Testing Report

J.U.S.T.I.C.E.

Judgment Utility Space Time Intensive Crime Evaluator

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4/25/2018

JUSTICE
Testing Report

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1. Introduction

Testing is a vital requirement for delivering a consistent and accurate product.

1.1 Purpose of This Document

This document is intended for quality assurance teams, system administrators, and other users interested in reviewing the test procedure used for the development of the first iteration of JUSTICE. This report defines and analyzes the testing process and details the results.

1.2 References

Use cases from the JUSTICE System Requirements Specification document.

2. Testing Process

2.1 Description

Our testing process is based on the use cases outlined in the SRS documentation. The goal is to satisfy test conditions derived from the original use cases.

2.2 Testing Sessions

Date	Location	Time Started	Time Ended	Performed By	Use Cases
4/25/2018	Home	8:30pm	9:30pm	Nicholas Sorauf	Map Panning, Map Zooming, View Tables, Sort Tabular Data, Adjust Columns in Table View, Pagination in Table View, Manage Timeline

2.3 Impressions of the Process

A testing procedure built around checking whether or not the use cases were satisfied worked well to verify the base functionality of the JUSTICE application. We could be sure that requirements were tested accurately through the use of test conditions derived from the use cases.

This process served as a guidepost to show us which areas of the JUSTICE application still needs the most work as we continue our development.

3. Test Results

It is difficult to break each use case down into equivalence partitions by establishing boundary conditions and common conditions, because the JUSTICE application does not require much user input and the input it does require is limited to checkboxes, single selections from dropdown menus, or buttons. This was done by design to both make the application easier to use and to prevent us from having to worry about the wide range of possible invalid inputs a user can give when given a search bar to type in.

3.1 Testing Suite

Use Case	**Viewing a Heat Map**
Purpose	To confirm that the data subset displays properly when viewing the Heat Map
Expected Results	The Heat Map properly displays the data.
Extra Step	Apply additional filters to confirm that the Heat Map updates while it is being viewed.

Use Case	**Viewing a Pin Map**
Purpose	To confirm that the data subset displays properly when viewing the Pin Map
Expected Results	The Pin Map properly displays the data.
Extra Step	Apply additional filters to confirm that the Pin Map updates while it is being viewed.

Use Case	**Map Zooming**
Purpose	To confirm that the display of both maps adapt to the user's attempts to zoom in and out.
Expected Results	The current map display updates to display the map at a different zoom level.
Boundary Conditions	Prevent the user from zooming out too far as the focus should remain on Baltimore.

Use Case	**Map Panning**
Purpose	To confirm that the display of both maps adapt to the user's attempts to pan the map around.
Expected Results	The current map display updates to display the map after it has been panned in a given direction.
Boundary Conditions	Prevent the user from panning away from Baltimore, MD

Use Case	**View Bar Graph**
Purpose	To confirm that the user is able to visualize the current data subset by selecting categories for the X and Y axes.
Expected Results	A bar graph is created using the current data subset and the chosen axes.

Use Case	**View Line Graph**
Purpose	To confirm that the user is able to visualize the current data subset by selecting categories for the X and Y axes and the number of trend lines to view based off of the selected categories.

Expected Results	A line graph is created using the current data subset, the chosen axes, and the number of trend lines.

Use Case	**View Pie Graph**
Purpose	To confirm that the user is able to visualize the current data subset by selecting a category to base the pie graph on.
Expected Results	A pie graph is created using the current data subset and the chosen category.

Use Case	**View Tables**
Purpose	To confirm that the table view displays properly and updates when new filters are applied or old filters are removed.
Expected Results	The table is propagated with the proper data based off of the currently applied filters.

Use Case	**Sort Tabular Data**
Purpose	To confirm that data in the table view is properly sorted.
Expected Results	Data columns with words are first sorted from A-Z and then from Z-A if sorted again. Data columns with numbers are first sorted from least to greatest and then from greatest to least if sorted again.

Use Case	**Filter Data**
Purpose	To confirm that the only data used in any view is the data that are elements of the subset of the database created by applying filters. (This includes the time related filters that are a part of the

	timeline).
Expected Results	Applying a new filter creates and displays a smaller subset and removing a previous filter creates and displays a larger subset.

Use Case	**Adjust Columns in Table View**
Purpose	To allow users to shrink data columns they are less interested in or enlarge data columns they are more interested in.
Expected Results	The size of the data columns are adjusted in the way one would expect based on whether the intention was to shrink or to enlarge.
Boundary Conditions	Prevent the column from being shrunk too much to make sure that users are still able to undo column adjustments in the future.

Use Case	**Pagination in Table View**
Purpose	To allow users to choose the number of data entries they want to see on each page.
Expected Results	The table view updates based off of the user's choice and displays the given number of entries.

Use Case	**View Single Crime**
Purpose	To focus on the details of a specific data entry.
Expected Results	Clicking on a Pin from the Pin Map or an entry in the table will create a pop-up featuring the details of that specific crime.

Use Case	**Manage Timeline**
Purpose	To allow for a more intuitive way to filter the data by date and time through the use of two sliders.
Expected Results	Adjusting either the date slider or the time slider will filter the data into a different subset of the entire dataset. All of the views should update based off of the new filter conditions.

3.2 Test Results

The results from testing are outlined below. Completed actions are showcased using a before and after picture.

