MSE PROJECT TITLES

Semester 1, Session 2020/21

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Title of project: Research and Development of Driver-Owned-And-Operated Ride-Hailing Platform with Gamification Features towards Social Impact on E-Hailing Drivers in Malaysia.

Research Area: Software engineering tools and methods

Number of Students: 2 students

Objective(s) of project:

1. Develop a ride-hailing platform (Backend, Admin control panel, ios and android apps for rider and driver) with gamification reward system for riders.
2. The first e-hailing app with Gamification Reward System – Play and win credit points to offset part of next ride fair. This will helps to increase the rider's stickiness to the app.

Research Motivations

- To improve driver's income.
- To create a win-win-win situation among platform provider, rider and driver.

Brief description:

Currently there are about 7 active E-Hailing Operator (EHO) in the market, and all of them are profit-driven company. They are charging a commission of 10% to 20% for every trip completed by driver. Besides high commission charges, far away pick up point and auto job accept feature are also some of pain point face by driver.
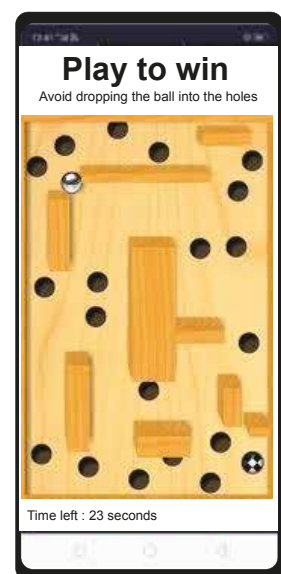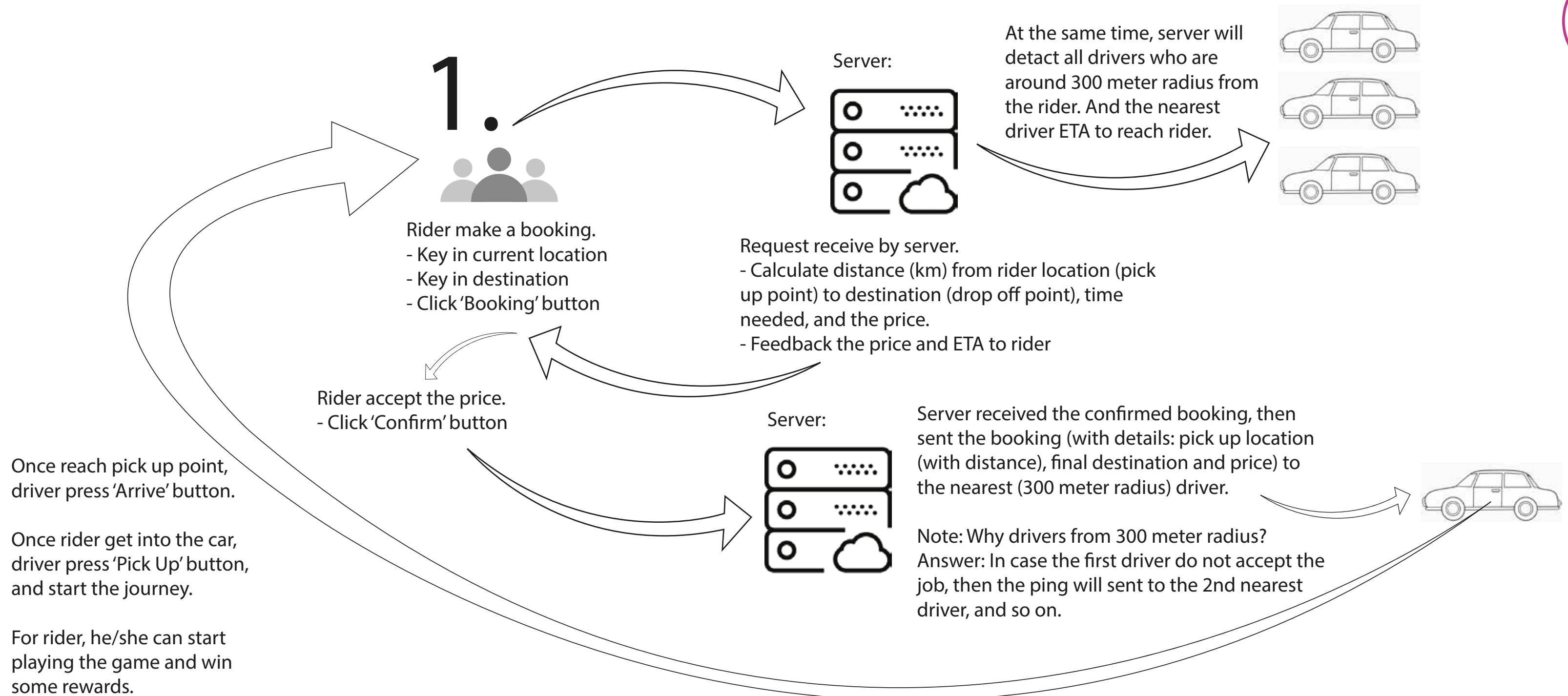
With all those unfair terms face by e-hailing drivers, we decided to create a social enterprise business model for driver-owned-and-operated ride-hailing platform which will have a positive impact on a community of 100k drivers in term of their income and the quality of their lives. A big portion of company profit will goes back to driver community;

