**High-level workflow**

Project Breakdown:

* **Data collection and storage**
  + Find reliable data related to vaccine rates, tourism, population density and lockdown measures.
  + Implement web-scraping techniques to collect data from API
* **Flask API development**
  + Create flask app to serve as backend
  + Get API endpoints that are related to covid cases, vaccination rates, and population density.
  + Fetch data from the database and serve it as JSON responses.
* **HTML frontend development**
  + Design the user interface using HTML and java
  + Make menus for maps and graphs to select regions, choose specific data filters
  + Use JavaScript libraries (D3) and use new JS library
* **Data manipulation and analysis:**
  + Apply stat analysis to explore correlations between different covid factors
  + Infection rates, vaccination rates, and percentage changes over time.
  + Create statistical tests to validate hypotheses and determine the significance.
* **Visualization**:
  + Java script libraries (Plotly/Leaflet--(for the dashboard with multiple charts)) to create interactive visualizations
  + Make world maps showing COVID-19 infection rates vaccinated vs not, line charts depicting vaccination trends, and bar charts comparing infection rates across different regions compared to lockdown restrictions.
  + Dynamic updates -- filter the data by region, date range, or other relevant parameters.
* **Integrate**:
  + Combine flask api with frontend apps
  + Test