

Introduction

Hello everyone, we are Group 7, I am Dave and together with me are Ash, Jonathan and Jun Heng, and we will be presenting our application **TransitEase**.

"Let's talk about *TransitEase* and its purpose.

Our *Aim* is straightforward but impactful. By providing a real-time solution to locate available parking, *TransitEase* aims to reduce urban congestion, fuel waste, and emissions. With fewer cars circling to find parking, we can promote smoother mobility and contribute to reducing environmental impacts in busy urban areas.

Our *Vision* is to simplify the parking process entirely. *TransitEase* empowers users to find available spaces in real time, helping them save time and avoid frustration. Ultimately, this solution not only benefits individual users but also helps reduce overall city congestion, making urban living more efficient for everyone."

"Let's take a look at our solution overview for *TransitEase*. This app is designed to empower users by giving them instant access to real-time parking availability. With this information at their fingertips, users can make smarter parking decisions, saving time and reducing congestion.

Now, onto our unique selling points. First, *TransitEase* provides real-time parking availability, allowing users to see open spots as they become available. It also includes indicators for both car and motorcycle lots, catering to a wide range of users. Finally, the app features a user-friendly interface with both map and list views, making navigation easy and intuitive.

With *TransitEase*, finding parking is quicker, easier, and more efficient."

~~(Change Screen to our Lab 3)~~

Lab 3 Document

-Use-Case Diagram (Go to Use Case Diagram)

The class diagram for TransitEase shows the interaction between users, APIs, and Firebase for managing parking solutions. The user can perform actions such as querying car parks through APIs, setting preferences, and managing accounts. The URACarparkAPI and OpenMapsAPI facilitate specific query features like price, availability, distance, and EV charging options. Firebase provides backend support through Authentication and Firestore Database to handle account creation, login, bug reporting, and settings. Each action or feature is represented as an individual function or module, with "include" and "extend" relationships indicating dependencies

and extensions within the system. This setup enables a seamless, feature-rich user experience.

~~(Slowly scroll through the use case tables)~~

~~Below our use case diagram we illustrated each use case using a use case table. As you can see we have "login with email", "login with google" etc. Obviously not all of them are here because this is for illustration purposes.~~

-Design (Go to Class Diagram)

Following our Use-Case diagram we made a class diagram to illustrate all the classes we would use in our app. Each use case directly linked to the user has an interface and corresponding control entity.

Following that we have a System Architecture to show us which classes are boundary classes, control classes or entity classes.

We also have a dialog map to illustrate every possible state of the application and what triggers each state.

Lastly is a bunch of sequence diagrams as a reference to how each use case should be carried out in code. Again this is for illustration purposes not all of them are here.

Moving on we will now show you our application and all its key functions.

(Switch to app)

Login

When you open our application you will be directed to the login page. Here you can access the **login system** as well as the **registration system**.

You can access the registration page by clicking the register button below and **register through your email address**

(Create a new account) Enter your email address here, and your password here. Then click this button below.

Once you're done you will be directed back to the login page where you can use your new account to login to the application.

Application

Once you Login in, the app will redirect you to the home page where you can see a map of Singapore and a bunch of icons, but no car parks right now.

-Preferences

That's because you have to set your preferences before the application displays any car parks. To set your preference, simply click the settings icon on the **top right** and a toolbar will pop up from below. (Open the preference interface)

Here you can set the **Distance** as well as **the Availability of Car Park Spaces OR Motorcycle spaces**. Your preferences are saved automatically to your account so that whenever you log in you don't have to set your preferences every time.



(Set Preferences) For now we will set the distance to "3km", and check for availability of Car Park Spaces.

-Home Screen

Immediately after you set your preferences you can see below that the application automatically **displays car parks** that suit your preferences. The app also shows you how many parking slots are available as well as how much they cost per hour.

You can also see the car parks on the map as indicated by the icons scattered across the map.

Our app allows you to **zoom in and out** by pressing on the plus and minus buttons on the top right so you can have a better view of the map. (Demonstrate Zoom in and Zoom out)

You can also **pan across the map** by moving your finger along the screen. (Demonstrate Panning of map)

-Report Bug

(Click Report Bug)

Our app also comes with a **report bug** function that you can access by clicking on this bug on the top right above the zoom in and out buttons.

(Show the report bug interface)

You are free to report whatever issue you might have with the application to us. This could be a major bug like how the map doesn't load whenever you login or something small like how the application doesn't show the car parks fast enough.

(Send a report) So we will just type right over here “Car parks not loading fast enough” and click **send**. Now your report has been sent to the cloud.

Once you send a report we make sure to go through and fix whatever issue you might have.

-Log out

Lastly, if you click on this **logout button**, you will be redirected back to the login page. If you don't log out the app will keep you logged in, and logging out allows you to use another account if you want to.

Closing Statement

So in summary, with TransitEase, users will be able to find car parks more easily and reduce congestion on commonly used carparks. Moreover, users will be able to find car parks that suit their needs with ease, facilitating smoother mobility and reducing environmental impacts by cutting down on fuel wasted on finding car parks.

That's it for our presentation, Thank you.