The grain of the model is positive cases tracking by date and area region.

The SQL file detailed the domains of all the dimensions and dimensional attributes, as well as the measures. In our diagram, we have:

1. PositiveCase dimension, which is broken down into Age, Gender, Source of Infection, test\_date and area
2. CityDailyTestInfo dimension, which is broken down into Type of Testing Facilities, Availability of Testing facilities, total cases, weather, mobility info, gathering area type and average stay duration.

Here is a brief list list:

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Range /(Min, Max) | Sample Value |
| case\_number | int | (1,∞) | 13 |
| area\_number | int | (1,∞) | 8 |
| date\_confirmed | date | NOT NULL | 20201011 |
| age | int | (0,130) | 35 |
| gender | Varchar(1) | N/A | 1 |
| source\_of\_infection | varchar(20) | N/A | Ottawa |
| test\_date | date | NOT NULL | 20201009 |
| updated\_date | date | NOT NULL | 20201010 |
| testing\_facilities\_type | varchar(20) | NOT NULL | Laboratory |
| availability\_of\_facilities | int | (0,∞) | 5 |
| total\_cases | int | (0,∞) | 7 |
| weather | Varchar(20) | NOT NULL | Sunny |
| gathering\_area\_type | Varchar(20) | NOT NULL | restaurant |
| mobility\_info | Varchar(20) | NOT NULL | walking |
| average\_stay\_duration | int | (0,∞) | 30 |

Here are our assumptions (expect trends):

1. The overall trends should be increasing at first, then decreasing when lock down measures take place
2. There will be an interplay between special evens and the number of positive cases: An increasing number of positive cases could be detected around 14 days before and after holidays (e.g., Thanksgiving or Canada Day), in terms of social interactions, such as family gathering.
3. Specific government measures, such as lockdown measures, will lead to downward trends in the number of positive cases. This will be detected around 14 days delayed.
4. People’s behaviours will change:
5. People visited less and stay shorter time outside
6. People changed lifestyle, for example, people started bicycling, walking, or visiting parks during the summer.

Our work plan is to meet during 1pm-5pm every Wednesday and 1pm -3pm every weekend to discuss the assignments and work together to figure out questions for project. In this assignment, Scott contributed to the SQL files. Xinyu and Scott drew the draft of diagram. Cynthia wrote the report document and created the diagram file.