Driver 1: Centralized Solution for Food, Medicines, and Essentials

- **Issue:** LUMS students face inconveniences using multiple apps to fulfil their daily needs, including ordering food, purchasing medicines, and buying groceries.
- **Impact:** Time and effort are wasted searching for different vendors and managing orders across platforms.
- **Solution:** Provide a single mobile platform consolidating all relevant eateries, grocery stores, and pharmacies.

Business Driver 2: Time-Saving and Efficient Process

- **Issue:** Managing multiple orders from different vendors is inefficient and time-consuming.
- **Impact:** Increased frustration and reduced productivity among students.
- **Solution:** Simplify the ordering process, allowing students to browse menus, place orders, and track deliveries seamlessly.

Business Driver 3: Enhanced Campus Experience

- **Issue:** Students often face inefficiencies in accessing essential services, diminishing the overall campus living experience.
- **Impact:** Increased student dissatisfaction and logistical challenges for routine needs.
- **Solution:** Provide a seamless platform that simplifies daily transactions and improves convenience for students.

Business Driver 4: Revenue and Partnership Opportunities

- **Issue:** Limited collaboration between student bodies and external vendors within campus ecosystems.
- **Impact:** Missed partnership opportunities that could benefit the institution and students.
- **Solution:** Create vendor partnerships and monetisation models (subscriptions, service fees, etc.), benefiting the app's sustainability and growth.

Business Driver 5: Alumni Engagement and Support

- **Issue:** LUMS alumni-operated businesses may struggle to gain visibility within the student community.
- **Impact:** Limited opportunities for alumni businesses to grow and connect with students.
- **Solution:** Feature and promote alumni-led eateries on the platform, fostering community ties and engagement.

1.3.3. Features

1. **In-App Credit System**

   Rationale: It allows users to add funds to their account, which they can use for purchases within the app. This provides convenience, faster transactions, and potential incentives like cashback and discounts.

   Implementation: Node.js, React UI, JazzCash API (for the functionality of adding/transferring funds)

2. **Integration of Local Eateries, Grocery Stores, and Pharmacies**

   Rationale: Provides access to vendor menus and supports student-run businesses.

   Implementation: REST API in Node.js, MongoDB for vendor data, React frontend.

3. **Order Browsing and Placement**

   Rationale: Enables efficient order selection and placement.

   Implementation: React, Express.js backend, MongoDB for product listings.

4. **Payment Gateway Integration**

   Rationale: Supports seamless online transactions.

   Implementation: Stripe/JazzCash API, Express.js backend, secure transaction handling.

5. **Delivery Tracking Feature**

   Rationale: Allows users to track orders to the main gate.

   Implementation: Google Maps API, WebSockets for live tracking, Firebase for real-time updates.

6. **Dorm Drop Facility**

   Rationale: Provides last-mile delivery to hostels.

   Implementation: Rider assignment algorithm, Firebase Firestore for delivery status updates.

7. **Discount Coupons and Promotional Offers**

   Rationale: Helps students save money.

   Implementation: Coupon management in MongoDB, discount logic in the backend, UI updates in React.

8. **Subscription Model**

   Rationale: Offers premium benefits to subscribers.

   Implementation: Stripe API for recurring payments user tier management in MongoDB.

9. **User Feedback and Rating System**

   Rationale: Allows students to review vendors.

   Implementation: MongoDB storing reviews, Express.js API for review submission, React for UI.

