Sarthi - Project Report

1   Introduction

Sarthi — IIITG Campus Connect — is a centralised web platform designed exclusively for the IIIT Guwahati community. The campus currently relies on scattered WhatsApp groups for tasks such as ride-sharing, buy/sell activities, and lost-and-found announcements. These unstructured channels lead to miscommunication and inefficiency.

The proposed system provides a secure, authenticated, and organised digital platform with three core services: Ride Sharing, Marketplace, and Lost & Found. Access is strictly limited to authenticated IIITG email accounts.

2   Description

User Types

- **Students**: Can access all services and update profile details such as name, phone, department, program, year, bio, and Google OAuth ID.

- **Faculty**: Can use core services and update profile details (name, phone, department, bio, Google OAuth ID).

- **Staff**

Ride Sharing

Users can post rides (name, destination, date, price, seats). Others may request to join. If accepted, real-time chat is enabled using Socket.IO.

Marketplace

Allows users to post items for sale (name, description). Buyers contact sellers via email through the Buy/Negotiate button.

Lost & Found

Provides a Join WhatsApp button linking to the existing campus lost/found group.

3   Architectural Style

The system uses Microservices Architecture for modularity, scalability, and independent deployment. Components include:

- Frontend: React.js

- Backend: Node.js + Express.js

- Database: MongoDB

- Real-time messaging: Socket.IO

- Authentication: Google OAuth 2.0 (restricted to @iiitg.ac.in)

- Deployment: Docker, Render

4 GitHub Link

https://github.com/ringerH/IIITG_sarthi

5 Observations

Strengths

- Secure authentication and access control

- Modular microservices architecture

- Real-time messaging in ride sharing

- Well-defined documentation

Improvements

- Marketplace can include integrated chat in future

- Notification system may enhance user experience

- Lost & Found can evolve into a full internal module

6 Conclusion

Sarthi is a scalable, secure, and effective solution for IIITG campus communication and resource sharing, addressing real challenges with modern architecture and future expansion capabilities.