- Contribute 5% of driver's total sale revenue to their EPF.
- Allocation of 5% total sale revenue as Education rewards for driver's kids. (with good result in examination, like PMR, SPM, STPM, etc.)
- Allocation of 10% total sale revenue as Education Scholarship (for driver's kids).

- 10% total sale revenue as gamification rewards to riders.

Expected Outcome: A complete set of ride-hailing platform which include back end, ios & android for both rider and driver. A gamification reward system.

Tools/Programming languages to be used: Preferred Java, C++, Swift, however other languages doable as well.

Server:

At the same time, server will detact all drivers who are around 300 meter radius from the rider. And the nearest driver ETA to reach rider.

1.

Rider make a booking.
- Key in current location
- Key in destination
- Click 'Booking' button

Request receive by server.
- Calculate distance (km) from rider location (pick up point) to destination (drop off point), time needed, and the price.
- Feedback the price and ETA to rider

Rider accept the price.
- Click 'Confirm' button

Server:

Server received the confirmed booking, then sent the booking (with details: pick up location (with distance), final destination and price) to the nearest (300 meter radius) driver.

Note: Why drivers from 300 meter radius?
Answer: In case the first driver do not accept the job, then the ping will sent to the 2nd nearest driver, and so on.

Once reach pick up point, driver press 'Arrive' button.

Once rider get into the car, driver press 'Pick Up' button, and start the journey.

For rider, he/she can start playing the game and win some rewards.

Driver accept the job. OTW to pick rider.

Rider will receive the details of driver:
- Driver image
- Driver car plate number, car model, car color
- Driver rating

Spin to win

SPIN STOP

Play to win
Avoid dropping the ball into the holes

Time left : 23 seconds

Lucky draw contest

Win RM50 credit wallet

LUCKY DRAW

Example of games & contests

How Gamification works:

Every ride booking, rider has a chance to play a game and win credit points to use for next ride.

Game started after driver pressed 'Pick Up' button, and game ended when driver pressed 'Drop Off' button.
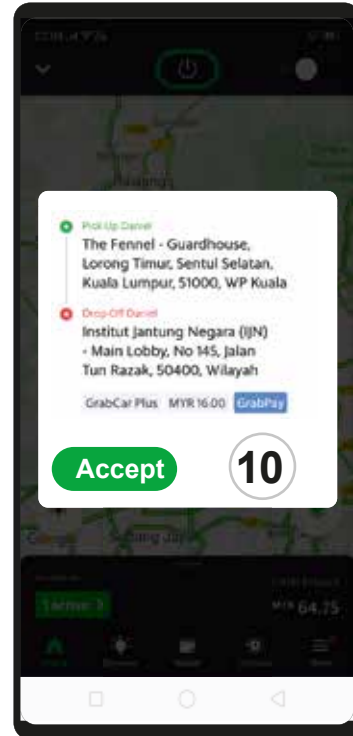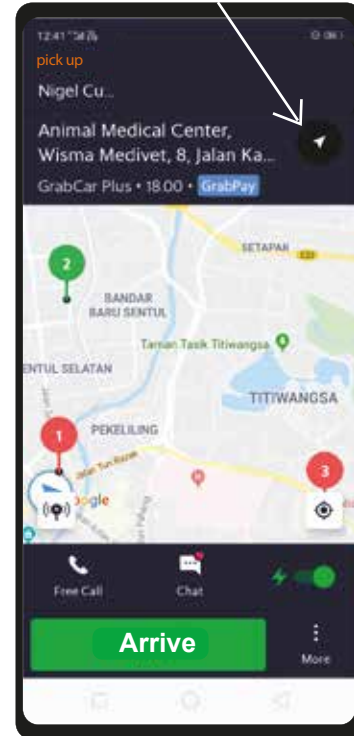
# Driver's app interface when job come in

