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TransportEase is a web-based application designed to address inefficient route management and lack of real-time communication issues faced by small transport service providers. The idea was sparked by operational inefficiencies in small-scale services like school vans, community shuttles, and private employee transport companies. These providers often rely on outdated, manual systems, leading to issues like miscommunication, delays, disorganized passenger lists, and no tracking of daily attendance. The lack of a centralized digital system results in wasted time, frustration, safety concerns, and poor service delivery. TransportEase provides a lightweight, cost-effective, and user-friendly platform to improve reliability and manage daily activities for these small to mid-sized operations.

Small and medium-scale transportation providers often operate without any formal technology systems. In places like private school transport services, employee shuttle vans, or neighborhood rideshare setups, most communication and coordination is done manually or via informal channels like phone calls or group texts. This leads to missed pickups, route inefficiencies, and poor customer experience. For instance, if a school van is delayed due to traffic, parents have no way to know unless the driver calls each one individually. Similarly, drivers don’t have access to organized route management or live tracking of attendance. Routes are often optimized by memory or basic maps, and there’s no automated way to track student pick-up/drop-off confirmation. With TransportEase, we aim to digitize this outdated system. By providing transport managers with a web dashboard to assign passengers to routes, mark pick-up/drop-off statuses, and notify passengers or parents of any changes, we increase efficiency and reliability. In the same platform, passengers (or parents) can log in to check scheduled pick-up times, receive notifications, and view historical records of rides. This technology-driven approach not only solves logistical issues but also enhances safety, transparency, and time management for all parties involved.

To make this happen, we will follow a full software development process that mirrors what professional software companies do. We will follow a software development process similar to professional software companies, starting with the creation of necessary documentation, including a Software Requirements Specification document outlining system features like user login, route creation, passenger assignment, real-time notifications, and attendance tracking. We will write simple user examples to show what each person using the system needs, like “As a driver, I want to check off each pick-up and drop-off,” or “As a parent, I want to get a message if the van is delayed.” We’ll also create basic screen designs using tools like Figma to show what the website will look like. A chart called an ERD will help us organize how the database stores users, routes, trips, and messages. We’ll also make a system diagram that shows how the front of the website, the backend, and the database work together, including how emails or text alerts are sent.

Our Capstone team comprises four members with distinct skills in programming, IT, and project organization. They are assigned tasks based on their skills and interests to ensure fair work distribution and efficient project management. This approach ensures everyone contributes to both planning and technical aspects, facilitating smooth collaboration for the successful completion of TransportEase. Ismail Elabdouni is the project manager who will be responsible for maintaining the project's timeline, leading meetings, taking notes, assigning tasks, writing documentation, organizing files in the GitHub repository, and handling milestone presentations. He will also lead the testing phase, ensuring all features are working correctly before the final demo. This includes manual testing and using tools like Postman or Jest to test API functions. Ismail role is crucial in ensuring the project runs smoothly and delivers a reliable product. Luis Pereira will manage and organize important information in a system using JavaScript. He will ensure that the system knows who a user is and what they can do when they log in. He will also set up the system to send messages or alerts when there are delays or changes. He will work closely with the website designer to ensure that all necessary information is safe, organized, and ready for use. Nicholas Camis is the front-end developer who will design and code the user interface for admins, drivers, and passengers using HTML, CSS, JavaScript, and React.js. Also, He will create wireframes and mockups, create dynamic components, handle form validation, navigation, and connect with backend APIs. They will collaborate with testers and backend developers to improve user experience and make the design accessible on desktop and mobile devices. Yassir Benbrahim is responsible for integrating the frontend, backend, and database into a fully functional system, ensuring it runs correctly on local machines before deployment. Also, manage hosting the final product using platforms like Render or Heroku, write deployment scripts, configure environment variables, troubleshoot server issues, set up the GitHub repository, and support teammates by testing features and reviewing code.

The Capstone project, TransportEase, aims to improve small transportation services by creating a web-based system that allows them to manage routes, track pick-ups and drop-offs, and send real-time updates. The project combines planning, programming, IT infrastructure, testing, and project management skills. Each team member was assigned a role, with one working as Project Manager and Tester, another as Backend Developer, a Frontend Developer, and an Integrator and DevOps Coordinator. The project was managed professionally using tools like GitHub, Trello, Microsoft Project, and documents. TransportEase is not just a project, but a real solution that demonstrates how technology can solve practical problems and the potential of a group of students.