**Project Description**

RutaKnows is a user-friendly digital platform designed to help commuters navigate the often confusing and undocumented jeepney routes in the Philippines, particularly in urban areas like Davao City. As jeepneys remain a vital and affordable mode of transportation, the lack of accurate and accessible route information leads to daily inconvenience, especially for tourists, new residents, and even locals. Unlike mainstream navigation apps that rarely include jeepney data, RutaKnows offers a centralized and updated solution that maps out routes clearly, helping users save time, avoid confusion, and make more informed commuting decisions.

**Requirements Summary**

| | | |
|---|---|---|
| **Minimum Requirements** | Processor Cores | Dual-Core |
| | OS | Android 5.0 (Lollipop)<br>iOS: 11.0 |
| | RAM | 2 GB |
| **Recommended Requirements** | Processor Cores | Quad-Core |
| | OS | Android 8.0 (Oreo) or Higher<br>iOS: 13.0 or Higher |
| | RAM | 4GB |
| **Other Requirements** | Permissions | Location, Internet |

*Table 1. System Requirements*

**Prototype Description**

The table above presents the minimum and recommended system requirements for using RutaKnows on both Android and iOS devices. It details the necessary specifications such as processor type, operating system version, RAM, and connectivity to ensure the app runs properly. The minimum requirements allow users with older smartphones to access the basic features of the app, while the recommended requirements offer a smoother and more responsive user experience on newer devices. Additionally, the app requires permissions such as internet access, location services, and notification access to provide accurate route data and real-time updates.

**Figma Link**

RutaKnows Figma Link

**User Scenario**

Maria is a first-year college student who recently moved to Davao City for her studies. She is unfamiliar with the local jeepney routes and often gets confused about which jeepney to ride when commuting from her dorm to campus or visiting nearby malls. One morning, she needs to go to a government office in a part of the city she's never been to before.

Instead of asking around or guessing which jeepney to take, Maria opens the RutaKnows app on her phone. She enters her current location and desired destination. The app quickly provides a list of possible jeepney routes, estimated travel time, fare, and the location of the nearest pickup point. It even alerts her when she's nearing her stop.

Thanks to RutaKnows, Maria arrives at her destination on time, without stress or confusion. She continues using the app daily, finding it a reliable companion for navigating the city more confidently and efficiently.

**RutaKnows Mock-up/Prototype**

Loading Screen - Displays the RutaKnows logo while the app loads data and user preferences.

Dashboard - The main screen where users can search routes, view the map, and access key features.


*Figure 1. RutaKnows Loading Screen and Dashboard*

Jeepney Route Suggestion - Suggests the best jeepney routes based on the user's origin and destination.

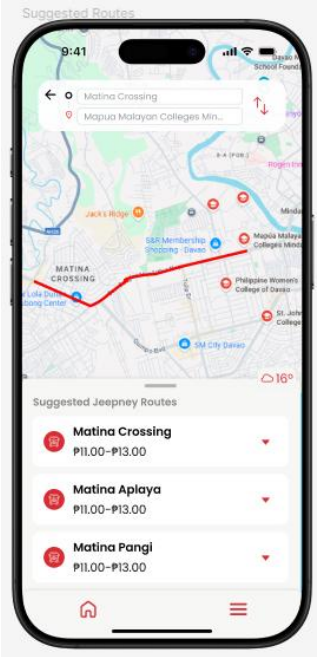


*Figure 2. Jeepney Selection*

Menu - Provides access to settings, saved routes, FAQs, and a feedback form to help users personalize their experience and get support.

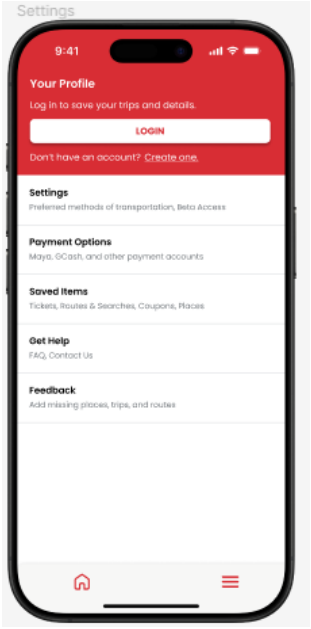


*Figure 3. Menu*

**Rationale**

RutaKnows prototype was chosen for its potential to bridge a critical gap in the Philippine public transport system—jeepney route navigation. It aligns with the core goals of accessibility, simplicity, and real-time route assistance, particularly for new residents, tourists, and commuters unfamiliar with existing jeepney networks. Unlike complex transport apps, RutaKnows uses a minimal and intuitive interface, tailored for users with varying levels of tech familiarity. By providing clear route options and fare estimates, the app minimizes confusion and maximizes commuter efficiency.