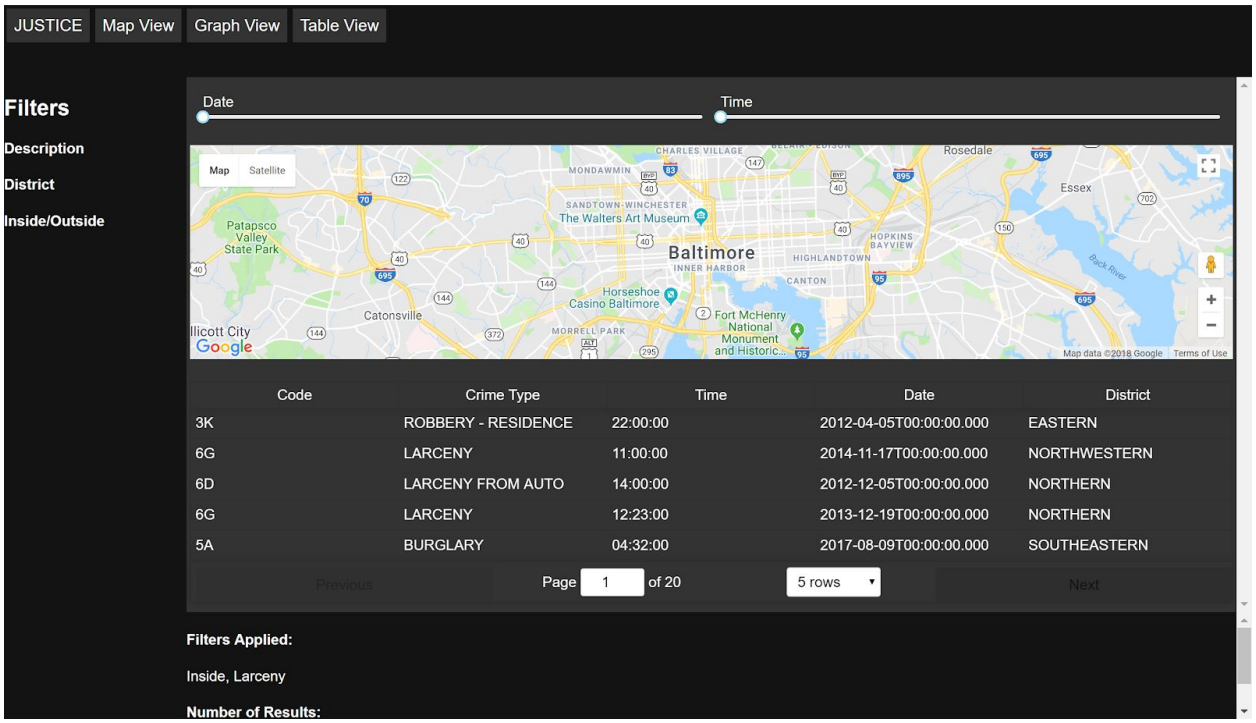
3.2.1 View Heat Map

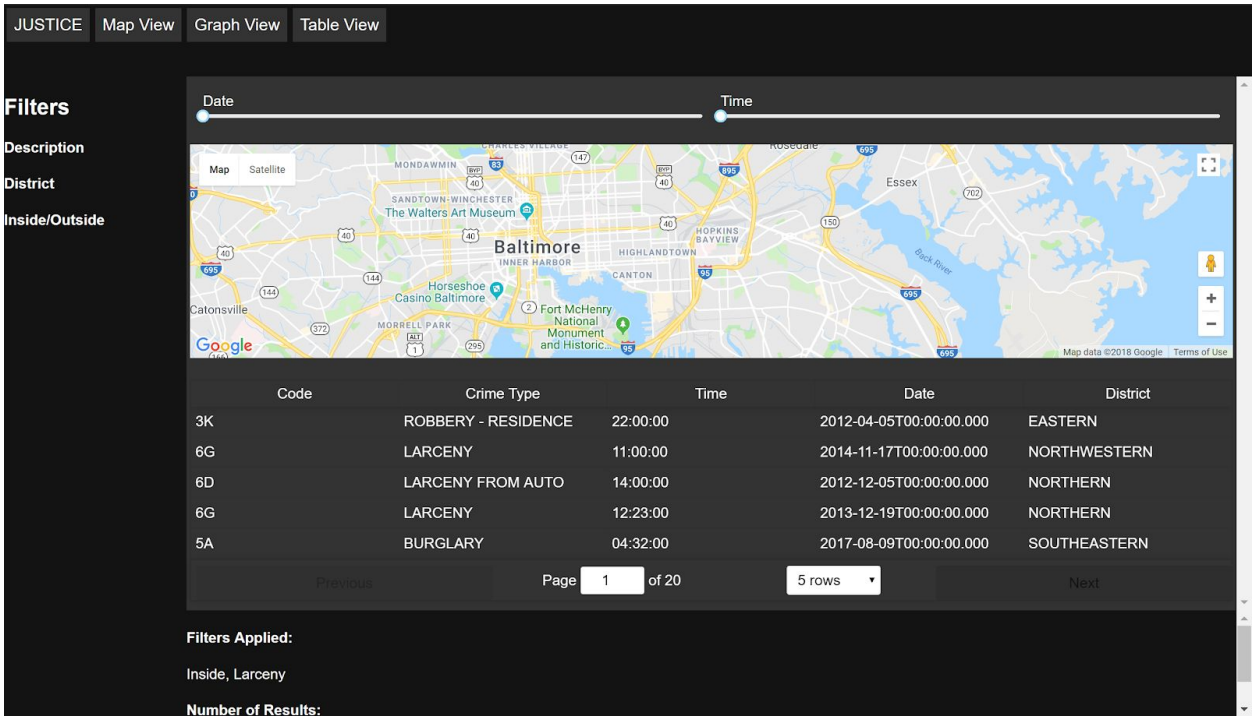
This functionality has not been implemented yet.

3.2.2 View Pin Map

This functionality has not been implemented yet.

