UI Demo

Authentication <Cheng Yao>

// Visit home page
Lets start by running through Peewee's authentication layer

Upon landing on our Peewee home page, new users can choose to register for an account, while existing users can choose to login to their accounts.

// Visit /dashboard
Peewee has a user authentication system set up for all our pages, so if unauthorised users visit our secured pages, they will be bounced out to the login screen where they would need to login to authenticate.

// Bounced to login
If I am a first time user, I would need to register for an account.

// Choose Register
Click on register, and key in my details for my account

(Register with email and password)

I will enter my email, followed by my password and confirm my password

// Forget password
Now, let's say I am an existing user, and I have forgotten my password.

I can click on forget password, where i enter my email for confirmation.

An OTP will be sent to my email, and upon receiving it, I will enter it to validate my credentials (OTP is default 510210)

Upon successful validation, I will then reset my password.
// Set to new password

// Login after registering
We will then proceed with logging in.

Dashboard <Zi Qin>

After users login to their accounts, they will be automatically directed to the dashboard page where they can view a summary of the traffic conditions and utilise shortcuts to other pages.

This graph on the top left allows them to view current real-time car count, past traffic trends and the estimated current congestion level calculated based on the average car count from past trends. These car counts are generated from the object detection AI model that we introduced previously.

Users can also visualise the congestion levels in a heatmap and navigate to the map page to view congestion levels along specific roads.

The dashboard also provides an overview of the recent road incidents and their favourite routes.

Incidents <Zi Qin>

Next, the incident page allows users to view the list of incidents that were reported by other users or themselves. This platform allows users to exchange information about road incidents that can affect congestion levels.

Users can also report an incident they encountered. They can do so by entering the incident type and a short description of the incident. Users will then need to grant system's access to their location to allow the system to detect the location. After filling all the sections, the submit button will then be displayed for submission. The system then displays the submission status. After an incident is reported, the incident page will be updated and the map would also display the location on the map.

<u>Demo</u>
Incident Type: Accident
Incident Description: Vehicle collision on the rightmost lane
Incident Location Access: Yes
Submission status: Success

Map Overview <Guang>

The map page displays the traffic conditions and traffic incidents. Traffic Cameras are plotted on the map and upon clicking a camera, an info window pops up showing the camera details, such as the Camera Name, Current Vehicle Count, , Peakedness level, and a link to view the life camera feeds in the Road Conditions page. Traffic Incidents are also plotted and its InfoWindow will show the type, description and location of the incident.

A heatmap can also be enabled, showing the current peakedness levels of a general location based on the traffic camera's data.

Map Filters <Aaron>

//Introduction to filters
"Today, we're looking at our map's two main filter sections which are used to help users see through the lens of traffic cameras and heatmaps, and a system to navigate around incident sites.

//Interactive Demonstration (If possible, show rough example)
As we interact with the map, notice how selecting different filters affects the displayed data. For instance, enabling the 'cameras' filter instantly populates the map with camera icons. Clicking an icon pulls up a live video feed, offering invaluable insight into current traffic flow and weather conditions.

//Camera, heatmap filters simplified
First, let's explore the camera and heatmap filters. These tools are designed to enhance situational awareness and provide real-time visual data. With the camera filter, users can locate live feed cameras, enabling them to visually assess traffic conditions. Switching to the heatmap view, one can immediately identify areas of high congestion, represented by colors, starting with red indicating heavy traffic, and with green signaling clear roads.

//incident filters
Moving on to incident filters. This set of filters is crucial for trip planning and navigation. Users can filter by incidents, which are unexpected events like accidents or hazardous conditions. Roadworks, another category, reveals planned construction zones, while closures provide information on roads that are currently not in use.

//Layered Filtering
Our map allows layered filtering, which means users can apply multiple filters to tailor the information to their specific needs. For example, by selecting both 'incidents' and 'closures,',etc, a driver can anticipate areas to avoid, ensuring a smoother journey.

//Conclusion
With that, i would like to pass onto hamka who will elaborate more on road routes

//Past Examples
1. we have 2 sections of filters, one for cameras and heatmap and another one for any road blockages reported, categorised by incidents, roadworks and closures.
2. Lets take a look at how the filters presents the map page.

Map Routes <Hamka>

//Bedok to NTU

For routes, we can key in any two locations in Singapore. For example we can key in bedok and NTU here on the map. As you can see, the results are localised to Singapore and no results from other countries will pop up.
//Search route
Once we click search route, we can see the route plotted on the map.
//Save route
We can then save these routes to favourites and we can see it show up once we view favourites.
//Jewel to NTU
We can also search for another route such as jewel to NTU, and the new route will be plotted instead.
//View Favourites, plot Bedok to NTU
We can then plot our favourite routes on the map as well just by clicking view on map.
//Unfavourite the route
We can go back and decide to unfavourite these routes if we need to.

Road Conditions <Eugenia>

1. From the map page, hovering over one of the cameras and clicking on" view camera",will redirect us to the road conditions page.
2. On the road conditions page,camera details, the traffic camera image and a graph of average cars at each camera throughout the day is rendered, this allows users to visualise the trends clearly.
3. Now, without redirecting from our map, our road conditions page will simply display 4 live active cameras and its details on the screen.
1. Additionally, we may navigate to the camera details by using the search function to find another camera name.
2. Finally, we have also made our web application responsive on mobile versions so that it will be more convenient for users on the go.