**Advantages:**

- Designed for commuters of all ages and tech skill levels
- Provides visual route maps and fare info
- Works on both Android and iOS with minimal hardware requirements
- Clean, map-based UI with accessible design for clarity
- Promotes more affordable and informed public transport use

**Disadvantages:**

- Depends on stable internet for route fetching and updates
- Jeepney route data must be frequently updated to reflect traffic/reroutes
- Limited offline functionality in areas with no signal

Despite these limitations, RutaKnows effectively meets usability and functionality requirements for its target audience, providing a meaningful solution to an everyday commuter problem.

**Changes to the Requirements**

There were no major changes in core requirements, but usability adjustments were made based on user-centered design principles and heuristic feedback. The original prototype had multiple features like bookmarks, favorite routes, and transport reviews. These were streamlined to focus on the most critical functions: route search and fare estimate.

**Initial Evaluation Plan**

Due to academic scheduling constraints and the remote nature of the project, user testing will be conducted online through platforms like Microsoft Teams, Discord, or Messenger. The team will schedule guided sessions where participants share their screen while performing tasks using the prototype.

Evaluation techniques to be used:

1. **Usability Specifications** – Measure efficiency (time), effectiveness (accuracy), and satisfaction (rating).
2. **Heuristic Evaluation** – Apply Nielsen's 10 Usability Heuristics to identify UI issues.
3. **System Usability Scale (SUS)** – Collect standardized user feedback and interpret usability scores.

**Population**

The testing group will include 10 individuals:

- 5 new city residents or students unfamiliar with jeepney routes
- 5 frequent commuters (locals) who rely on public transport daily

These users will perform common commuting tasks within the app. Their feedback will help assess how effectively RutaKnows supports both novice and experienced users in navigating the jeepney system.

**Prototype Tasks**

- Task: Set origin and destination
    1. Open the app.
    2. Select your origin.
    3. Select your destination.
- Task: View possible jeepney routes and estimated 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.

**Roles**

| Developer/UI Designer | Task(s) |
|---|---|
| Anikka Francine Cabania | Oversees project timeline, assigns tasks, ensures goals are met |
| Keian Renheart Mar | Creates wireframes, user flow, interface layouts, and interactive mockups |
| Jasper Nikko Navarez | Distributes surveys, collects feedback, and analyzes usability results |

**Heuristic Evaluation**

RutaKnows is evaluated as follows:

1. **Visibility of System Status:**
   The app shows clear loading indicators, live map updates, and status messages when fetching routes.
2. **Match Between System and Real World:**
   Uses everyday terms like “Route,” “Pickup Point,” and “Fare,” avoiding technical jargon.
3. **User Control and Freedom:**
   Users can easily go back, clear searches, and cancel route plans without penalty.
4. **Consistency and Standards:**
   UI elements follow Android/iOS standards. Icons and interactions are consistent across all screens.
5. **Error Prevention:**
   Auto-suggestions and dropdowns reduce typing errors during route search.
6. **Recognition Rather than Recall:**
   Past search history and favorites are saved, reducing the need to remember previous input.
7. **Flexibility and Efficiency of Use:**
   Users can switch between map and list view depending on preference. Dark mode is also available.
8. **Aesthetic and Minimalist Design:**
   The interface is clean and focuses only on essential route details and actions.
9. **Help Users Recognize and Recover from Errors:**
   Clear error messages like “Route not found” are provided with suggestions for alternative actions.

10. **Help and Documentation:**
    A Help section includes tutorials, FAQs, and quick tips for using the app effectively.

**Participant Survey and Feedback**

Participants will complete the System Usability Scale (SUS) survey after testing. The SUS consists of 10 statements rated from 1 (Strongly Disagree) to 5 (Strongly Agree). The scores will be calculated and interpreted using the following:

SUS Calculation**:**

- For odd-numbered questions: Subtract 1 from the response.
- For even-numbered questions: Subtract the response from 5.
- Add the total, then multiply by 2.5 to get the final score out of 100.

**SUS Score Interpretation**

| Score | Interpretation | Grade |
|---|---|---|
| 80.3 or above | Excellent Usability | A |
| 68 | Acceptable Usability | C |
| Below 51 | Poor Usability | F |

**RutaKnows Survey Questions**

Scale: 1 – Strongly Disagree | 2 – Disagree | 3 – Neutral | 4 – Agree | 5 – Strongly Agree

1. The app made it easy for me to find jeepney routes I wasn't familiar with.
2. The visual layout of the app helped me understand the route suggestions clearly.
3. I was able to navigate through the app without needing instructions.
4. I found the estimated fare and travel time features helpful.
5. The map and route indicators were accurate and easy to follow.
6. I felt that the app provided reliable information for commuting.
7. I would recommend RutaKnows to other commuters or new city residents.
8. The app helped reduce the time I usually spend figuring out which jeepney to take.
9. I found the menu options (e.g., Settings, Help, Feedback) accessible and useful.
10. Overall, I had a smooth and satisfying experience using RutaKnows.