

# CS 209A Project

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## Overview

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Data visualization is the art of providing insights with the aid of some type of visual representation, such as charts, graphs, or more complex forms of visualizations like dashboards.

At present, COVID-19 pneumonia is pandemic all over the world, and we can easily obtain a large amount of relevant statistical data. In order to better analyze these data, our task is to visualize these data. In this project, back-end functions such as data acquisition and analysis **must be implemented by Java**, and you can use any programming language for front-end data visualization display like Java, jsp, html, js, css, etc.

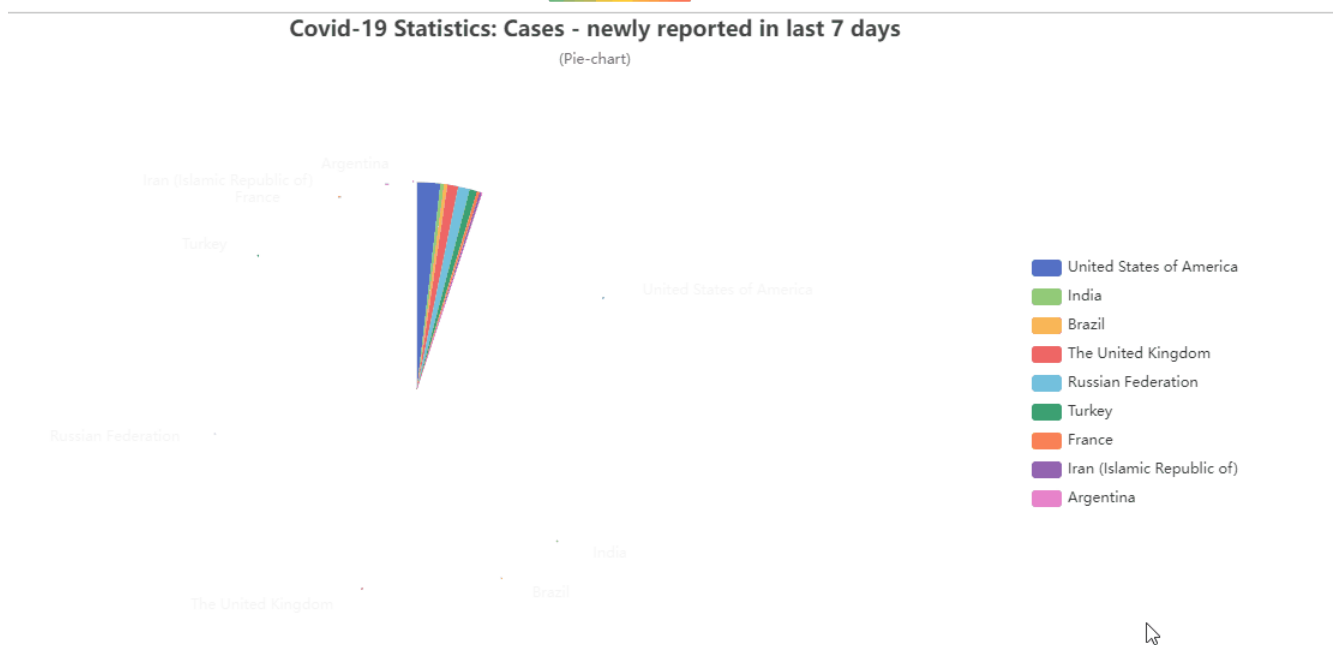
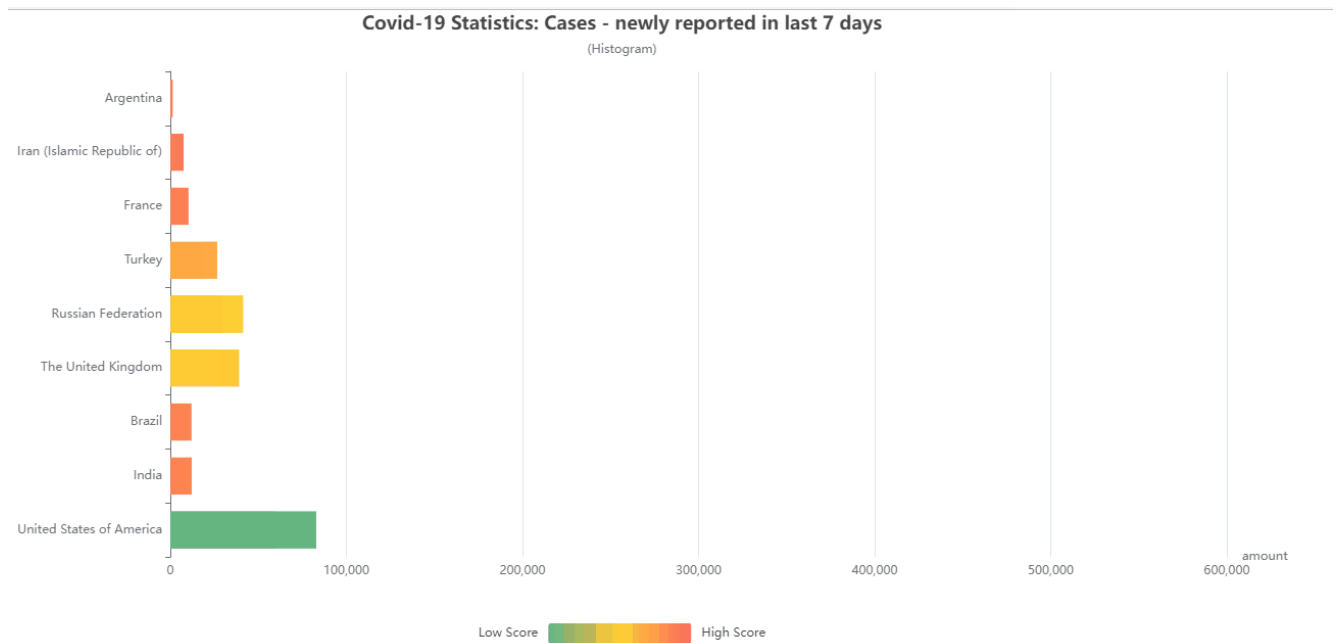
We provide a basic data file `owid-covid-data.csv`, which downloaded from <https://github.com/owid/covid-19-data>. You should visualize this data according to the following requirements:

## Basic requirements:

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1. Design suitable data structures to store data.
2. Display all data in one table-view.
3. Use at least 2 types of charts to display various statistics. For example, you can show the deaths and confirmed case of all countries with various types of chart.

For example:

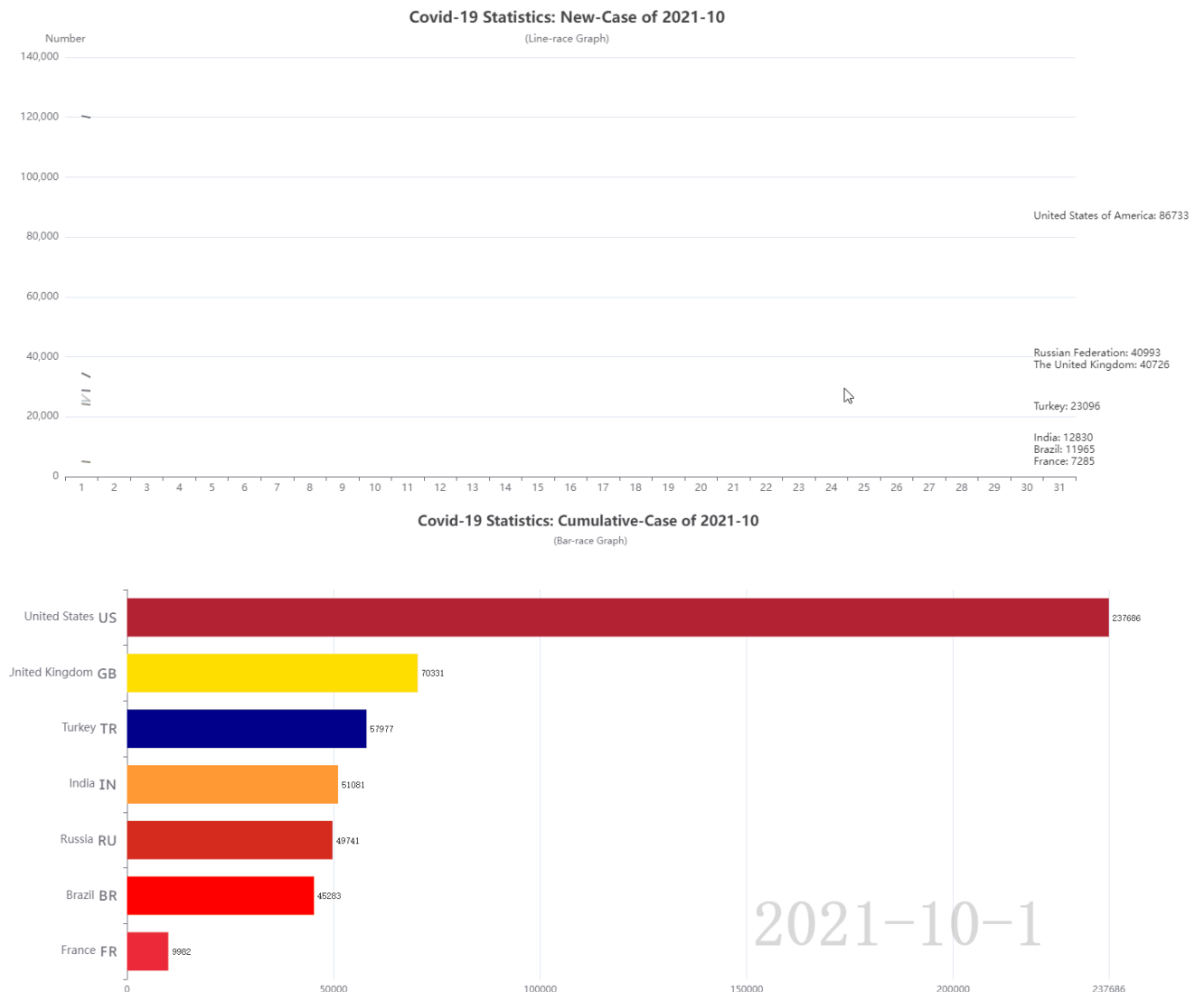


4. Report.

## Advanced requirements:

1. Tracking the latest COVID-19 data automatically. You may need to obtain epidemic data from some live data websites (WTO etc.) instead of using the data files provided.
2. Provide a choice of data sources.
3. Implementing the search function on table-view. You can display only the search results and roll back the unsearched state, or highlight the front row of search results.
4. Implementing the sort function on table-view, such as sorted by time, country or number of people.
5. Use other fancy visualization such as graph, map and race chart data etc. to display.
6. Save statistics data to file.
7. Adjust the displayed data by setting flexible parameters.
8. Use animations to present trends in data.

For example:



## Evaluation Criterion

I. Complete the basic requirements: **60 points**. II. Advanced requirements: **(Total 40 points)**

1. Tracking the latest COVID-19 data automatically. (+ 5 points)
2. Data multi-access. (+ 5 points)
3. Search function. (+ 5 points)
4. Sort function. (+ 5 points)
5. Use map visualization(+ 10 points). Use other fancy visualization (+ 5 points).
6. Save text type statistics to file (+ 5 points). Save chart or other visualization to image (+ 5 points).
7. Adjust the displayed data by setting flexible parameters.(+ 5 points)
8. Use animations to present trends in data(+ 5 points). Set the progress bar on the animation to achieve fast forward, pause and rewind, etc.(+ 5 points)

## Report

Because this project is open-ended, you need to submit an project report to display the content. The contents of the report include:

1. The project file structure, which can be generated with the `tree` command.
2. Interpretation of member variables and functions of custom classes.
3. Demonstration of the program.(screenshots, etc.)

## Submission

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The submitted files needs to include two parts:

1. The entire project file.
2. Project Report.

You are asked to compress all files into a zip named "**StudentID-Name-Project.zip**".

Other, if you can defend the project in the 15th week, you will get **+5 points**, and get **more bonus points(5-15)** will be awarded if you can be selected to present in the theory class.

## Resources:

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COVID-19 Dataset: <https://github.com/owid/covid-19-data> WTO COVID-19 Dashboard: <https://covid19.who.int/> WTO COVID-10 Data table: <https://covid19.who.int/table>