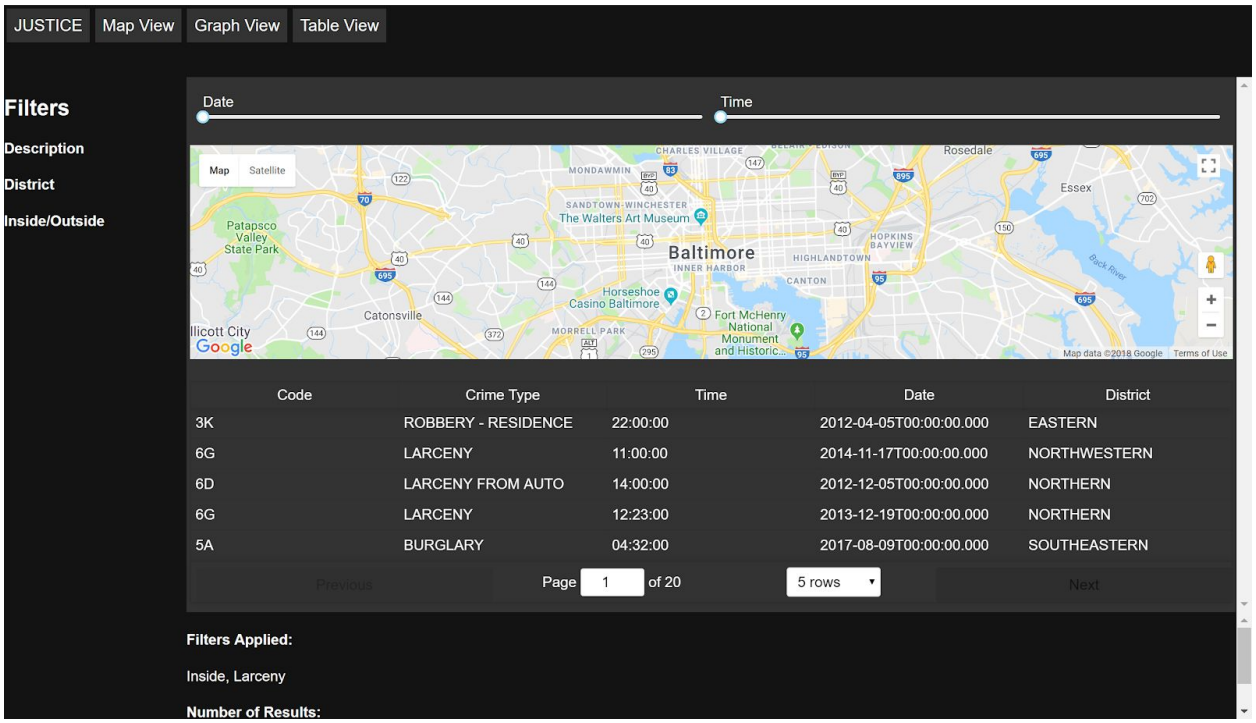
3.2.3 Map Panning

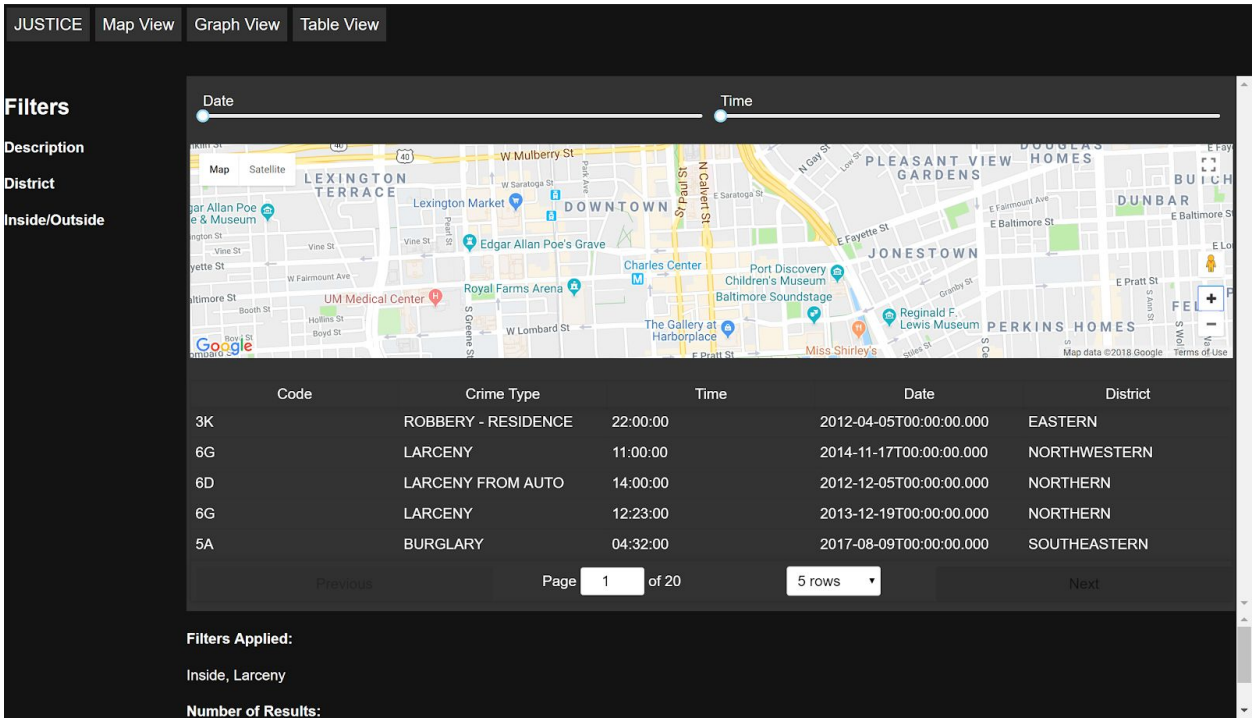




The map has successfully been panned over to the left.

