Islamic University of Technology

Department of Computer Science and Engineering

CSE 4408 : System Analysis & Design

Lab 3

UNDERSTANDING AND MODELING ORGANIZATIONAL SYSTEMS

Group Members

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Problem Statement

Students at various universities currently rely on fragmented tools like social media groups, posters, and word-of-mouth to buy, sell, rent, or find items. These informal systems result in communication gaps, pricing inconsistency, trust issues, and limited access to creative or service-oriented opportunities. There is no unified digital platform that securely supports campus-based transactions, item recovery, or service promotion.

Our project, IUT_Banijjo proposes the development of a centralized Campus Trading System that allows students, landlords, and clubs to interact through a structured, verified, and easy-to-use website. The platform will support features such as smart price suggestions, payment integration, multilingual support, and feedback system that will empower users to trade confidently and efficiently.

Key Issues

- Fragmented communication across multiple unofficial platforms

- Lack of a trusted environment for buying, selling, or renting

- No digital system for lost-and-found reporting

- Limited opportunity to showcase student creativity or club initiatives

- No AI or analytics support for fair price comparison

- Difficulty finding roommates or campus housing

Project Objectives

- Develop a unified platform for trading, renting, and service listings

- Implement verified user roles (students, landlords, club reps)

- Provide AI-based smart pricing suggestions

- Introduce a digital lost-and-found and roommate search module

- Support creative showcases and club requests

- Enable secure transactions through integrated payment gateways (bKash, IUT Wallet)

High-Level Requirements

- Role-based login (students, landlords, clubs, admins)

- Product listing modules (resale, rental, recoverable items, creative posts)

- Smart price comparison tool using AI/ML

- Payment gateway integration with receipts and logs

- Multilingual support (English, Arabic, French)

- Feedback and rating system

- Subscription-based listing promotions

- Admin dashboard for content moderation and analytics

Constraints

- Limited budget for student-led project (~BDT 100,000–BDT 120,000)

- Possible resistance from non-digital users (landlords, older users)

- Technical complexity in integrating AI, payments, and multilingual tools

- Timeline pressure due to academic schedules

Project Justification

1. Management Backing:

The project has informal support from faculty advisors and aligns with IUT's student entrepreneurship and innovation goals.

2. Appropriate Timing:

With increased smartphone use and mobile payment adoption, now is the ideal time to replace outdated campus trade systems with a digital solution.

3. Strategic Goal Alignment:

The system promotes digitization, efficiency, collaboration, and entrepreneurship which are the key priorities for modern campus life.

4. Practicality:

The student team possesses the necessary technical skills (React, Django, Firebase, API integration), and cloud tools are readily available within budget.

5. Worthwhile Investment:

The system delivers long-term value in terms of student satisfaction, campus engagement, and scalability to other universities, justifying its cost and development effort.

Preliminary Feasibility Assessment (TEO)

High-Level Budget Outline:

Category	Description	Estimated Cost
Project Team Time	4–5 student developers(3 months)	BDT 30,000/month
Domain & Hosting	com/.org domain (~BDT 1,500/year) + Shared/VPS hosting (Firebase, Render, or local VPS)	BDT 3,500 – 5,000/year
Development Tools & APIs	Firebase (free tier or up to BDT 1,500), bKash integration, Google Translate API, libraries	BDT 2,000 – 3,000
UI/UX Design	Figma, Bootstrap, icons, custom assets (mostly free/open-source)	BDT 0 – 1,500
Promotion & Awareness	Leaflets, orientation banners, digital ads (Facebook boosting, etc.)	BDT 3,000 – 5,000
Maintenance & Updates	Minor updates, bug fixes for 6 months (time-based, handled by team)	In-house (no additional cost)

Table-01: Budget Outline

This is the largest cost if we hire one student developer at BDT 30,000/month, that totals BDT 90,000 over 3 months. For more developers (e.g., frontend + backend), multiply accordingly.

A domain name (.com or .org) typically costs around BDT 1,500/year. Hosting services (like Firebase, Render, or a local VPS provider) range from BDT 2,000 - 3,500/year depending on traffic and storage needs. This ensures the site is live, secure, and scalable.

 Development Tools & APIs – BDT 2,000 – 3,000

This includes integration costs for services like:

- bKash payment gateway (if using premium SDKs)
- Google Translate API for multilingual support

- Other third-party libraries or AI tools used for pricing suggestions

 UI/UX Design – BDT 0 - 1,500

Most design work will be done using free tools like Figma, Canva, or Bootstrap. However, minor expenses might occur if premium icons, fonts, or templates are used

Promotion & Awareness – BDT 3,000 - 5,000

This includes expenses for designing and printing posters/leaflets, running basic facebook boost ads or campus-wide awareness campaigns. These efforts will be critical for onboarding users and encouraging adoption in the early stages.

While bug fixes and updates require effort, these will be handled by the same student team as part of their ongoing involvement, so no external cost is allocated. Time commitment remains a consideration.