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**Milestone 1**

The goal of the project is to analyze 4 parameters regarding COVID-19 in Canada and compare them between the provinces. By using priority queue we will be able to see which provinces are most affected by the virus. The parameters of interest are:

1. The total number of cases per provinces overall
    a. This means which provinces have higher number of cases than other provinces
2. The highest/lowest number of cases for a day
    a. This is determining which specific day had the highest/lowest number of cases in each province
3. The highest/lowest number of deaths
    a. This is showing death rates in the provinces
4. Number of recoveries
    a. Seeing which provinces have been recovering the best/worst

<u>How These tasks will be completed</u>

1. Data collection
    a. Data must be brought in from the csv file provided from canada.ca. Each of the data parameters (number of cases, date of data point, province) must be stored in a specialized class to contain this information. An array of these objects can be constructed to hold all the information in a java program. The array of objects can then be sorted and organized into their respective priority queues for each one of the analyses parameters.
    b. Each province will have its own array of this data type
2. Sorting and Organizing
    a. Once the data has been collected, we can create a priority queue for each of the parameters of interest for each province. For example, there will be a queue for organizing the number of cases per day in each province so each province will have its own queue, in which the priority key will be the number of cases and the data will be the date. From there the top of each of these queues will be the day with the highest/lowest number of cases for that province. Each top entry will then be put into another queue to determine which province has the highest and the lowest.
    b. This process will be repeated for each province and each analyse parameter.
3. Display
    a. The presentation of the data will be done in multiple ways to allow for a through presentation of information in the final display. Once the data has been organized each of the respective parameters can be displayed

b. The number of cases per province overall can be displayed using a map of Canada
c. The case numbers for day can be displayed on a calendar to see when the virus affected different provinces the most
d. The death rate can also be displayed on a map similar to the number of cases
e. The number of recoveries can be displayed graphically, showing a progression of patient recovery.