3.2.4 Map Zooming





The map has successfully been zoomed in for a more detailed street view.

3.2.5 View Bar Graph

This functionality has not been implemented yet.

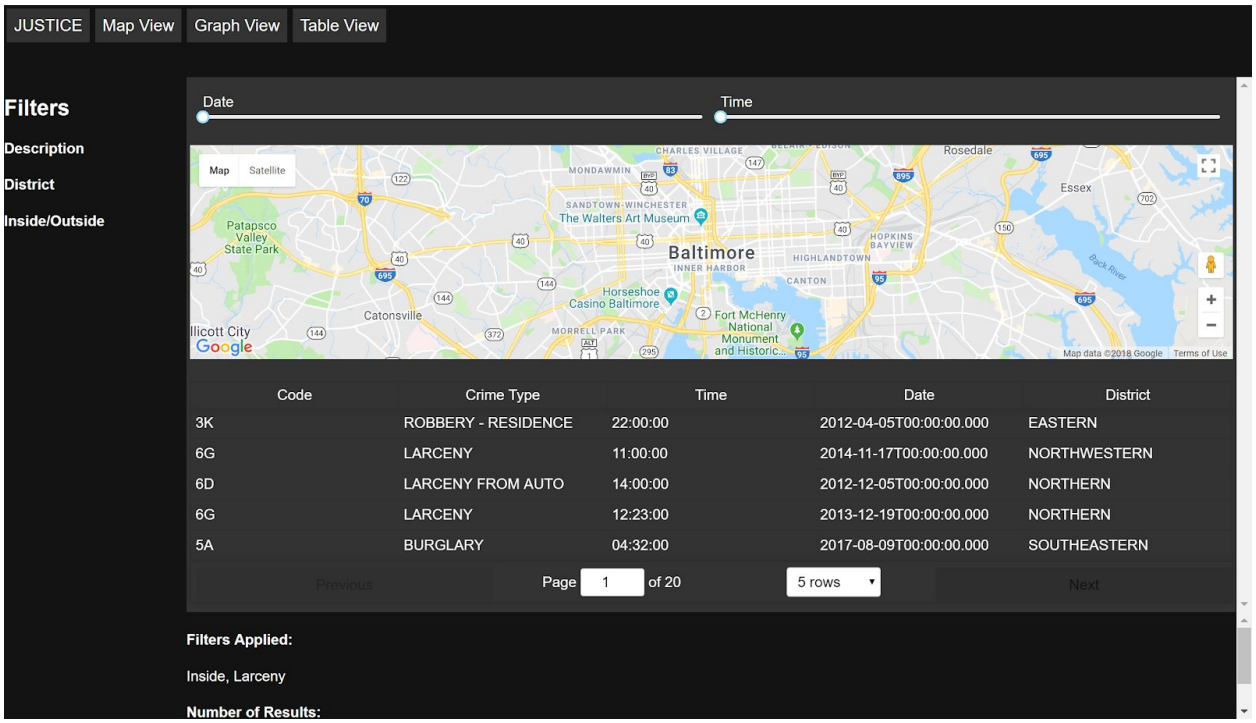
3.2.6 View Line Graph

This functionality has not been implemented yet.

3.2.7 View Pie Graph

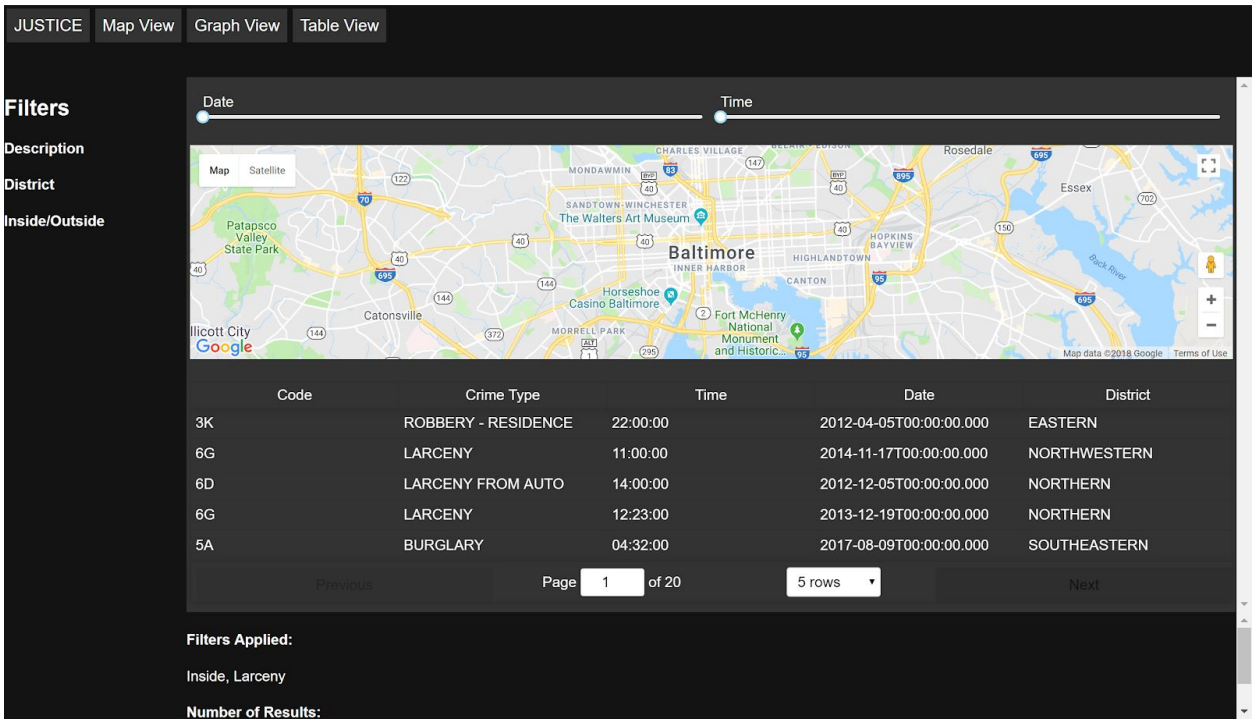
This functionality has not been implemented yet.