Driver app landing page
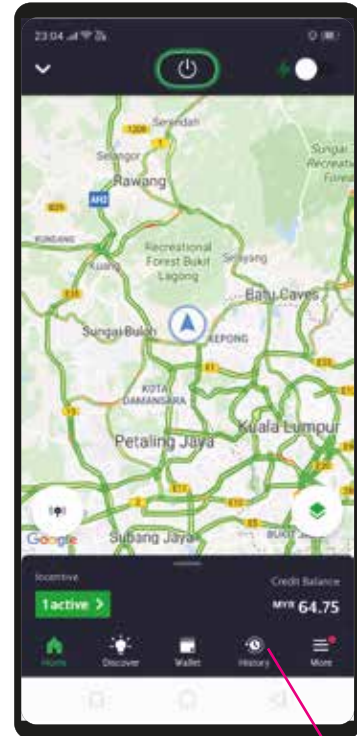
When job in, driver can click 'Accept' button to accept it, or the job will re-assign to other nearest driver after 10 second.

After click 'Accept', this appear. Driver will click the 'Arrow' button beside the address, then will open GPS app (waze or google map) showing rider pick up direction.

Once reach the pick up point, driver click 'Arrive' button, the arrival notification will sent to rider. Rider has to reach in 3 minutes, if not, driver can cancel the job and get RM3 as compensation. (rider pay the compensation charge)
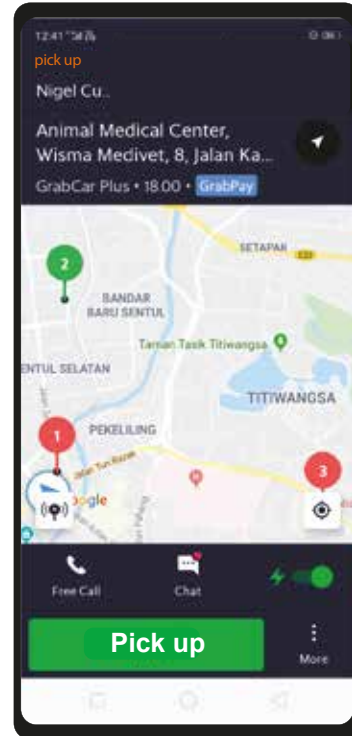
Driver will click the 'Arrow' button beside the address, then will open GPS app (waze or google map) showing rider drop off direction.
