

## TEAM 1 ICT-2102 Assignment 3

### Brainstormed design ideas

Description and discussion process

Design ideas brainstormed:

1. Find all available routes for the user based on given start and end point.
  - When given two specific locations, the application should find all possible routes between the two points before evaluating the results to suggest the best route.
2. Detect congestion on route
  - For all routes found, system should refer back to congestion data and factor in any congestions that are found in the route to reflect a more accurate travelling time.
3. Detect transport's current capacity load (i.e. how full it is)
  - From capacity data, system should reflect and display how full the bus/train is so that users can refer to the information and choose an alternate transport that might be less crowded.
4. Crowdsourcing from users for traffic conditions updates
  - Users who find out about certain traffic situation (e.g. traffic jam, train breakdown) can login to their account and post a Traffic Condition Update to the application, to help keep other users informed.
5. Bookmark 'Favourite' routes
  - If a user tend to travel on a particular route often, or wishes to save it for future reference, they can bookmark a particular route they found and open the route information in the future.
6. Filter compiled results of routes based on user's preferences
  - There might be a lot of different routes generated based on the user's location inputs, but not all routes might be of value to the user. Filtering the results to omit the routes that the user would not be interested in will help the user find the most preferable route quicker.
7. Track exact current location of transports
  - Helps user to track the exact location of the bus or train that he/she intends to board, to provide the user with an idea of how far away the transport is from reaching.