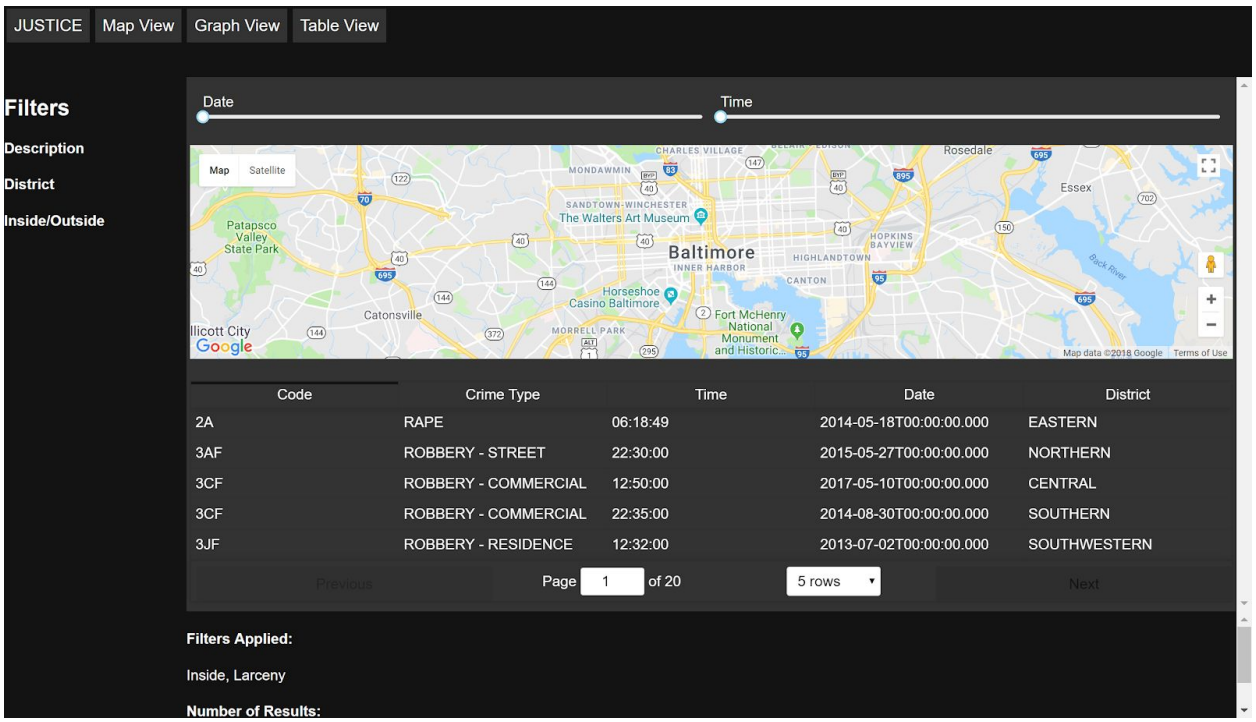
3.2.8 View Tables



A single picture showcasing the existence of the table view. The ability to view the table without the map on the screen has not been implemented yet.

