COVID-19-DATA-ANALYSIS-AND-VISUALIZATION

A Project Work Synopsis

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IN

BIG DATA AND ANALYTICS

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Symbol	*Description*
A_{set}	*Area of steel reinforcement bars on tension face*
A_{Sc}	*Area Of steel reinforcement bars on compression face*
$A_{vs.}$	*Area of two legs of the closed stirrups*
b	*The breadth of rectangular beam section*
d	*Effective depth of rectangular beam section*
d'	*Effective cover on compression face*
f_{cave}	*Average compressive stress in concrete*
f_{Sc}	*Stress in steel on the compression side*
f_{ee}	*Characteristic strength of steel reinforcement bars Spacing of the stirrups*
S_{vi}	*Depth of neutral axis from compression face*

ABSTRACT

Since December 2019 the world is passing a deadly complaint caused by a new coronavirus nominated as severe acute respiratory pattern coronavirus 2(SARS- CoV- 2). The complaint associated with this contagion is known as COVID- 19. This project and paper focuses on COVID- 19 grounded on freely available datasets including the bones in Coursera MATLAB course. Data analytics is handed on a number of aspects of COVID- 19 including the symptoms of this complaint, the difference of COVID- 19 with other conditions caused by severe acute respiratory pattern (SARS), Middle East respiratory pattern(MERS), and swine flu. The impact of temperature on the spread of COVID- 19 is also bandied grounded on the datasets. also, data visualization is handed on the comparison of infections in males ladies which shows that males are more prone to this complaint and the aged people are more at threat. Grounded on the data, the pattern in the increase of verified cases is set up to be an exponential wind in nature. Eventually, the relative number of verified, recovered and death cases in different countries are shown with data visualization.

1. INTRODUCTION

1.1 Problem Definition

The COVID-19 outbreak, which first emerged in China, has spread worldwide. On March 11, 2020, the World Health Organization (WHO) declared COVID-19 as a pandemic. The disease has disrupted global trade, employment, and travel, and many governments had to take strict measures to control the spread of the virus and minimize the burden of morbidity and mortality so that health care systems remain functional. In many countries around the world, citizens have been recommended to stay at home and practice social distancing for as long as possible as a primary measure of preventing the spread of COVID-19.

Although apps are successfully used for managing chronic diseases, the ongoing COVID-19 pandemic has pushed the need for app solutions at the forefront to reduce the risk of cross-contamination caused by close contact. this technology has been leveraged in several ways to control the spread of COVID-19. Apps are accessible, acceptable, and easily adopted, and could support social distancing efforts. As such, they have been widely developed and implemented during the previous months to "flatten the curve" of the increasing number of COVID-19 cases, providing knowledge and information to civilians while attempting to relieve the pressure from health care systems.

1.2 Project Definition

The goal of our project is to create a MATLAB program that processes and visualizes COVID-19 pandemic data. Once you load it, you will get a single variable called covid_data that is a large cell array. Each data cell for a given country and date contains a 2-element vector of doubles: the first element is the cumulative case count, while the second is the cumulative number of deaths.

Our program converts this data into a set of objects: one object per country and state. States should be contained by their countries. Countries could be stored in a vector of country objects in the app itself. Another way is to create an instance of the same class we use for countries and states, call it global, and have it store all the countries. The app would then contain the single global object as a property. This option would create a 3-level hierarchy: the global object stores data for the entire world and a vector of country objects, while the objects of countries that have states in the database would store their corresponding states. Again, we can use the same class definition for all three kinds of objects because they store essentially the same kind of data.

1.3 Software Specifications:

- 4 GB RAM minimum, 8 GB RAM recommended.
- 120GB of available disk space minimum, 4 GB RAM recommended.
- 1280 x 800 minimum screen resolution.
- Microsoft Windows 7/8/10 (32 or 64-bit).
- Application Browsers (like Chrome, Safari, Brave, etc.)
- MATLAB

Windows requirements

- Windows (10 recommended)
- 3 GB RAM minimum, 8 GB RAM recommended
- 2 GB of available disk space minimum, 4 GB
- 1280 x 800 minimum screen resolution

Mac OS requirements

- Mac OS X 10.10 (Yosemite) or higher, up to 10.13 (High Sierra)
- 3 GB RAM minimum, 8 GB RAM recommended
- GB of available disk space minimum, 4 GB
- 1280 x 800 minimum screen resolution.