# Grab
# Economics, Mobility & Deliveries
# Take-home Analysis Task

**Instructions:**

You have **three** hours from receiving this assignment to complete the task below and return your completed work. At the end of three hours, please submit your analysis output including any notebooks, slides, visuals, and code back to youzhen.chong@grab.com and zheching.tan@grab.com.

Given the dataset of bookings, your task is to:

1. Explore and understand the dataset.
2. Prepare a model or analysis that explains the number of bids a given booking received. Be prepared to explain and defend your model choices.
3. Based on your results in 2), suggest possible implications of your analysis and prepare a business strategy or recommendation that would make sense. Please present your findings **concisely** in slide format. Assume that your audience comprises leaders of the Singapore Grab business. Please limit to a maximum of 5 slides, but you do not need to use all 5.
4. Suggest any other data, internal or external, that may help your conclusion.
5. Detail any additional insights or recommendations that may come up in your analysis of the data.

**Dataset description:**

The attached dataset contains a simplified subset of the bookings attempted in Singapore between 7am and 8am in Feb 2015. Each row indicates a booking attempt made by a passenger. A job is broadcast to potentially available drivers in a nearby area. Drivers can elect to bid to be allocated that job. We are interested in any relationships that explain the number of bids from drivers that a job received. The data is in CSV format.

Variables:

- **`distance`** trip distance
- **`pick_up_time_local`** time of passenger pickup
- **`bids`** number of bids made for each attempted booking by available drivers. If bids are 0 it implies that no drivers made a bid for that job.
- **`PICKUP_DIS`** code for district in which trip would start
- **`pick_up_district_name`** name of district in which trip would start
- **`DROP_OFF_DIS`** code for district in which trip would end
- **`drop_off_district_name`** name of district in which trip would end
- **`hours`** hour interval of day

- **`pick_up_lat_round`** latitude of pickup location, rounded to two decimal places or approximately 1km
- **`pick_up_long_round`** longitude of pickup location, rounded to two decimal places or approximately 1km
- **`drop_off_lat_round`** latitude of dropoff location, rounded to two decimal places or approximately 1km
- **`drop_off_long_round`** longitude of dropoff location, rounded to two decimal places or approximately 1km

*Note: you may not need to use all variables to answer the question sufficiently.*

Map of district locations by district code:
https://data.gov.sg/dataset/sla-land-survey-district

**Notes and hints:**

- The contents of the test as well as the dataset are confidential.
- This is a 3-hour test but you shouldn't need the entire time to do the analysis. Make sure to leave enough time to think about how to deliver your findings effectively.
- You may use any language, package, framework, or tools for your analysis but remember that your code has to be readable, understandable, and reproducible. It is always in your benefit to explain what you are doing and why.
- You may use any publicly available external datasets to complement your analysis but it is not necessary to answer the primary problem.
- You may search the internet to help you with your work.