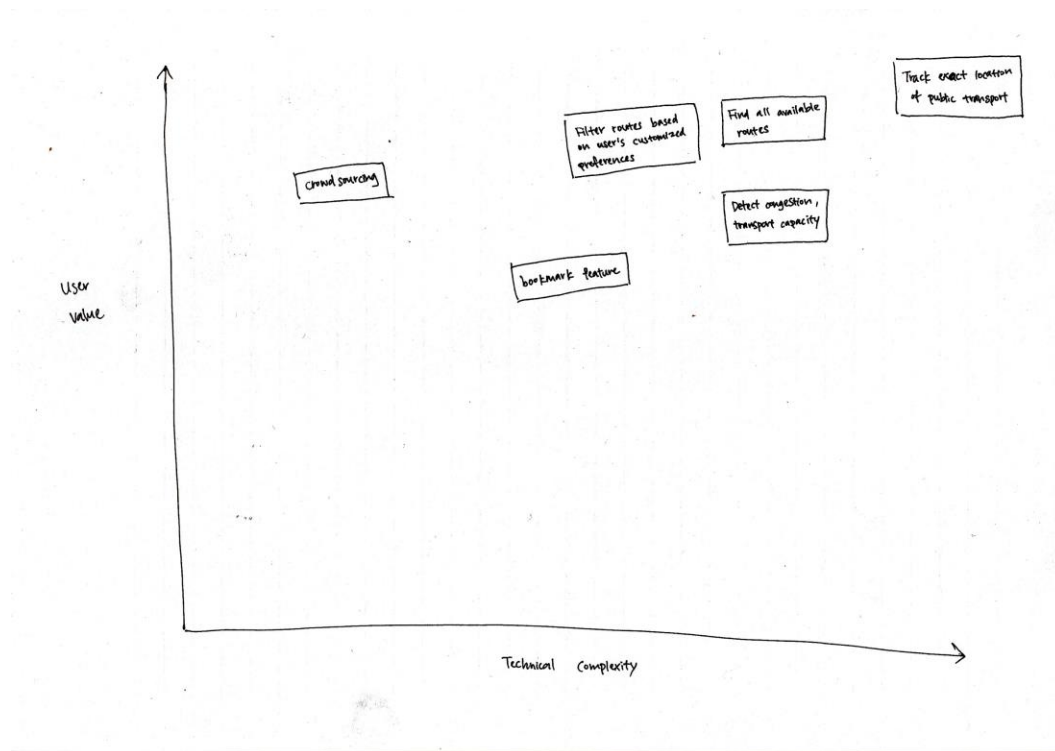


Diagram: User value vs technical complexity

## Design ideas chosen

### Description and explanation

#### Design Idea #1:

Find all routes and return results based on user's filter preferences

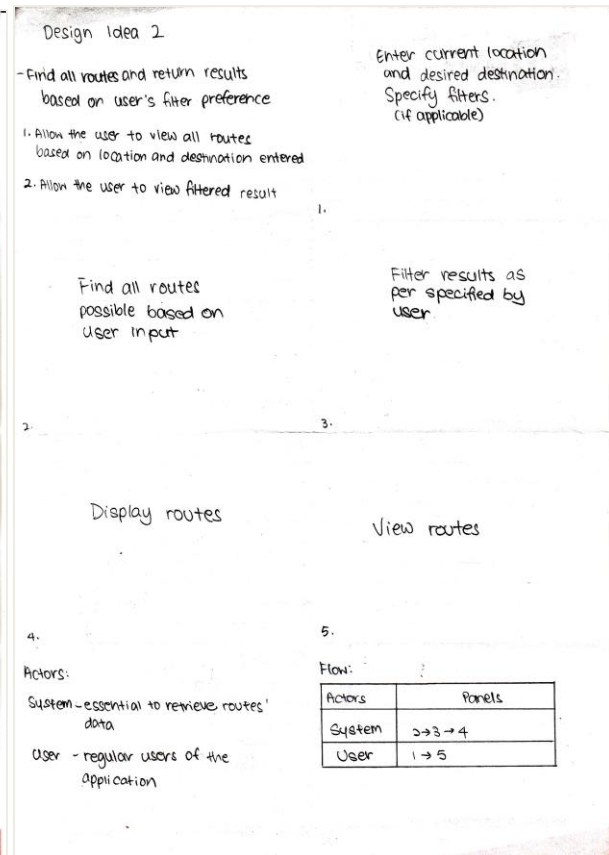
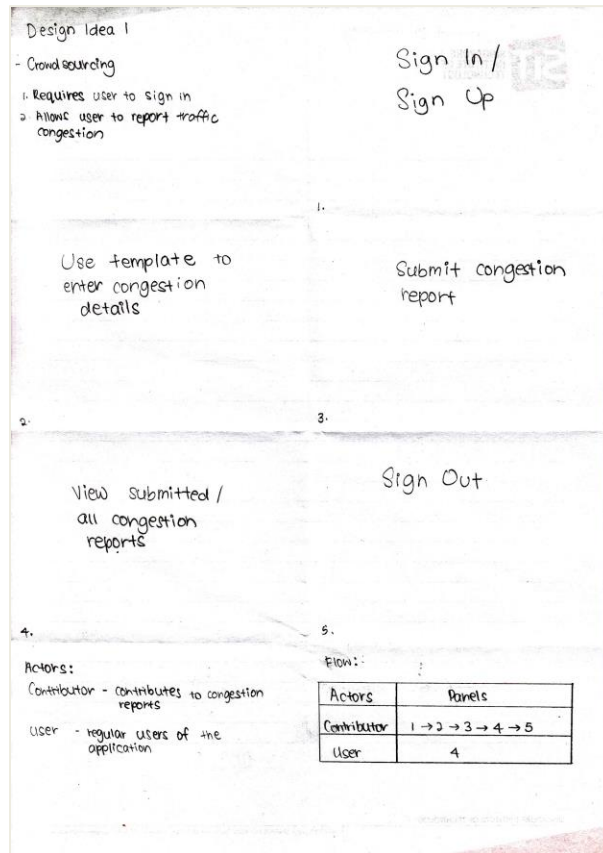
- Combination of design idea 1 and 6. It is key to the problem that the user is able to find a route that is accurate with congestion data factored in. Additionally, the user should be able to choose to see only what they are interested to see. E.g. if a user with bus-concession wants to find directions, routes that requires them to take the MRT will not be their preferred route. If users can't find what they want to see easily, it will definitely affect their user-experience negatively.

#### Design Idea #2:

Crowdsourcing from users for traffic conditions updates

- Relatively easy to implement whilst data gathered from it can be very helpful as well. High user-value compare to the technical complexity it requires. Utilizing the congestion data gathered from crowdsourcing can help the other users a lot when providing directions for routes that are suggested to be congested by contributing users who had submit a traffic condition update.

# Storyboards



# Prototype

## Design 1 (Low-fidelity):

home | find | report | log in | sign up

Log in

Sign up

User Name:

password:

Name:

User Name:

password:

Submit

Submit

Information is shown when either Sign in / Sign up is chosen

Road Name:

Category:

Level of Congestion:

Estimated time to clear Congestion:

Submit

Back

ERROR: please sign in or sign up for a new account to report any congestion. To go back to the main menu, click main menu

Main menu

1. Click "Sign in / Sign up"

Thank You for reporting the congestion status. To view more congestion reports, click 'View Congestion' button.

