

# Mastercard D&S Platforms Team India

## COVID-19 Project Test Plan

May 24, 2020

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# POINT OF CONTACTS

|                       |   |
|-----------------------|---|
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| PM-D Point of Contact |   |
| Key Clients           | Mastercard Internal Team                          |

# INTRODUCTION

The scope of this project is to create an interactive dashboard which can enable users to perform the following tasks:

1. Study the spread of the COVID-19 Pandemic over time and across 5 countries (India, Italy, Germany, Singapore, USA)
2. Perform detailed analysis by further stratification of the spread based on demographic indicators (age, income, population density)
3. Study recoveries and deaths in addition to the positive cases over time and across the selected geographies
4. Analyse the impact of the spread on 3 Industries (Airlines, Travel & Entertainment, Food)
5. Study and Compare the Government Policy actions and interventions on the 5 countries, as well as their impact on various indicators

The final deliverables of the project are:

1. Working link of the final web dashboard
2. All the code scripts on the Github repository of the project
3. Proper Documentation of each code snippet for the entire project
4. Presentation of the project with individual experience and learning

The task of the SQE during the course of this project would be to ensure the following:

1. Prepare the test plans for the features and components of the project
2. Write automated tests for the working of all Front-End features of the dashboard and ensure they are working properly across browsers and locations
3. Write Front-End Testing to verify graphs and all statistical information is being displayed properly
4. Write and execute analytic testing to verify data on graphs
5. Perform API testing for all APIs to ensure that the entire code pipeline is running smoothly and all use cases and edge cases have been handled.

# FEATURE SUMMARY

## Requirements

### 1. Daily New Cases Graph for each country on the Events Page

On clicking a country name on the Events page, the daily new cases plot (Confirmed) will be displayed

### 2. Timeline of Major events for each country on the Events Page

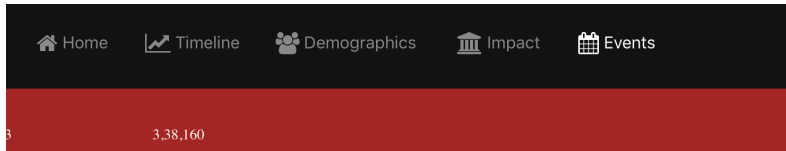
On clicking a country name on the Events page, a timeline containing dates and important events including Government Actions and announcements will be displayed.

### 3. Country-name cards for 5 countries

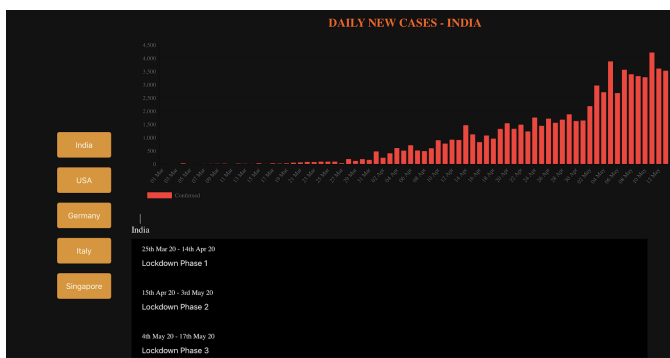
The Country name cards for each of the 5 countries are provided on the left section of the Impact page to display the graphs for the selected country.

# Mockups

## 1. Events Page



## 2. Daily New Cases Graph with Timeline



## Github Project Task Link

The task status for this feature can be accessed at this [link](#) .

# DO NOT FORGET LIST

|  | Feature                | Status |
|--|------------------------|--------|
| Check scaling of graphs during Zoom In/Out                               | Daily New Cases Graphs |        |
| Check if the Events are updated  | Events Timeline        |        |
| Check if the selected country's card changes color to indicate selection | Country card           |        |

# FRONT END TESTING

| Requirement           | Case # | Test Steps   | Expected Results   | Screenshot | Status | Bugs/ Notes |
|-----------------------|--------|--|--|------------|--------|-------------|
| Events Page           | 1      | Click on 'Events' page button in the Header bar at the top | <input type="checkbox"/> Daily New Cases plot for India should be displayed at the top (default)<br><input type="checkbox"/> Timeline section for India should be displayed below the plot<br><input type="checkbox"/> 5 Country Cards should be displayed at the left<br><input type="checkbox"/> Worldwide Stats bar should be displayed at the top<br><input type="checkbox"/> Title of the page ('Events') should be legible (Font, Spelling, Color, Size should be correct)<br><input type="checkbox"/> Title of the website ('COVID-19 TRACKER') should be legible (Font, Spelling, Color, Size should be correct) |            |        |             |
|                       |        |  |  |            |        |             |
|                       |        |  |  |            |        |             |
| Country-wise plot and | 1      | Click on country   | <input type="checkbox"/> All country names should fit within   |            |        |             |