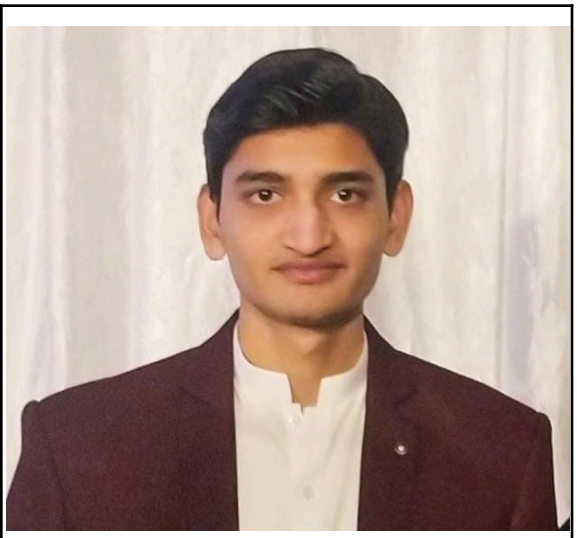
10. **AI Suggestion Model**

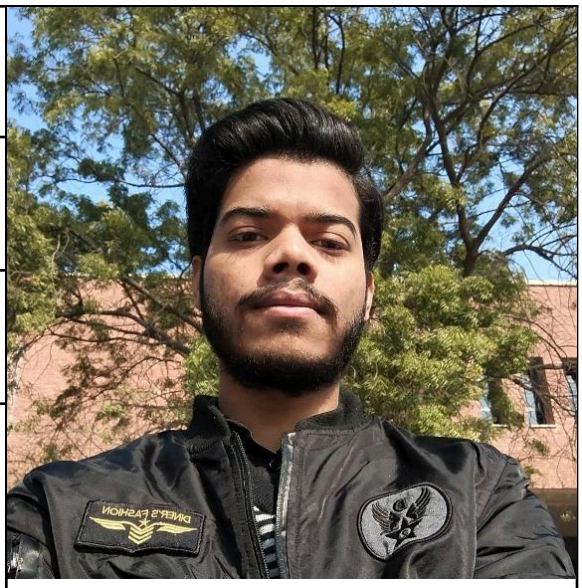
    Rationale: Assists users in deciding what to order.

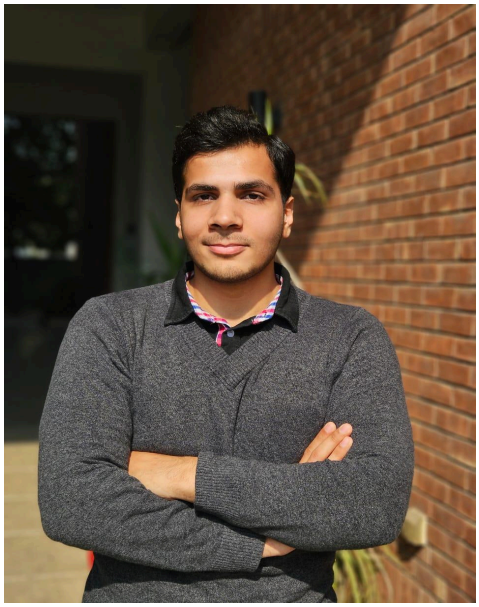
    Implementation: OpenAI API or custom ML model (Python/Flask), integrated into React frontend.

1.4. Team profile

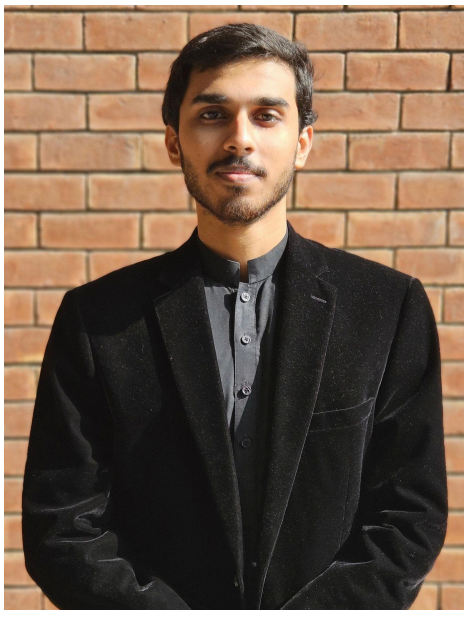
Profile cards:

Name: Choudhary Usman Alam	
ID: 26100383	
Email: 26100383@lums.edu.pk	
Interests and strengths: Presentation, Management, Design & Development, User-Centered Research.	

