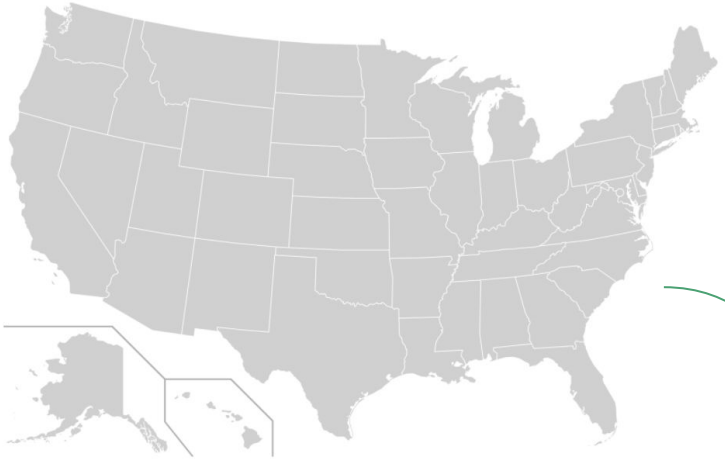
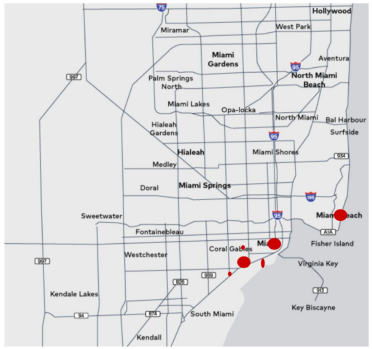
Real Time Tracking and Analysis of COVID Hotspots

Demir Demirsoy Berk Mankaliye Arjun Misra

Project Recap



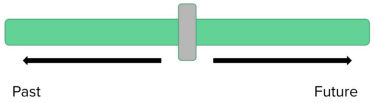
Enter Zip Code, City, County, or Country...



Selected ZIP CODE: 33146
Date: 03/18/2021
Time (Eastern Time): 04:32.11 PM

Cases:
(Since 08:00 AM) 803
(Past hour) 105

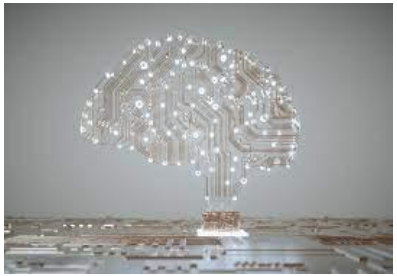
Advisory:
AVOID IF POSSIBLE



System Overview

- Five Key Components
  - the data manager, data converter, data packager, the REST controller and the AI that is integrated to the website
- Five Pipeline Steps
- Three Architectural Layers

System Actors



Architecture & Design

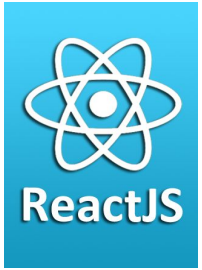
Architectural Style

- 3-Tier Design
- Presentation Layer
  - User Interface
    - Area Search
    - Slider for Past Data/Future Predictions
  - Relays user requests to application logic layer
- Application Logic (Business) Layer
  - Resides on Server
  - Mediates user requests and database queries
- Database-Centric Layer
  - Data model/storage
  - Handles queries for data
  - Returns info to Application Logic Layer
  - AI APIs

Design Patterns

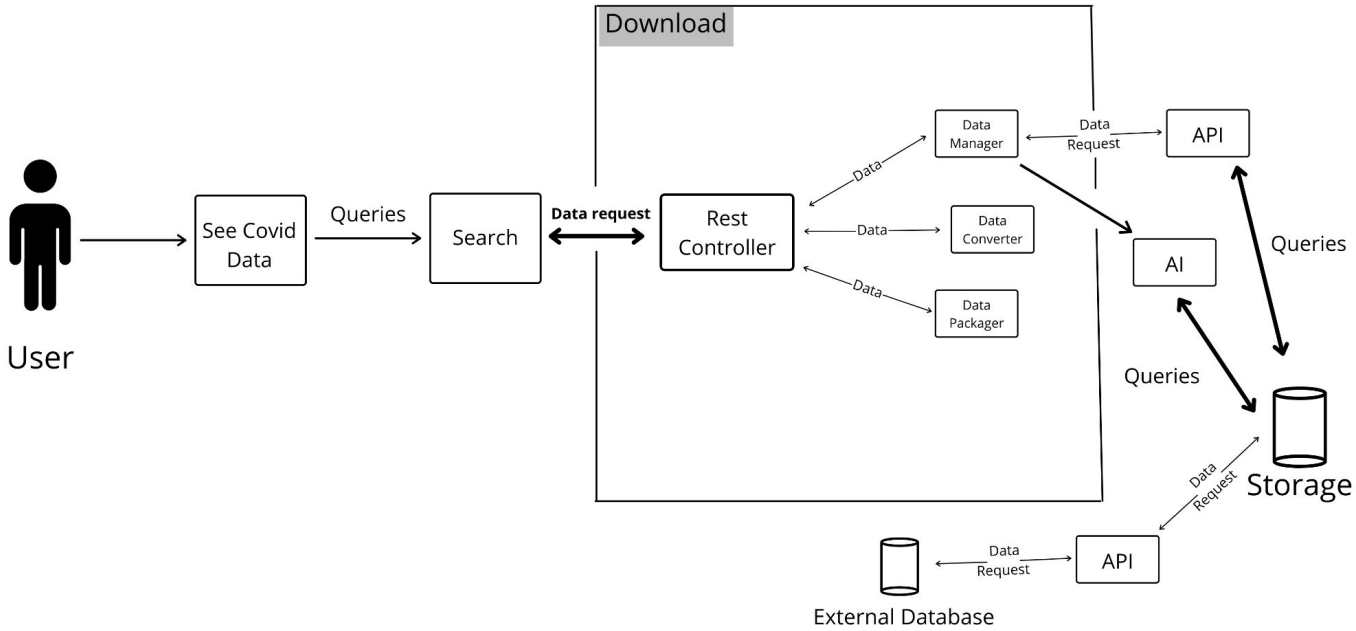
- Creational
  - Singleton
    - Account Creation Step of Signup Process
    - 1 Person => 1 Account
- Structural
  - Decorator
    - Slider (which enables selection of time period)
    - Open-Closed Principle
- Behavioral
  - Observer
    - Seen in Data-Centric Layer
    - Set of APIs (observers) called whenever updates are made to external COVID data sources (subject)