3.2.9 Sort Tabular Data



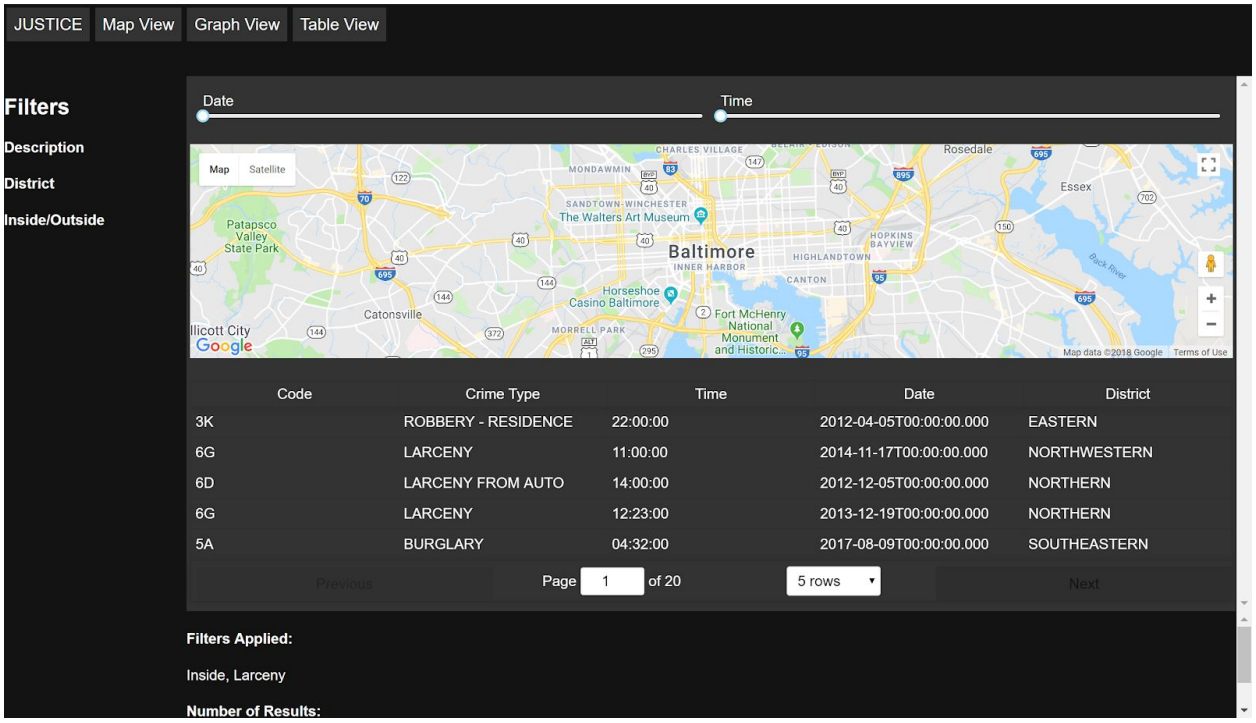


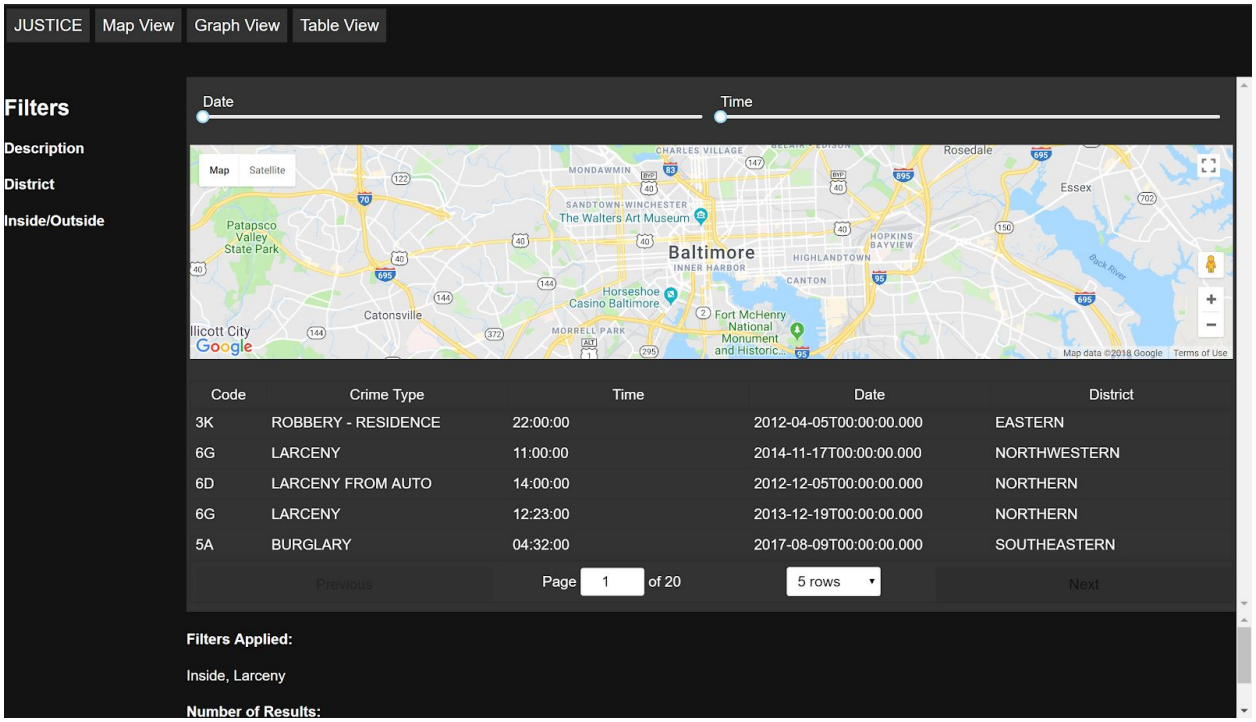
The table has been successfully sorted alphabetically by crime code.

3.2.10 Filter Data

This functionality has not been implemented yet.

