AUTOMATED CAMPUS FLOW

Hamid Khan(23PWBCS0967), Abdullah (23PWBCS0997), Motasim Billah (23PWBCS0989), Muhammad Shaheer-Ul-Islam(23PWBCS1007),
Department of Computer Science, UET PESHAWAR
Email: 23pwbcs0967@uetpeshawar.edu.pk , 23pwbcs0997@uetpeshawar.edu.pk ,
23pwbcs0989@uetpeshawar.edu.pk , 23pwbcs1007@uetpeshawar.edu.pk .

Abstract

This project aims to develop a centralized and automated system named Automated Campus Flow to streamline the management of university classes, rooms, and schedules. Currently, universities rely on manual or static systems, leading to errors, double-booking, and student confusion about class locations. The proposed solution will utilize a mobile-first platform (developed with Flutter Flow and Firebase) to provide real-time visibility of room/lab status, integrate scheduling features for faculty, and offer easy access to personalized timetables for students. The expected outcomes are minimized confusion, improved resource utilization, and a more efficient administrative process across the university campus.

1. Introduction

Efficient resource and schedule management is critical for the smooth operation of any large educational institution. Manual or fragmented scheduling systems often result in significant operational friction, including last-minute location changes, the inability of faculty to quickly book available spaces, and students wasting time locating their assigned rooms or labs. The shift towards dynamic, real-time management is necessary to leverage modern software engineering practices and enhance the overall campus experience.

2. Feasibility Analysis

2.1 Technical Feasibility

The system will be developed entirely using **Flutter Flow** for both the frontend and backend, with **Firebase** serving as the database.
No additional hardware is required, as the solution is fully software-based.
Open-source tools will be utilized to minimize costs, making the project technically feasible.
Conclusion: Technically feasible.

2.2 Economic Feasibility

Estimated cost: PKR 70000 (development, training, maintenance).
Benefits: Saves teachers' and student's time, improves accuracy, reduces paperwork, enhances record-keeping.
Conclusion: Economically feasible.

2.3 Operational Feasibility

Teachers and students are familiar with mobile applications. Minimal training is required.
The system will be user-friendly and accessible on all kind of mobile (such as Cell phones and Tablets) devices.
Conclusion: Operationally feasible.

2.4 Schedule Feasibility

Proposed project duration: 3 months.
- Requirement analysis: 15 days
- Design and development: 2 months
- Testing and deployment: 15 months
The timeline is realistic given available resources.
Conclusion: Schedule feasible.

2.5 Legal Feasibility

Our project will help students to locate their classroom across the campus, furthermore it will also help teachers to manage re-scheduled or missed lectures.

The University had no such software before, it will be revolutionary.
No legal restrictions identified.
Conclusion: Legally feasible.

3. Results and Discussion

The analysis shows that the proposed Automated Campus Flow is feasible across all five dimensions. But still

Key challenges include integrating real-time data with existing systems and ensuring smooth scalability.
Security, access control, and dynamic conflict resolution can be complex.
User adoption, reliability, and maintenance are crucial for long-term success.

4. Conclusion

Based on the feasibility analysis, the Automated Campus Flow is feasible and recommended for development. It will save time, reduce errors, and provide long-term benefits to the university.