

Sarhi - Project Report

1 Introduction

Sarhi — 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, avatar, and Google OAuth ID.
- **Faculty:** Can use core services and update profile details (name, phone, department, bio, avatar, Google OAuth ID).
- **Staff:** Roles include Office Assistant, Urbanisation, System, Finance Officer, Maintenance Staff, and Placement Officer.

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, image). 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: Localhost initially; can scale to AWS/Docker.

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.