|          |  |                  |  |  |  |  |
|----------|--|------------------|--|--|--|--|
| timeline |  | card at the left | <p>the boundary of the card</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Spelling, font size and colour for all countries should be clearly legible and consistent</li> <li><input type="checkbox"/> Only the 5 country names visible, without any repetitions or extraneous names</li> <li><input type="checkbox"/> The selected country's card should indicate selection by changing colour</li> <li><input type="checkbox"/> The plots should be updated with the selected country's data</li> <li><input type="checkbox"/> The Title, axes labels and legend should be present with legible font size and colour</li> <li><input type="checkbox"/> Data on the graph is updated as per the latest day</li> <li><input type="checkbox"/> Scale of the graph is appropriate as per the range of the data</li> <li><input type="checkbox"/> Range of values on the Y and X axes should suit the data</li> <li><input type="checkbox"/> Timeline should be updated with the latest events</li> <li><input type="checkbox"/> Dates and their corresponding events should match</li> <li><input type="checkbox"/> Dates and events</li> </ul> |  |  |  |
|----------|--|------------------|--|--|--|--|

|  |   |  |  |  |  |  |
|--|---|--|--|--|--|--|
|  |   |  | Titles should be legible (Font size, color, spelling should be correct)  |  |  |  |
|  | 2 | Hover cursor over the country card               | <input type="checkbox"/> Cursor icon of the mouse should convert to hand icon to enable select option for each country<br><input type="checkbox"/> The country name should be highlighted when the cursor hovers over it |  |  |  |
|  | 3 | Hover cursor over graph                          | <input type="checkbox"/> Cursor should change into a tool-tip to enable detailed inspection of the graph<br><input type="checkbox"/> Information about that data point should be visible                                 |  |  |  |
|  |   |  |  |  |  |  |
|  |   |  |  |  |  |  |
|  |   |  |  |  |  |  |
|  | 4 | Zoom In/Out on the webpage                       | <input type="checkbox"/> The shape of the graph should adjust itself accordingly<br><input type="checkbox"/> The shape of the timeline section should adjust itself accordingly  |  |  |  |
|  | 1 | Visit 'Events Page' using Chrome browser/d river | <input type="checkbox"/> Title on the Chrome tab should read 'COVID19 Visualiser'<br><input type="checkbox"/> The icon on the tab should be MC logo  |  |  |  |

Graph & Timeline Test Cases for each Country:

| Country | Test Case | Graph Category        | Expected Results  | Screenshot | Notes/Bugs |
|---------|-----------|-----------------------|---|------------|------------|
| India   | 1.11      | Daily New Cases Graph | <ul style="list-style-type: none"> <li><input type="checkbox"/> Title of the plot is legible (Font size, colour, spelling is correct)</li> <li><input type="checkbox"/> Axes labels for both Y and X axis are legible (Font size, colour, spelling is correct)</li> <li><input type="checkbox"/> Legend is clearly visible</li> <li><input type="checkbox"/> Labels in the Legend are legible (Font size, colour, spelling is correct)</li> <li><input type="checkbox"/> Data on the graph is updated</li> <li><input type="checkbox"/> Scale of the graph is appropriate as per the range of the data</li> <li><input type="checkbox"/> Cursor should change into a tool-tip to enable detailed inspection of the graph</li> </ul> |            |            |
|         | 1.12      | Events Timeline       | <ul style="list-style-type: none"> <li><input type="checkbox"/> Timeline should be updated with the latest events</li> <li><input type="checkbox"/> Dates and their corresponding events should match</li> <li><input type="checkbox"/> Dates and events Titles</li> </ul>  |            |            |

|       |      |                       |   |  |  |
|-------|------|-----------------------|---|--|--|
|       |      |                       | should be legible (Font size, color, spelling should be correct)  |  |  |
| Italy | 1.21 | Daily New Cases Graph | <input type="checkbox"/> Title of the plot is legible (Font size, colour, spelling is correct)<br><input type="checkbox"/> Axes labels for both Y and X axis are legible (Font size, colour, spelling is correct)<br><input type="checkbox"/> Legend is clearly visible<br><input type="checkbox"/> Labels in the Legend are legible (Font size, colour, spelling is correct)<br><input type="checkbox"/> Data on the graph is updated<br><input type="checkbox"/> Scale of the graph is appropriate as per the range of the data<br><input type="checkbox"/> Cursor should change into a tool-tip to enable detailed inspection of the graph |  |  |
|       | 1.22 | Events Timeline       | <input type="checkbox"/> Timeline should be updated with the latest events<br><input type="checkbox"/> Dates and their corresponding events should match<br><input type="checkbox"/> Dates and  |  |  |
|       |      |                       |   |  |  |

|         |      |                       |   |  |  |
|---------|------|-----------------------|---|--|--|
|         |      |                       | events Titles should be legible (Font size, color, spelling should be correct)  |  |  |
| Germany |      |                       | <input type="checkbox"/> Title of the plot is legible (Font size, colour, spelling is correct)<br><input type="checkbox"/> Axes labels for both Y and X axis are legible (Font size, colour, spelling is correct)<br><input type="checkbox"/> Legend is clearly visible<br><input type="checkbox"/> Labels in the Legend are legible (Font size, colour, spelling is correct)<br><input type="checkbox"/> Data on the graph is updated<br><input type="checkbox"/> Scale of the graph is appropriate as per the range of the data<br><input type="checkbox"/> Cursor should change into a tool-tip to enable detailed inspection of the graph |  |  |
|         | 1.31 | Daily New Cases Graph |   |  |  |
|         | 1.32 | Events Timeline       | <input type="checkbox"/> Timeline should be updated with the latest events<br><input type="checkbox"/> Dates and their corresponding events should match  |  |  |

