**Software Requirements Specification**

**for**

Restaurant Violation Visualizer

**Version 1.0 approved**

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**Revision History**

| **Name** | **Date** | **Reason For Changes** | **Version** |
| --- | --- | --- | --- |
| Initial version | 2/15/22 | n/a | 0.1 |
| Submission draft | 2/21/22 | Filled in system spec | 1.0 |

# **Introduction**

## **Purpose**

The purpose of this document is to define the requirements for the initial version of the Restaurant Violation Visualizer. This document defines the entirety of a system which will take NYC restaurant inspection data from the DOHMH and make it searchable and visualizable, allowing for simple navigation of often difficult to parse data.

## **Document Conventions**

This document follows no special typographical conventions.

## **Intended Audience and Reading Suggestions**

The intended audience for this document is project managers and key stakeholders. This document contains information regarding what the software is intended for, which includes, but is not limited to, its overall description, its user interface, and the features the software offers.

## **Product Scope**

The software’s purpose is to provide a map-based visualization of restaurants in New York City based on data collected from the New York Department of Health and Mental Hygiene. Users will be able to locate restaurants based on health inspection results, or locate health inspection results based on the restaurant.

## **References**

* DOHMH New York City Restaurant Inspection Results:
  + <https://data.cityofnewyork.us/Health/DOHMH-New-York-City-Restaurant-Inspection-Results/43nn-pn8j>.
* Developer page for Google Maps:
  + <https://developers.google.com/maps>

# **Overall Description**

## **Product Perspective**

Our product exists to bridge the gap between public knowledge and regulatory bodies by making existing restaurant inspection data accessible and visualizable to give our users important information regarding the restaurants they’re interested in dining at.

## **Product Functions**

The project’s functions are as follows:

* Visualize NYC restaurant inspection data via map pins
* Render NYC restaurant inspection data searchable (e.g. by name, by grade, by location)
* Allow for deeper looks at a particular restaurant’s inspection history

## **User Classes and Characteristics**

We expect the only user class of our system to be New York City restaurant goers who are interested in the health and safety of the restaurants they visit. As this is a broad category, care will need to be taken to ensure the system is both accessible to the public and easy to use while being as informative as possible.

## **Operating Environment**

The application will be web based, for all users to access over the internet. Hardware characteristics are to be determined as the project progresses and requirements make themselves known.

## **Design and Implementation Constraints**

Constraints on this project may include the following:

* Bandwidth requirements depending on the size of the user base
* Limits of the Google Maps API
* Security considerations as this will be running on a public web server

## **User Documentation**

User documentation will be provided through in-app prompts in order to make it as accessible as possible.

## **Assumptions and Dependencies**

* The dataset is hosted online and could impact functionality if service to the database website is interrupted.
* The visualization will be powered by the Google Maps platform. Interruptions to Google’s services or limitations on their API would impact the functionality of the project.

# **External Interface Requirements**

## **User Interfaces**

* Embedded Google Street Map
  + User options for zoom in and zoom out
* Dropdown box with grade filters
* Field for search by restaurant name
* Field for search by address

## **Hardware Interfaces**

Being a web based application, a device capable of running a web browser and accessing the internet will be required. The interface between the stored restaurant data and the underlying hardware will be managed entirely by the DBMS that is used (exact software to be determined).

## **Software Interfaces**

There will be several components which will need to smoothly integrate with one another. Chief among them will be between the program and the underlying DOHMH data. Restaurant information will be pulled from the database via SQL queries and brought into the application for display to the user. Data will flow exclusively from the database to the application; no data will be sent back to the database. Another important component interface will be the interface between the application and the Google Maps API. Restaurant data will flow from the application and be sent to the API for visualization.

## **Communications Interfaces**

The product will have to be compatible with most major browsers, such as Google Chrome, Mozilla Firefox, and Microsoft Edge. As is standard for web applications, it will be delivered over HTTPS.

# **System Features**

## NYC Restaurant Inspection Map Visualization

4.1.1 Description and Priority

A visualization of the map of NYC that takes each restaurant and represents them via pins. This takes the highest priority so that the restaurants, and it’s corresponding data, is easily accessible to anyone. The look and feel of the software should be smooth & simple so that anyone in any age group can look for a restaurant and have it’s data displayed in a coherent & easily readable manner.

4.1.2 Stimulus/Response Sequences

Pins, representing a restaurant, should be displayed around the user’s general location so that they know what’s nearby. Users can also click on said pin in order to see details regarding Health Inspection grade, any violations, etc. Users are also able to ‘pinch’ or ‘expand’ their local area in order to lessen/expand the restaurant results so they have more to choose from.

4.1.3 Functional Requirements

REQ-1: Software will interact with google maps API to display accurate results in real-time

REQ-2: Software will have to recognize when a user ‘pinches’ or ‘expands’, via mouse scroll, and adjust which restaurants are nearby accordingly.

## Search Function

4.2.1 Description and Priority

This feature is of high priority as it is the main point of interaction with the application. Elements must include input fields for addresses and restaurant names. Users will be able to use additional filter options to tailor results to their specific interests, such as filtering by restaurant grade or regional location.

4.2.2 Stimulus/Response Sequences

* Specifying a restaurant name should return the locations and information about restaurants matching the input string.
* Filtering by grade should have options to return restaurants that have scores within a specific bracket (ie, only restaurants with an A) or return restaurants above a specified minimum (ie, all restaurants above a C).

4.2.3 Functional Requirements

REQ-1: An appropriate UI to collect user input for processing. Specific design elements are TBD.

REQ-2: The application must return informative error messages, should an error occur in execution of the search.

## 4.3 Restaurant Data Viewer

4.3.1 Description and Priority

This feature will allow the user to drill down into a particular restaurant’s inspection history beyond the top-level overview given in the map pins. This is a low priority feature as compared to 4.1 and 4.2.

4.3.2 Stimulus/Response Sequences

The user will click on a *More…* button on a restaurant’s associated map pin to spawn a box with a scrollable, paginated list of the restaurants’ inspections. Clicking on a *Next* or *Prev* button will open the next or previous page.

4.3.3 Functional Requirements

REQ-1: Be able to query a sorted, paginated list of a restaurant’s inspections

REQ-2: Respond to rapid user-spawned queries in a fast and error-free manner

# **Other Nonfunctional Requirements**

## **Performance Requirements**

The application will need to run at acceptable, web-typical speeds in all supported web browsers. Other than this, there are no particular specialized performance requirements.

## **Safety Requirements**

This software is intended to be used for informative purposes only and poses no threat due to possible loss/damage/harm towards the user. User data will not be collected by the application, and therefore presents no liability.

## **Security Requirements**

User accounts will not be necessary. All data used in the application is publicly available from the Department of Health and Mental Hygiene. No privacy issues are expected, as user information is not required for we expect this program to be as accessible as possible.

## **Software Quality Attributes**

The interface should feel responsive to user input. In addition, ease of use is paramount since the range of possible comfort in using software is very broad. The data should be current to ensure relevance to the user’s queries.

## **Business Rules**

There are no particular business rules to be encoded in the application.

# **Other Requirements**

The data that the DOHMH provides is not pre-loaded into a format supported by relational databases (i.e. it is not normalized). Work will need to be done to take the .csv files provided by the DOHMH and load them into the database.

**Appendix A: Glossary**

* DOHMH - Department of Health and Mental Hygiene
* REQ - Requirement
* HTTPS - Hypertext Transfer Protocol Secure
* API - Application Programming Interface

**Appendix B: To Be Determined List**

1. DBMS choice
2. Underlying hardware