COVID-19 Tracker

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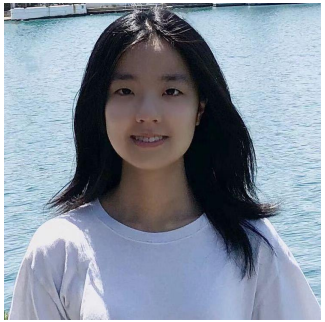

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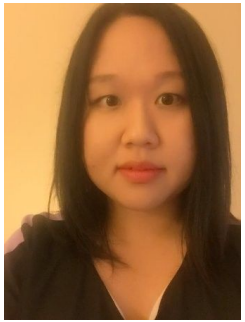

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Background

COVID-19 is an infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Some syndromes of COVID-19 include fever, cough, fatigue, shortness of breath or breathing difficulties, and loss of smell and taste. As of September 22 2020, more than 31 million cases have been reported worldwide with more than 964,000 deaths. The United States has reached over 7 million cases.

Sources:
https://en.wikipedia.org/wiki/Coronavirus_disease_2019
https://coronavirus.1point3acres.com/

Objective

- Design a COVID-19 tracker that keeps track of confirmed, dealth, and recovered cases in the United States, using BI technologies
- Help reduce the spread of coronavirus
- Inform people and organizations with updates

User Scenario 1 - Individual Users

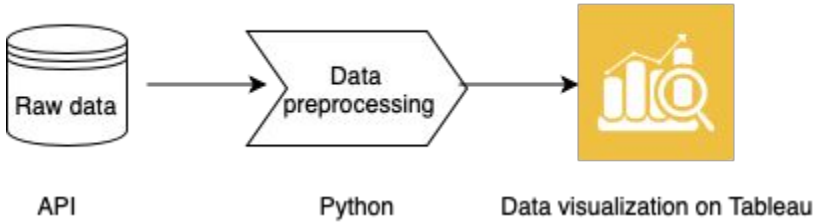
- Anyone who has been affected by current covid-19 outbreak in the United States
- Travelers who are planning to visit or visiting the U.S
- Local residents that are concerned about the spread of virus in their communities

User Scenario 2 - Organizations

- Organizations that need to monitor the spread of Covid-19 for public health
- Medical supply chains need to know supply-demand relation
- School districts and universities need to make decisions on whether or when students and faculties can be back to school

Requirements

- Fetch data
- Data Preprocess
- Store to data warehouse
- Analyzing data and display on dashboard
  - Graph
  - Map
  - etc..



Tools and Data Sources

Data Sources:

- Covid 19 data from Airtable API https://airtable.com/shrMqS4C6wjpZLCP0
- Bing COVID-19 Data REST API v1.0 https://bing.com/covid/local/unitedstates
- Coronavirus Data API from Center for Systems Science and Engineering (CSSE) at Johns Hopkins https://documenter.getpostman.com/view/10808728/SzS8rjbc?version=latest#43e467ac-2cb0-4409-84e8-e18794e47271s

Tools:

- Data warehouse: Apache Cassandra
- Python:
  - Data fetching and preprocess
- Tableau:
  - Data Analysis
  - Data Visualisation

BI Technologies

- Data warehousing
- Cloud data services
- Predictive analytics
- Dashboard

Data Warehousing

- A system that can be used for data analysis with a reporting software.
- The main goal is to combine data from different data sources
- It is useful to have a big picture of your organization and to keep historical data