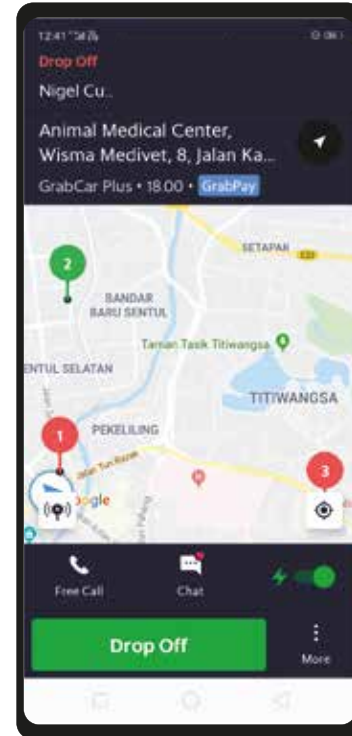
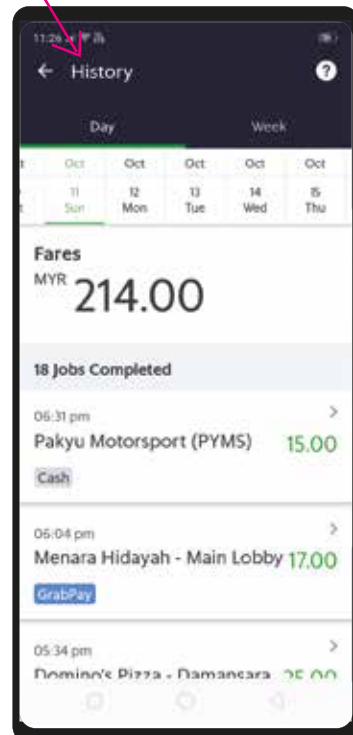Once reach drop off point, click 'Drop off' button.
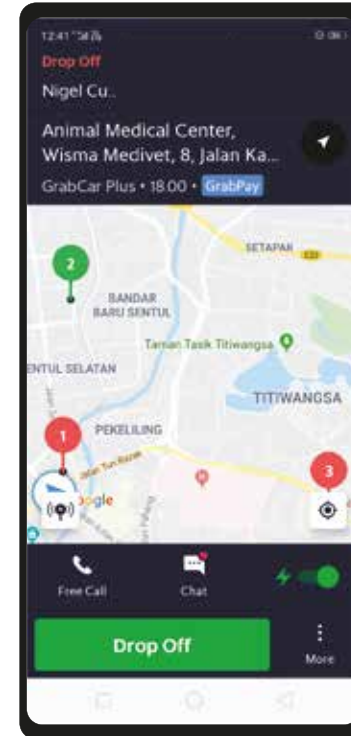
Key in toll amount if there is toll charges. then click 'Proceed'
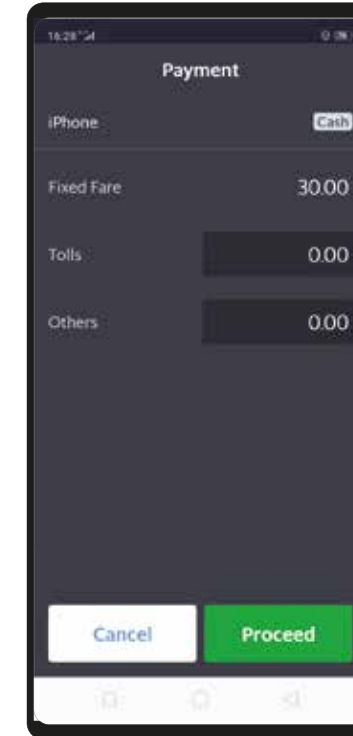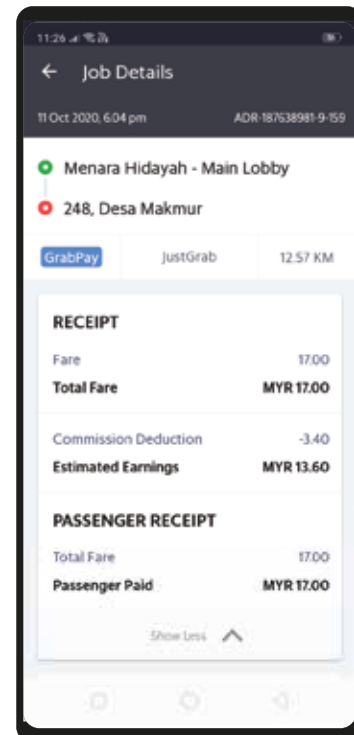
Collect cash from rider if he pay by cash, and click 'Confirm' button or just click 'Confirm' button if rider pay using ewallet
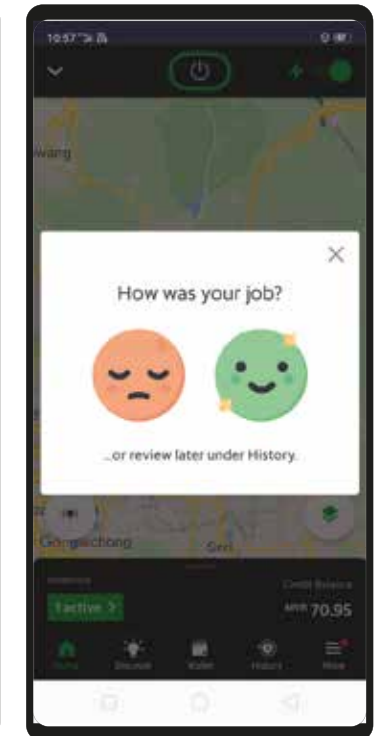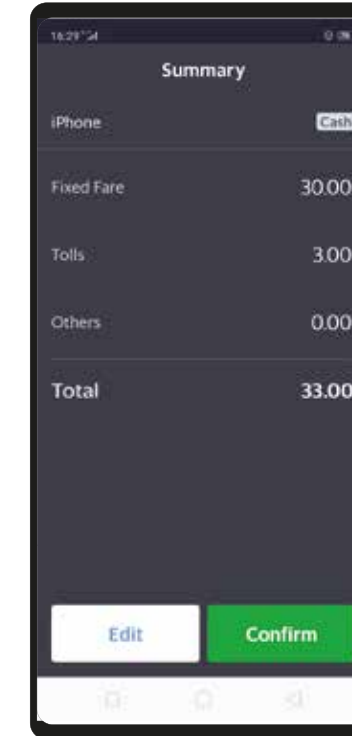
When click on 'History' button, jobs history page show up.
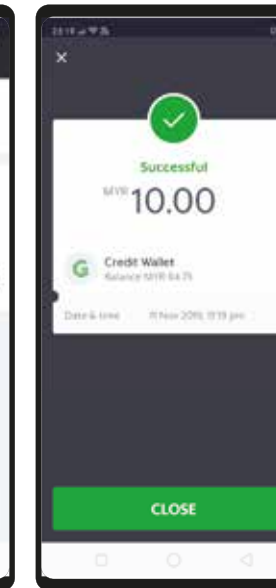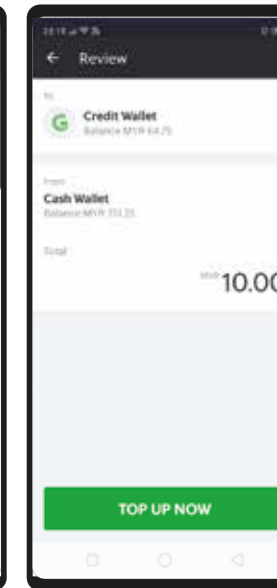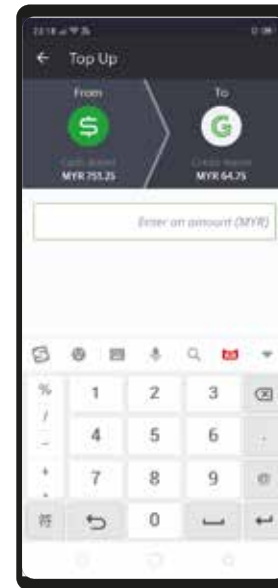
