Project Proposal

IITJ INSTI APP

- Full Name: Nupur Joshi
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- Short Bio/Overview : I'm a first year electrical engineering student at IIT-Jodhpur. I started coding in the first semester of college. I've learnt C language through the college coursework and a few other online resources. I have a keen interest in coding and want to enhance my skills in practical applications of coding like front end development etc.
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- Why are you interested in working on this project?
  I am eager to understand more about aspects of web development like user experience and system architecture. I would like to add a web development related project to the resume. It would be a great opportunity for me to explore open source and enhance my knowledge of modern technologies like React JS, Next JS, Flutter.

Project Understanding

➔ **What problem the project solves and who faces that problem?**

This project solves the basic problem of fragmented access to campus information faced by students. Presently , students may need to go through multiple sources of information for daily essentials such as mess menus, timetables, bus schedules, event details, and campus maps. This scattered approach leads to inefficiencies, confusion as well as missing on essential information related to campus activities. List of problems:

1. **Fragmented Access to Campus information**: Students struggle to find vital campus information from multiple sources which can be confusing and time-consuming . This can result in students missing important updates.
2. **Lack of Centralized Communication System**: Campus clubs and events have limited or no reach to a centralized communication system making it difficult for students to stay informed and get involved.
3. **Limited Student Support**: Services like mental health support, and lost-and-found systems are often scattered, reducing the efficacy of such student help systems and compromising student well-being on campus.

➔ **What do you plan to do with the project (list of features, user flow)?**

List of features:

1. **Mess menu:** a dynamic view of everyday menu which mentions breakfast, lunch, and dinner options, including the dietary preferences. Will allow users to view their personalized menu by applying filters based on food preferences or allergies.
2. **Time table:** easy to navigate time table which allows students to see their upcoming classes, events, fests etc. Can incorporate colour coding to help differentiate between academics and events, fests. Can include sync with personal calendars in Google calendar so that reminders are automatically added.
3. **Bus schedules:** bus timings for different routes are clearly mentioned. Different schedules for weekends and weekdays are clearly shown. Last minute updates are included and students are notified accordingly.
4. **Fest/events details:** calendar of events, cultural fest, workshops etc. each page has time,location,fees(if any) and eligibility criteria for every event. Students can register to events through the links provided and get reminders for the same.
5. **Institute (2.5 D) map:** an interactive map of the institute specifying the fastest route to reach a certain location. Students can zoom in and out to view details of specific buildings etc.
6. **Gamified engagements:** this will give students an incentive in terms of points to attend events,workshops etc. Students will earn points on participation in clubs, events, etc. A leaderboard will display the top participants as well.
7. **Notifications system in the app:** this is a system to send reminders to students regarding events, timetable changes etc. Students can personalise their notification preferences for events, academic reminders etc.

➔ **What is your tentative timeline for the progress of the project?**

Week 1: Setup & Planning

➔ Define the project scope, create the basic structure for web (React.js, Next.js) and mobile (Flutter).
➔ Start UI design and project structure setup.

Week 2-3: UI Development

➔ Design and implement the UI for core features (mess menus, timetables).

Week 4: Bus Schedules & Map Features

➔ Develop bus schedule integration and a 2.5D interactive campus map.
➔ Test the map and bus schedule features on web and mobile.

Week 5: Gamification & Communication

➔ Implement gamification features (leaderboards, rewards).
➔ Set up communication tools (news/events notifications).

Week 6: Testing & Final Integration

➔ Conduct testing, fix bugs, and optimize features.
➔ Prepare for deployment.

➔ **Any open source alternatives to the project?**

- Fedena
- OpenSIS
- Leaflet & OpenStreetMap
- Attendize

Technical Understanding

- **Suggest some tech stack options which you think we can use in this project?**

1. MERN Stack (MongoDB, Express.js, React.js, Node.js)

MERN advantages: Great for building dynamic, responsive websites and mobile apps that need to handle a lot of data and interactions.

2. LAMP Stack (Linux, Apache, MySQL, PHP)

LAMP advantages: This stack is widely used, reliable, and great for handling web applications with structured data (like mess menus and schedules).

- **Which components of the tech stack do you know about?**

I don't have any prior experience with the specific components of the tech stack for this project, but I am eager to learn. I'm motivated to put in the effort to understand how these technologies work. I'm looking forward to learning from the team and gaining hands-on experience throughout this project.

Time Commitment

How much time (in hours per week) will you be able to commit to this project? Also mention any time phases when you will have other commitments (for example, end sems) and cannot devote the same time compared to your regular schedule.

I will be able to commit 12-14 hrs per week. This time commitment may reduce during end sems and mid sems.