|           |      |                       |   |  |  |
|-----------|------|-----------------------|---|--|--|
|           |      |                       | <input type="checkbox"/> Dates and events Titles should be legible (Font size, color, spelling should be correct)   |  |  |
| Singapore | 1.41 | Daily New Cases Graph | <input type="checkbox"/> Title of the plot is legible (Font size, colour, spelling is correct)<br><input type="checkbox"/> Axes labels for both Y and X axis are legible (Font size, colour, spelling is correct)<br><input type="checkbox"/> Legend is clearly visible<br><input type="checkbox"/> Labels in the Legend are legible (Font size, colour, spelling is correct)<br><input type="checkbox"/> Data on the graph is updated<br><input type="checkbox"/> Scale of the graph is appropriate as per the range of the data<br><input type="checkbox"/> Cursor should change into a tool-tip to enable detailed inspection of the graph |  |  |
|           | 1.42 | Events Timeline       | <input type="checkbox"/> Timeline should be updated with the latest events<br><input type="checkbox"/> Dates and their corresponding events should  |  |  |
|           |      |                       |   |  |  |

|     |      |                       |   |  |  |
|-----|------|-----------------------|---|--|--|
|     |      |                       | <ul style="list-style-type: none"> <li>match</li> <li><input type="checkbox"/> Dates and events Titles should be legible (Font size, color, spelling should be correct)</li> </ul>  |  |  |
| USA |      |                       | <ul style="list-style-type: none"> <li><input type="checkbox"/> Title of the plot is legible (Font size, colour, spelling is correct)</li> <li><input type="checkbox"/> Axes labels for both Y and X axis are legible (Font size, colour, spelling is correct)</li> <li><input type="checkbox"/> Legend is clearly visible</li> <li><input type="checkbox"/> Labels in the Legend are legible (Font size, colour, spelling is correct)</li> <li><input type="checkbox"/> Data on the graph is updated</li> <li><input type="checkbox"/> Scale of the graph is appropriate as per the range of the data</li> <li><input type="checkbox"/> Cursor should change into a tool-tip to enable detailed inspection of the graph</li> </ul> |  |  |
|     | 1.51 | Daily New Cases Graph |   |  |  |
|     | 1.52 | Events Timeline       | <ul style="list-style-type: none"> <li><input type="checkbox"/> Timeline should be updated with the latest events</li> <li><input type="checkbox"/> Dates and their corresponding</li> </ul>  |  |  |

|  |  |  |   |  |  |
|--|--|--|---|--|--|
|  |  |  | <div>events should match</div> <div><input type="checkbox"/> Dates and events Titles should be legible (Font size, color, spelling should be correct)</div> |  |  |
|--|--|--|---|--|--|



# PERFORMANCE TESTING

| Requirement     | Case # | Test Steps   | Time Consumed | Status | Notes/Bugs |
|-----------------|--------|--|---------------|--------|------------|
| Events Page     | 1      | Access Events page   |               |        |            |
| Graph           | 1      | Wait for the default graphs to load  |               |        |            |
|                 | 2      | Click on country card and wait for the selected country's graph to load    |               |        |            |
| Events Timeline | 1      | Wait for the default Event Timeline to load                                |               |        |            |
|                 | 2      | Click on country card and wait for the selected country's timeline to load |               |        |            |

# AUTOMATION TESTING

| Requirement                       | Scenario# | Operation  | Pull Request Link |
|-----------------------------------|-----------|--|-------------------|
| Access Events page                | 1         | Open Events page by clicking on the Events button in the header bar at the top |                   |
| Access Country graph and timeline | 2         | Click on each of the country cards on the left                                 |                   |
|                                   | 3         | Hover cursor over the graph  |                   |

# ANALYTIC TESTING

| Scenario | DB                       | Description   | Value                  | Expected  | Actual | Status |
|----------|--------------------------|---------------|------------------------|---|--------|--------|
| 1        | <a href="#">CovidViz</a> | Test Plot     | Data is NULL           | 'No Data available' should be displayed   |        |        |
| 2        |                          |               | Data is 0              | 0 should be displayed   |        |        |
| 3        |                          |               | Data input is Negative | The corresponding negative value should be displayed  |        |        |
| 4        |                          |               | Value is $10^9$        | Complete value should be displayed without any overlap                                      |        |        |
| 5        |                          | Test Timeline | Data is NULL           | 'No Data available' should be displayed   |        |        |
| 6        |                          |               | Text is too long       | The entire text string should be adjusted and displayed in the section, without any overlap |        |        |

## Testing Approach:

I will manually compare the values on the plots in the dashboard with the data tables at the Backend Database. In case of a mismatch, the error will be reported to the SDEs for debugging

For the timeline, directly manipulating the javascript code and observing the results on the Front-End would work