

## Problem Overview

Jeepneys are one of the most convenient, common, and affordable modes of public transportation in the Philippines. However, for many commuters especially tourists, new residents, and even long-time locals; navigating the complex and often undocumented network of jeepney routes can be challenging. Unlike buses or trains, jeepney routes are not always available on mainstream navigation platforms like Google Maps. As a result, people often rely on trial and error, word of mouth, and reliance on more expensive alternatives like taxis, leading to inconvenience, confusion, and inefficiencies in daily travel.

The absence of digital tools dedicated to mapping jeepney routes has made the problem worse, especially in urban areas like Davao City where traffic and route changes occur frequently. While some apps and websites provide data, they are often incomplete or outdated. Without reliable and user-friendly platform to navigate these routes, commuters waste time, energy, and money. This gap in transportation accessibility highlights the need for a practical and modern solution to improve daily commute experience for Filipinos.

## Solving the Problem

The app aims to solve this issue by providing an interactive platform where users can search jeepney routes based on their origin and destination. It will serve as a centralized platform that maps out jeepney routes across cities. It will feature an interactive map that allows users to search routes by entering their origin and destination. The app will then provide detailed results, including estimated fares, stopovers, and transfer points. The platform also includes user feedback where users can suggest routes and improvements. By offering a reliable, educational, and accessible tool for commuting, the app will make jeepney travel more efficient, safer, and user friendly, ultimately enhancing public transport for everyone.

## The Application

**Application Name:** RutaKnows

**What It Is:** RutaKnows is a Jeepney route app is designed to help commuters easily navigate the complex network of jeepney routes in the Philippines. It allows users to search for routes and estimate fares. The app aims to make commuting by jeepney easier, especially for those unfamiliar with local routes.

**Features:** The features of this app are the following:

- **Route Finder** – Allows users to input origin and destination to find the most efficient jeepney route.
- **Fare Estimator** – Calculate the fare for each route.
- **Multi-route Suggestions** – Shows alternative routes with fewer transfers of shorter time.
- **Community Feedback** – Allows users to report route changes or issues.

## About the Application

**Target Users** – The target users of this application focus on daily commuters such as students and workers, new residents and tourists.

### Characteristics of the Task Performed by Users

- Searching for available jeepney routes between two locations
- Estimating fare
- Identifying transfer points
- Reporting issues or giving feedback

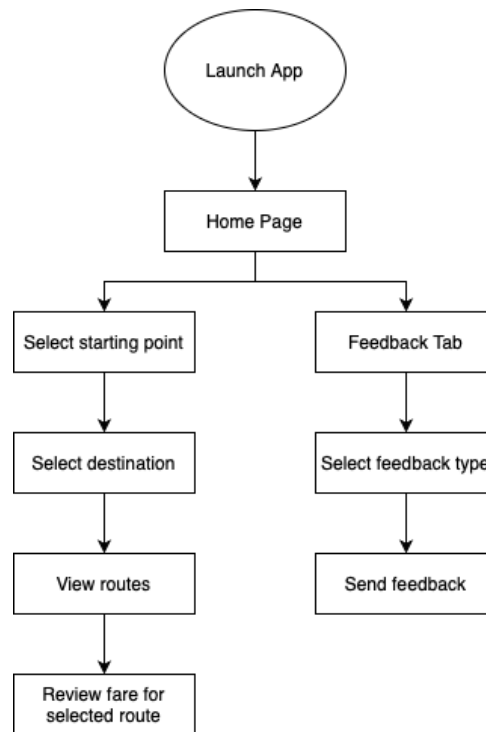
### Important Characteristics of the Task Environment

- Users may access the app on the go, requiring a responsive and lightweight interface.
- Route data must be accurate and regularly updated.
- Jeepney routes may change due to rerouting, road closures, and new transport policies.

## Structured Task Analysis

- Task: Set start point and ending destination
  1. Open the app.
  2. Select your start point.
  3. Select your destination.
- Task: View possible routes and fare
  1. Confirm your starting point and your destination.
  2. View the routes and/or necessary ride transfers.
  3. Review the fare generated from the routes selected.
- Task: Suggest routes/other feedback
  1. Navigate to the “Feedback” tab.
  2. Select whether it is a suggestion for routes or other feedback.
  3. Send the feedback.

## System Flowchart



## Analysis of Existing Systems

Navigating with popular apps like Google Maps or Apple Maps can be frustrating when traveling by jeepney. While Google Maps does include some jeepney routes, they're often inefficient, suggesting unnecessary transfers that cost extra time and money. Apple Maps offers similar suggestions, sometimes even less practical than Google's options. Both apps prioritize car and motorcycle routes, leaving jeepney commuters without reliable navigation assistance.

## Description of the Larger Social and Technical System

The proposed jeepney route information system for Davao City will operate within a complex ecosystem of existing social practices, cultural norms, and technical infrastructure. Understanding this broader context is crucial for developing a solution that integrates seamlessly and creates meaningful impact.

## Social

In Filipino culture, jeepneys stand for more than just transportation; they are symbols of community life, business, and national identity. An unspoken social culture between drivers and passengers is built by the "first come, first served" boarding policy and flexible stopping procedures. Unlike other transportation systems, traditional hand signals and vocal communication between drivers and passengers produce a distinctive interaction pattern.

Informal networks are used by jeepney drivers to exchange information on traffic, police checkpoints, and passenger demand.

### **Technical**

Davao City's mobile network coverage varies greatly, with urban areas having better access than remote areas. Approximately 92% of potential users own smartphones, but with varying capabilities (storage capacity or processing, etc.). Although there are public WiFi projects in several terminals and large public areas, their reliability is not very good. Prepaid packages are the most common subscription type, and data costs continue to be a major factor for many customers.

Understanding this sociotechnical landscape reveals that an effective solution must not merely provide accurate route information but must also respect established social practices, operate within technical constraints, and integrate with existing cultural patterns of transportation and information exchange.

### **Discussion of Implications**

The group found out that interaction with the jeepney operators and local knowledge are crucial components of modern information-seeking in the context of jeepney commuting. Our design should enhance and supplement this system rather than try to replace it completely. This calls for adding functions that integrate local knowledge, verify information, and digitize collective wisdom through user contributions. Instead of trying to completely abandon long-standing customs, the system should work as a link between digital convenience and conventional information sources.

The wide variation in technical literacy among potential users also creates fundamental tension between leveraging advanced capabilities such as real-time updates and location tracking. This implies a need for ease of use especially in the interface, allowing users to access core functionality with minimal technical knowledge as the system can be used when the users are commuting, which can be hectic.