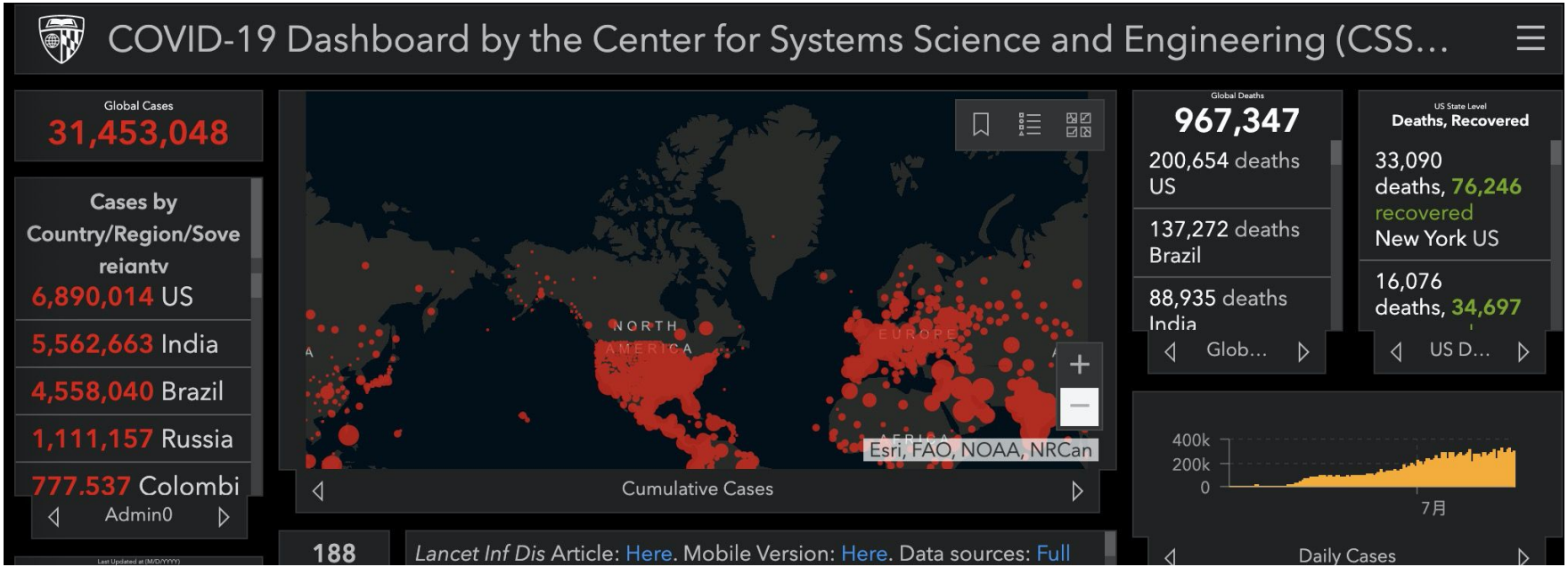
Cloud Data Services

- Access information from anywhere at any time
    - Eg: IT resources, data storage, customer relationship management, enterprise resource planning...
- Deploying a solution in the cloud can be much faster than traditional deployments
- Scale up and down sources with ease

Predictive Analytics

- Extracting information from existing data sets in order to forecast future probabilities.
  - Better understand customers, products, and partners and to identify potential risks and opportunities for a company.
- Algorithms: decision trees, linear and logistic regression, neutral networks...

Dashboard


COVID-19 Dashboard by the Center for Systems Science and Engineering (CSS…
Global Cases
31,453,048
Cases by Country/Region/Sovereignty
6,890,014 US
5,562,663 India
4,558,040 Brazil
1,111,157 Russia
777,537 Colombi
Admin0
NORTH AMERICA
EUROPE
Esri, FAO, NOAA, NRCan
Cumulative Cases
Global Deaths
967,347
200,654 deaths US
137,272 deaths Brazil
88,935 deaths India
Glob…
US State Level
Deaths, Recovered
33,090 deaths, 76,246 recovered New York US
16,076 deaths, 34,697
US D…
400k
200k
0
7月
Daily Cases
188
Lancet Inf Dis Article: Here. Mobile Version: Here. Data sources: Full

Dashboard

- A dashboard is an informative, easily readable, usually one page, real-time user interface that shows a visual representation of data using graphs and charts
- Dashboards show summaries, key trends, comparisons, and exceptions in both current and historical data.
- Dashboards show the performance and status of different parts of an organization and to make informed business decisions

Thank you ！