Frameworks

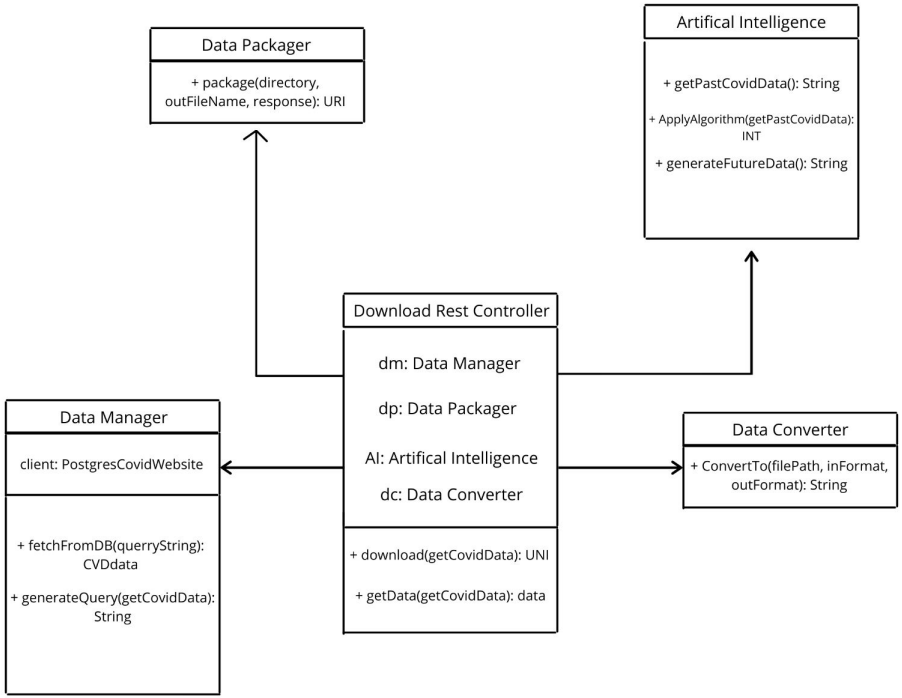


Diagrams

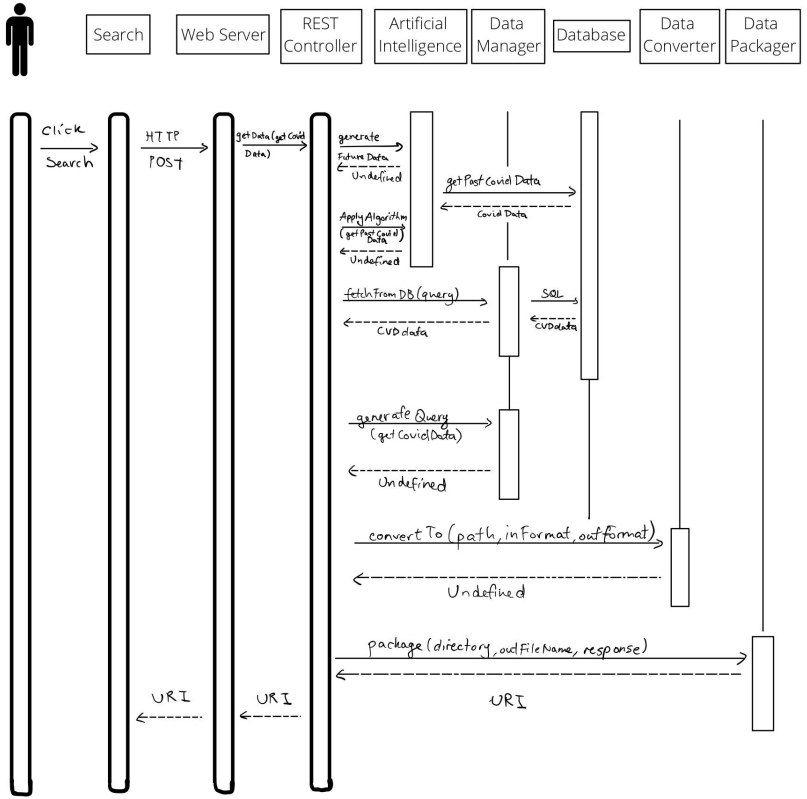
System Diagram



Class Diagram



Sequence Diagram



Any Questions?

GitHub Link: https://github.com/berkkmankk/CSC431