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# **Software Test Plan**

for

# **Customizable Analysis and Visualization Tool for COVID Cases**

**Version 1.0**

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**September 15, 2020**

# Introduction

The purpose of this document is to present a test plan for the customizable analysis and visualization tool for COVID cases. The plan is intended to ensure that the project conforms to all of the requirements, meets the clients needs, and has an effective way to prevent bugs.

The customizable and visualization tool for COVID cases is a website that allows users to perform customizable analyses/visualization of results, and allows users to add additional pieces of data. This test plan will ensure that all of the pieces of this website are tested for the best possible outcome of this product.

This test plan will include our approach to testing, the features that will be tested, and the test cases for those features.

# References

Project Website: <https://github.com/Senior-Design-CovidDash/CovidDashProjectSite>

COVID Dashboard Example:

<https://fdoh.maps.arcgis.com/apps/opsdashboard/index.html#/8d0de33f260d444c852a615dc7837c86>

IEEE Template for Test Plan Documents:

<https://jmpovedar.files.wordpress.com/2014/03/ieee-829.pdf>

Requirements Document:

<https://docs.google.com/document/d/1dZ7I0hKARuSK7PeoY5A3o9ONUjzi40QPXdqYXp8RKSk/edit#heading=h.viiz8vuh0da1>

# Approach

- What metrics will be collected?
  - Data will be collected from each test case to indicate whether the test passed or failed
- How often will we test?
  - We will perform tests on each working feature at least once every milestone to verify that our features are functioning correctly.

# Features To Be Tested

*This is a listing of what is to be tested from the **USERS** viewpoint of what the system does.*

## 1. Customizable Operations on Variables

- Selecting different variables and operations to have its data displayed on the dashboard

## 2. Customizable Plotting of Results

- Selecting data into a chart and plotting/graphing it

## 3. Save Customizable Plots to Custom Workspace

- Saving custom dashboards into a unique workspace

## 4. Import Additional Datasets Chosen by User

- Importing outside data sources into the dashboard

## 5. Layer Datasets/Operations in a single Plot

- Selecting multiple types of plots and layering them on top of each other to create one single plot that includes the combined data

## 6. Automatic Updating of Datasets

- Data is being updated daily on users given datasets

## 7. Shared, Curated, and Private Datasets

- Selecting data to be private, shared, or applying for it to be curated

# Test Cases

Listed are possible test cases that could be used to verify that each feature does what it is supposed to do according to the requirements document.

## 1. Customizable Operations on Variables

- A. **Input:** User selects to rank from highest to lowest the number of cases per county in Florida

**Expected output:** A list of data is given with the proper ranking of covid cases per county in Florida

- B. **Input:** User selects the mean operation with the variables cases in Florida per day.

**Expected output:** The mean number of cases per day in Florida is displayed.

## 2. Customizable Plotting of Results

- A. **Input:** The user selects from a number of operations and charts. User selects cases in Florida vs time to be displayed in a line graph

**Expected output:** The dataset the user is currently working on will be filtered and displayed in a line graph

- B. **Input:** The user selects from a number of operations and charts. User selects percent of deaths per county in Florida to be displayed in a pie chart.

**Expected output:** The dataset the user is currently working on will be filtered and displayed in a pie chart

## 3. Save Customizable Plots to Custom Workspace

- A. **Input:** After performing a customizable analysis, a user who is logged in already will click on the “Save To Workspace” button.

**Expected output:** If the user is logged in, a snackbar (“Analysis saved. Click to navigate to workspace”) will be visible for the user. The user will then be able to click on the snackbar, which will navigate the user to the workspace. The list of saved analyses will be displayed, and the newly saved analysis is expected in the list. Failure to save analysis will prompt the user with a snackbar: “Failed to save analysis. Please try again”)

- B. **Input:** After performing a customizable analysis, a user who is **not** logged in will click on the “Save To Workspace” button.

**Expected output:** After clicking on the save button If the user is not logged in, the user will be asked to create a user or log in to access the workspace.

#### 4. Import Additional Datasets Chosen by User

- A. **Input:** User imports from a URL. The user will paste/write a URL into an input field if the user wants the application to extract updated data from this datasource daily.

**Expected output:** The accepted file format will be prompted to the user. Correct input will give the user a preview of the data imported so the user is sure the format is correct. Unexpected input will prompt the user with a snackbar saying: "Not able to import data. Check the file type and url, and try again."

- B. **Input:** The user imports a file from the computer.

**Expected Output:** The accepted file format will be prompted to the user. Correct input will give the user a preview of the data imported so the user is sure the format is correct. Unexpected input will prompt the user with a snackbar saying: "Not able to import data. Check the file type and url, and try again."

#### 5. Layer Datasets/Operations in a Plot

- A. **Input:** User creates two plots: one with cases vs time and one with deaths vs time. They then select to layer the plots into one line graph.

**Expected output:** The two plots are layered, creating one singular line graph with cases and deaths vs time.

- B. **Input:** User creates two plots: one with cases per age group and one with hospitalizations per age group. They then select to layer the plots into one bar graph.

**Expected Output:** The two plots are layered, creating one singular bar graph with the cases and hospitalizations per age group.

#### 6. Automatic Updating of Datasets

- A. **Input:** The inputs for this feature are the default datasets and the user-imported datasets. At a specific time, the datasets will be imported from the URL stored in the database. These URLs are already in the system, so there is no need to input them again. Input checking is therefore not needed.

**Expected output:** The expected output is a response code and a date. The codes can be similar to HTTP response codes: 100 - Informational, 200 - successful, 400 - client error, 500 - server error. The date will give information on the last successful update for the particular dataset.

## 7. Shared, Curated, and Private Datasets

### A. Private

**Input:** User selects to make a dataset private

**Expected output:** Dataset can only be seen by user

### B. Shared

**Input:** User selects to share a dataset

**Expected Output:** The dataset can be viewed by other users

### C. Curated

**Input:** User submits an application for their dataset to be checked by the admin to become curated

**Expected Output:** The dataset is approved by the admin and available to the public