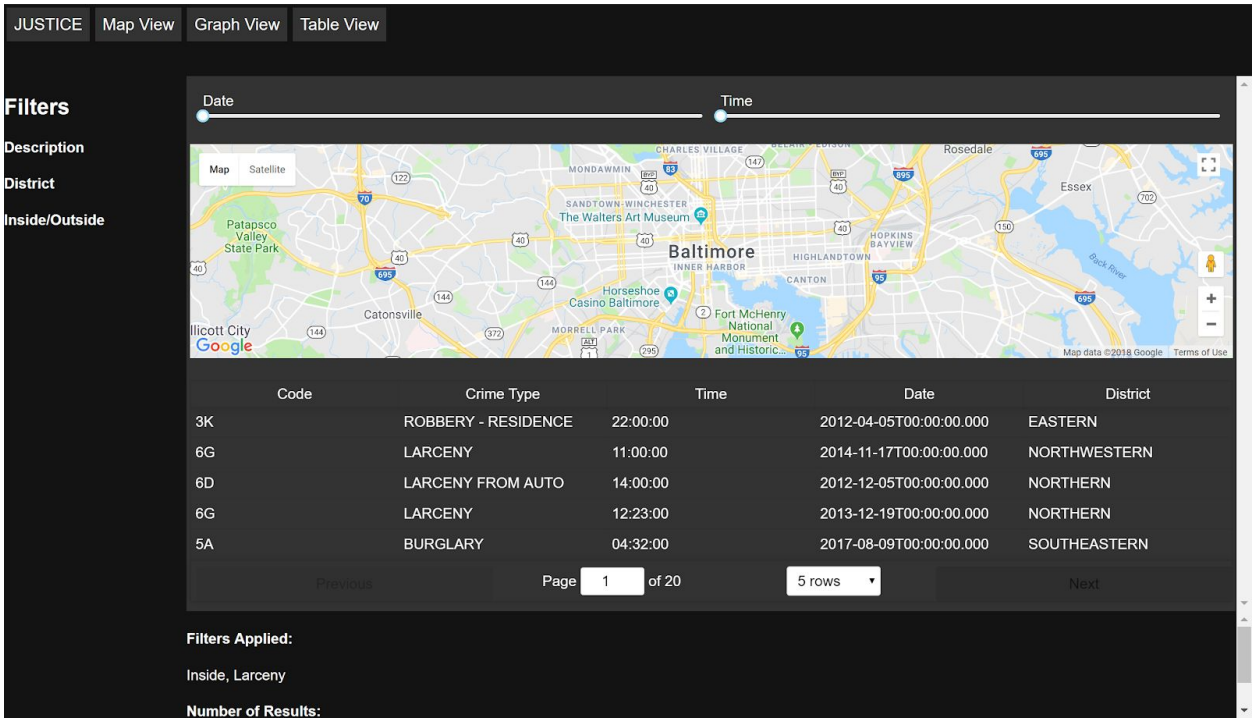
3.2.11 Adjust Columns in Table View

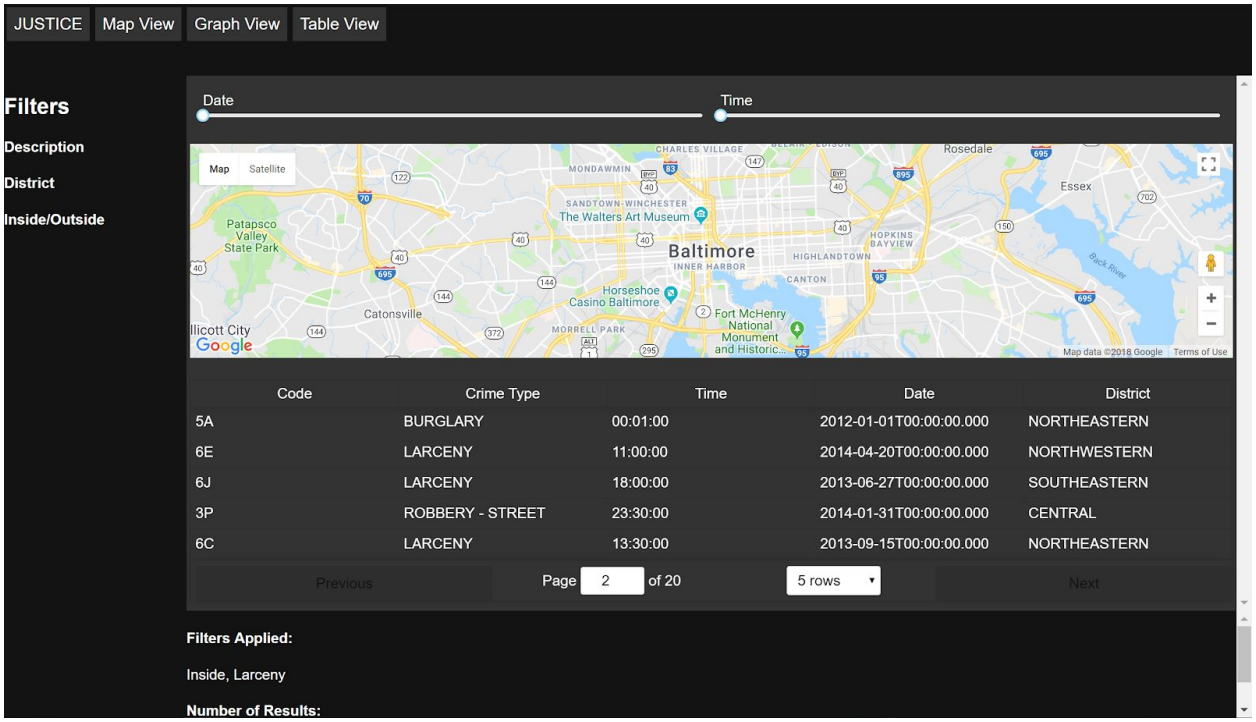




The crime code column has been successfully shrunk to a smaller width.