View Congestion

2. Name:   
 updated at:   
 Details of congestion:

2. Name:   
 updated at:   
 Details of congestion:

4. From ②, click "Submit" 5. From ④, click "View Congestion"

2. Click "Report Congestion"

3. Click "Report Congestion"

## Design 1 (Med-fidelity):

TRAVEL APP

Sign In

Sign Up

email:

password:

Submit

name:

email:

password:

confirm password:

Register

menu button options:

Home

Find Routes

Newsfeed

Report Congestion

Sign In / Sign Up

Information is shown when either sign in / sign up is chosen.

1. Click "Sign In / Sign Up"

TRAVEL APP

Road Name:

Category:

Level of Congestion:

Approximate time to clear congestion:

submit

cancel

2. Click "Report Congestion" [signed in]

3. Click "Report Congestion" [without signing in]

TRAVEL APP

ERROR: please sign in or sign up for a new account to report any congestion. To go back to main menu, click Home.

TRAVEL APP

Home

Find Routes

Newsfeed

Report Congestion

Sign In / Sign Up

Welcome to the travel app, where planning to travel via public transport is made easier.

Find out how to use Travel App here!

Bookmark your travelling routes

7. Main page of Travel App  
 6. From ①, click "submit" / "register"  
 5. From ②, click "cancel"

1. Name:   
 Updated at:   
 Details of congestion:   
 Rate it!

2. Name:   
 Updated at:   
 Details of congestion:   
 Rate it!

3. Name:   
 Updated at:   
 Details of congestion:   
 Rate it!

9. Click "Newsfeed"  
 8. From ④, click "Newsfeed"

sorted according to latest update

only available if signed in

Pages (1, 2, 3, 4)

## Design 2 (Low-fidelity):

Starting Point ... ①

Destination ... ②

☐ BUS ONLY
 ☐ TRAIN ONLY
 ☐ Sort by Fastest
 ☐ Sort by walking distance

VIEW TRAFFIC CONDITIONS

DOVER MRT to ORCHARD MRT

☐ BUS ONLY
 ☐ TRAIN ONLY
 ☒ FASTEST
 ☐ WALKING DISTANCE

Route 1 50 mins, 5m walk  
 DOVER MRT → CITY HALL MRT → ORCHARD MRT  
 By Train

Route 2 56 mins, 5m walk  
 Route 3 60 mins, 12m walk  
 Route 4 67 mins, 20m walk

DOVER MRT to ORCHARD MRT

☒ BUS ONLY
 ☐ TRAIN ONLY
 ☒ FASTEST
 ☐ WALKING DISTANCE

Route 1 56 mins, 5m walk  
 197 → 51 → 11  
 By Bus

Route 2 67 mins, 20m walk

DOVER MRT to ORCHARD MRT

☒ BUS ONLY
 ☐ TRAIN ONLY
 ☒ FASTEST
 ☐ WALKING DISTANCE

Route 1 56 mins, 5m walk  
 Instructions:  
 1. Go to bus stop and take 197  
 2. Alight at Sunline Plaza, 3 stops later and take 51  
 3. Alight at Orchard, 15 stops later and take 11

Route 2 67 mins, 20m walk

## Design 2 (Med-fidelity):

①

Start to Destination

Mode of Transport  
☐ Bus ☐ Train ☐ Both

Filter by:  
☒ Best route  
☐ Shortest walking time  
☐ Lesser transfer

Traffic condition  
☐ View traffic condition  
☐ View MRT disruption (if available)

②

DOVER MRT to ORCHARD MRT

Mode of Transport  
☒ BUS ☐ Train ☐ Both

Traffic condition  
☐ View traffic condition  
☐ View MRT disruption

Route 1 50mins, 0m walk  
 DOVER MRT → CITY HALL MRT → ORCHARD MRT  
 By Train

Route 2 56mins, 5m walk  
 Route 3 60mins, 10m walk

③

to

Mode of Transport  
☒ BUS ☐ Train ☐ Both

Traffic condition  
☐ View traffic condition  
☐ View MRT disruption

Route 1 56mins, 5m walk  
 197 → 51 → 11  
 By Bus

Route 2 60mins, 10m walk

④

to

Mode of Transport  
☐ Bus ☐ Train ☐ Both

Traffic condition  
☒ View traffic condition  
☐ View MRT disruption

Route 1 50min + 10min  
 10min Estimated  
 Take 197 from bus stop  
 Alight 15 stops later

Jurong East to Pulau Ubin

☒ No route found

① Main page of Go Directions

② From ① select "best route" and click "Go"

③ From ① select "Bus" and click "Go"

④ From ① select "view traffic condition" and click "Go"

⑤ From ① click "Go", when route not applicable