1. A description of the problem and a discussion of the background. (**15 marks**)

I am from Singapore, and I am interested in knowing the number of different amenities (shopping malls, school etc) in the different regions of Singapore. Singapore is divided in different electoral divisions for our general election, and I will use these division to represent the different regions of Singapore. The current electoral divisions can be seen here <https://data.gov.sg/dataset/electoral-boundary_2020> .

This data can quantify the convenience of living in different electoral divisions in Singapore base as it show the number of accessible amenities in each division.

Also, I believe the data that results from this project can be use as features in future machine learning projects.

1. A description of the data and how it will be used to solve the problem. (**15 marks)**

In order to complete my project, I need data about the different type of amenities in Singapore, including their coordinates. Data about various amenities are hosted on <https://data.gov.sg/> , a website built by the Singapore government to provide open data to developer. Coupled with the API provided by https://www.onemap.gov.sg/docs/#introduction , another website built by the Singapore Land Authority, I will be able to get the coordinates of different amenities in Singapore.

After, getting the coordinates of the amenities, I need to be able to determine which division they are located in. For this I will need geospatial data about the electoral divisions in Singapore, particularly the coordinates of the polygon that marks their boundaries. I can get the KML data of the electoral divisions from <https://data.gov.sg/> as well, and I can extract the polygon data from the KML file. By checking whether an amenity’s coordinates exist within a division’s polygon, I can determine which division they belong to.

Using the data ( amenity and the electoral division it belongs to), I will then plot bar charts that will help readers visualise the quantity of different amenity in each electoral division.