3.2.12 Pagination in Table View



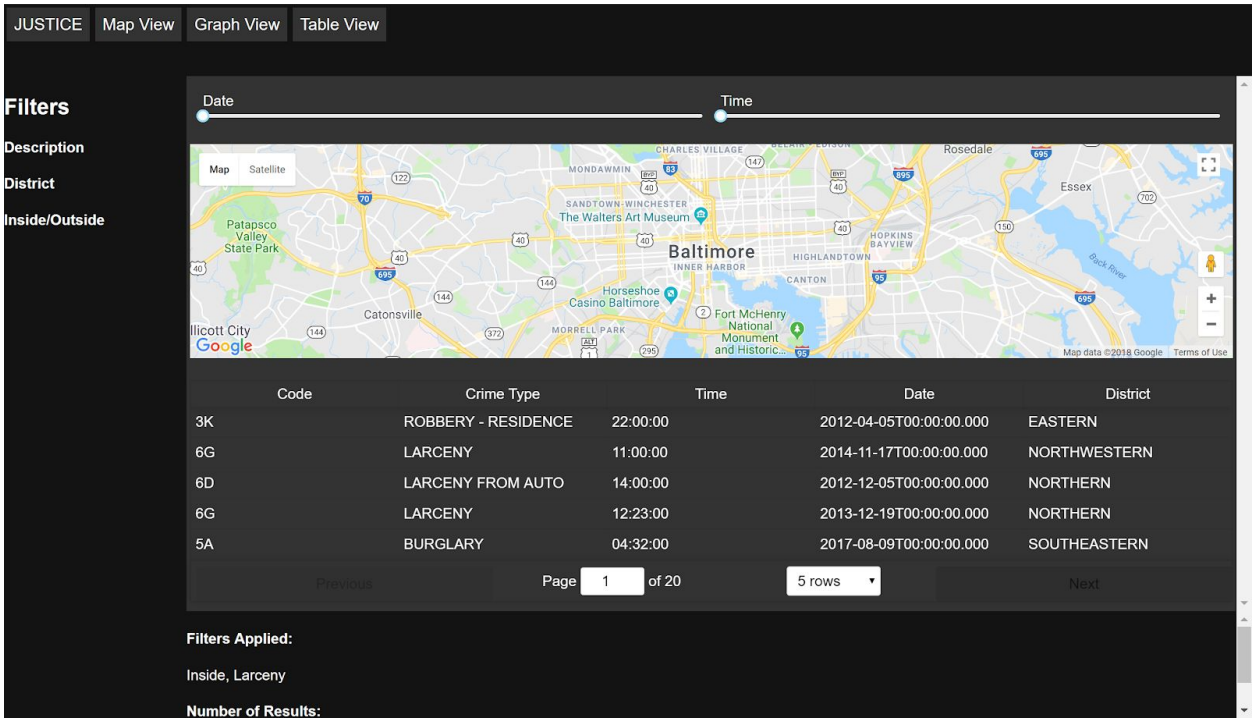


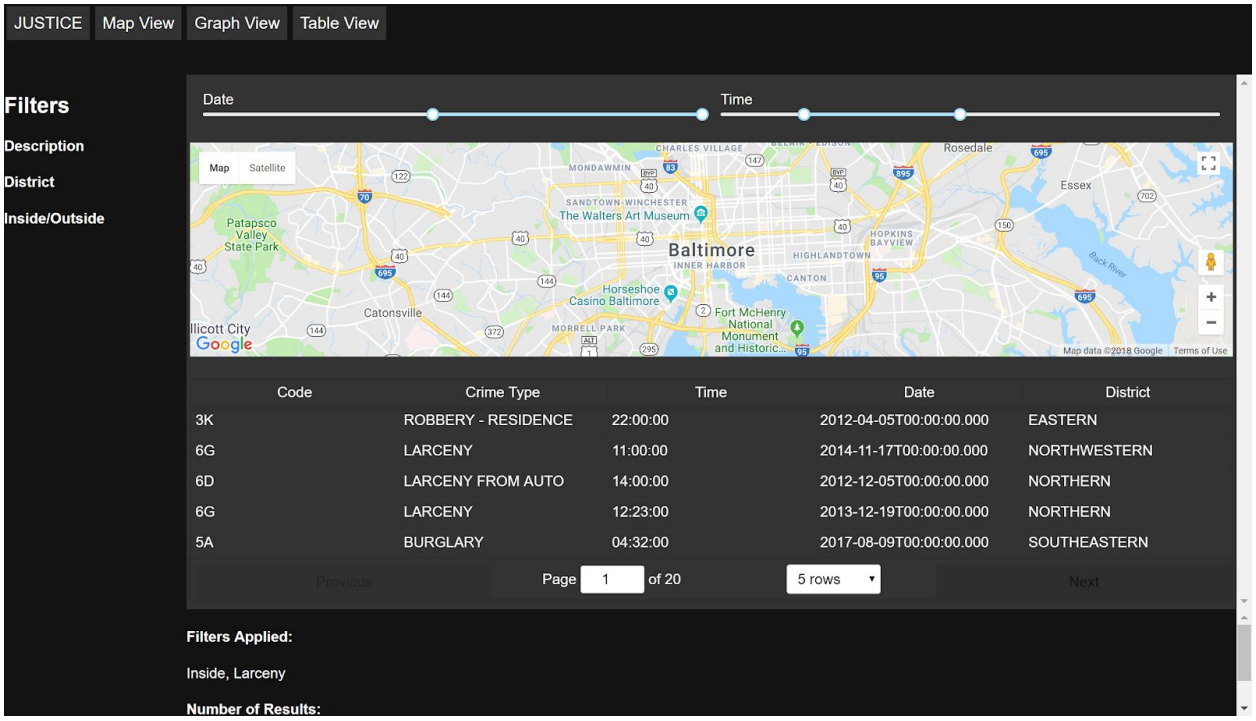
The table view can successfully display data across multiple pages.

3.2.13 View Single Crime

This functionality has not been implemented yet.

3.2.14 Manage Timeline





The date and time sliders can successfully be modified. The filtering of the data by date and time via the sliders has not been implemented yet.

Appendix A – Team Review Sign-off

This document has been collaboratively written by all members of the team. In addition, all team members have reviewed this document and agree on both the content and the format. Any disagreements or concerns are addressed in team comments below.

Team

Name _____ Date _____

Print

Name _____ Date _____

Signature

Comments

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Name _____ Date _____

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Name _____ Date _____

Signature

Comments

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Name _____ Date _____

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Appendix B – Document Contributions

The bulk of this document was written and formatted by Andrew McLamb. This document was written by one person to let the other team members focus on the

development of the project. Nicholas Sorauf provided the pictures for the testing results section.