Name: Muneeb ur Rehman	
ID: 26100346	
Email: 26100346@lums.edu.pk	
Interests and strengths: Frontend Development, UI/UX, Team Management, API Integration.	

Name: Khuzaima Bin Gulzar	
ID: 26100377	
Email: 26100377@lums.edu.pk	
Interests and strengths: UI/UX, Presentation, Team Management, Design, Documentation, Programming	

Name: Muhammad	
ID: 26100365	
Email: 26100365@lums.edu.pk	
Interests and strengths: HTML, CSS, JS, React (in Progress), MongoDB, SQL, UI/UX.	

Name: Syed Safiullah Khalid	
ID: 26100268	
Email: 26100268@lums.edu.pk	
Interests and strengths: NextJS, React, TailwindCSS, NodeJS, MongoDB, ExpressJS, Framer Motion, Github and Presentation.	

1.4.1 Expertise in a specific tool

- Muneeb (26100346) has expertise in developing completely responsive websites using website builders like Webflow and Framer and is an expert in frontend development using native HTML, CSS, or even REACT, TAILWIND.

1.5. Assumptions and Constraints

1. Students prefer using a centralised app instead of separate apps for food and groceries. (**Fatoki** 548).
2. Local vendors (eateries and grocery stores (if applicable)) will cooperate and integrate their services with the app.
3. The app will be accessible via smartphones, with a user-friendly interface.
4. Students will be comfortable making online payments through the app (if applicable).
5. Deliveries will be made only to the LUMS main gate by default, but additional services may handle hostel deliveries.
6. Network and internet connectivity on campus are stable enough to support app operations.

Scope Constraints:

a. Deliveries beyond LUMS premises are out of scope.
b. No advanced AI-based recommendation system.
c. There are no real-time communication features between users and delivery personnel.

Technical Constraints:

d. Platform: The app will be developed only for mobile (likely Android and iOS).

e. Integration: Payment gateway must support local transaction services, excluding international gateways.
f. Performance: App response time should be optimised for high-volume usage.

Resource Constraints:

g. The limited development timeline is aligned with the academic semester.
h. Restricted budget for development and vendor partnerships.

Operational Constraints:

i. Delivery tracking is limited to routes within the LUMS campus.

1.6. Project Deliverables

Deliverables include

- Software Project Proposal
- Requirement Specifications
- Design Specifications
- Development Plan
- Test plan

- Demo + source code
- Final document
- Final presentations (showcase)

2.0 Project Organization

We approached several students from different residence models (hostelites or day scholars) to understand the need for such an app. Name of some such students are listed below:

- Muhammad Zain Naseer (student, hostelite)
- Faizan Hassan (student, day scholar)

Also, we talked to a vendor near Lums about integrating his service into our system. The vendor is a sweets bakery in DHA phase 7. A follow-up meeting will be held better to understand the vendor's expectations from the app. The details of the vendor are as follows:

- **Sweet Moments** by Muhammad Rohan Sakrani

We will also contact other vendors near LUMS to get them on board with our app. Understanding a vendor's business model is necessary to get their service on board, for which successive meetings and interviews will be held.

3.0 References

- Fatoki, Olawale. "University Students' Intention to Use Mobile Technology for Grocery Shopping: An Application of Technology Acceptance Model." Academy of Strategic Management Journal, vol. 19, no. 3, 2020, p. 548.

4.0 Definitions

Word	Meaning
Admin panel	a centralised interface that allows administrators to manage and control an application.
Payment gateway	a service that enables businesses to accept payments from customers

Check the next page for the Marking Rubric.

Marking Rubric

Total marks: 45

Component	Marks
Purpose	5
Project Scope	2+2 (in scope + out of scope)
Project Goals and Objectives	5
Business Drivers	5
Features	10
Assumptions and Constraints	2
References, Definitions, Profile and Project Organization	4
Concise and to-the-point descriptions	5
Writing Quality (Descriptions should be coherent and should cover all questions asked under the heading)	3
Following the format (as mentioned under business	2

drivers, features, team profiles and definitions)	