

Supplementary notes about features implemented in normal track tasks:

1. For A1, B1 A2 and B2: we regard the entries with no data as having no confirmed cases or death cases by default, i.e., consider it as 0 and show 0 in tables and charts
2. For C1, we output the entries with no data as “No Data” in the tables.
3. For C2, we regard the entries with no data as the most recent data for that country, if data is missing from the very beginning of this period, we consider it as all 0s. For example, the data for China before Jul 10, 2021 are all missing so we considered its vaccination rate in this period to be all 0.

Features implemented in honor track tasks:

The report of our honor track tasks is composed of two parts, a map showing the COVID-19 data of the specified countries on one day as well as a bubble chart showing the relationship between two selected features and the COVID-19 data. The detailed descriptions are as follows:

1. The map:
 - (1) The specified countries are shown in green, darker color indicates larger data while brighter color indicates smaller data.
 - (2) The Map is implemented using the Google Geochart API on <https://developers.google.com/chart/interactive/docs/gallery/geochart>.
 - (3) One limitation is that some countries are too small to find on the map when the page is showing the whole world map.
2. The Bubble Chart:
 - (1) The objective of the bubble chart is to visualize the correlation between the two input features and the COVID-19 related data.
 - (2) As the scales of different kinds of data vary greatly, we applied Min-Max normalization to all the data to make them fall into the range of 0 to 1, which can greatly enhance the readability of the chart.
 - (3) The normalization process is performed with Python, the source code can be found in README.md “Python Code for Normalization”.
 - (4) After showing the bubble chart, we calculated the Pearson correlation between

each feature and the COVID-19 related data to draw a conclusion of which feature has more impact on the COVID-19 data.

- (5) One limitation is that if the data is missing, it will not be included in the bubble chart and the calculation of Pearson correlation.

Since for C3 there are a lot of data missing, the persuasion power is limited.