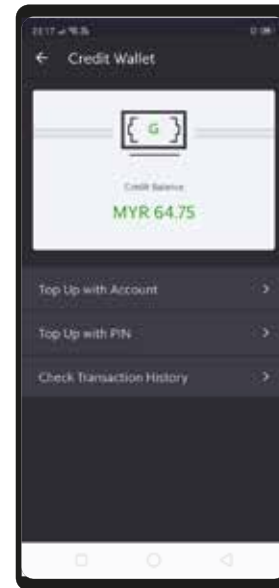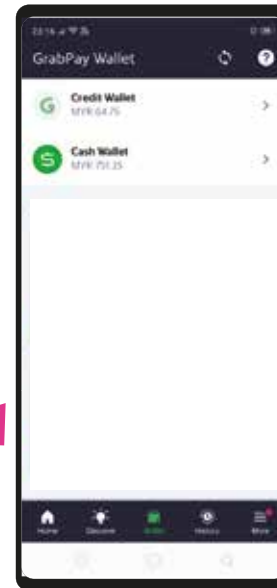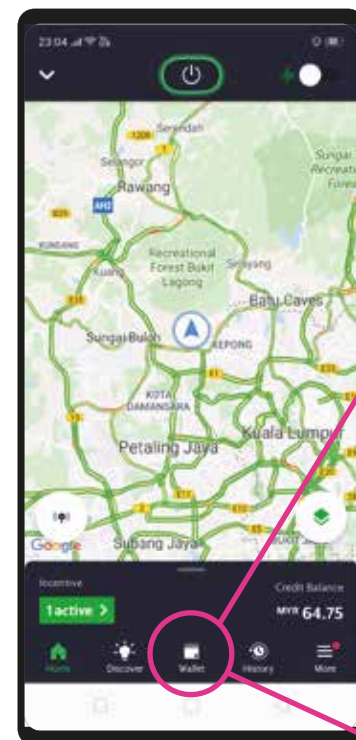When click on individual job, job details show up.

Driver's app interface - Cash & Credit Wallet

Credit Wallet : driver top up money into this wallet, so that Grab can deduct the 20% commission from this wallet.

2 way to top up money:
1. transfer from own Cash Wallet account.
2. buy top up card from 7-11, petrol station, etc...

Top up from Cash Wallet account

Driver app landing page

Cash Wallet : All payment using Grabpay will go to this Cash Wallet (after 20% deduction)

Drivers can transfer money from this account into their personal bank account, so that they can use for their daily expenses.