Project Plan

NYC Restaurant Evaluation

Student Names

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# Introduction

## Background

The New York City (NYC) Restaurant Inspection Results the data set, which is accessible on Kaggle, is a useful tool containing an extensive amount of data regarding restaurant audits carried out inside the dynamic and diversified cultural environment of New York City. The data set includes information about a variety of restaurant assessments, such as assessment dates, specifics about violations, geographical regions, and information about the restaurants themselves. This dataset is a significant resource for analysing and making choices since it provides information on the standards and compliance of food outlets, which is essential for protecting public health and safety.

## Scope

The dataset for New York City restaurant evaluations is thoroughly examined in this document with a twelve-month time frame as the focus. The goal of this research is to assist data driven decision making by gaining helpful knowledge from each of the five primary areas.

* Allocation of infractions by Borough: This part looks at the breakdown of infractions among the various districts of NYC, highlighting places with better or less favourable compliance rates.
* Infractions With Client-Defined Buzzwords: In this section, we examine infractions that contain certain keywords or buzz words. Doing so enables the discovery of compliance problems that are in line with the needs of users.
* Patterns in Animal Related infractions: This analysis looks at patterns in animal-related infractions (such as rats and insects among time and between boroughs, providing information about significant hygiene issues.
* Inspection Score Allocation and Patterns: To provide a comprehensive picture of entire restaurant conformity, we analyse the breakdown of inspection scores as well as their trends throughout the chosen period.
* The Effect of Infractions on Scores: This part explores the connection between the seriousness of infractions and audit scores, clarifying how contrary affects ratings for restaurants.

## Document contents

The five analyses listed in the context are each guided by a different section of this paper. The technique, code snippets, and representations utilized to find insight in every field are all given in depth discussions. It also provides a summary and a synopsis that highlight the most important conclusions and consequences of the study. The publication seeks to serve as a thorough resource for everyone who care about the compliance and sanitation standards of eating places New York City (NYC), offering insightful information and a step by step guide for making well informed decisions.

# Work Breakdown Structure

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S.no** | **Activity** | **Plan Start** | **Plan Duration** | **Resource** |
|  | **Project Initiation and Setup** |  |  |  |
| 1 | Define project objectives and scope. | 1 | 5 | Project Manager |
| 2 | Set up the necessary development environment (Python, libraries) | 6 | 3 | Project Manager |
| 3 | Load the dataset into a Pandas DataFrame. | 9 | 4 | Project Manager |
|  | **Data Exploration and Understanding** |  |  |  |
| 1 | Explore the dataset's structure, columns, and data types. | 13 | 5 | Project Manager |
| 2 | Check for missing values and handle them as needed. | 18 | 4 | Project Manager |
| 3 | Gain a comprehensive understanding of the data's content. | 22 | 2 | Project Manager |
|  | **Preparation of Data for Analysis** |  |  |  |
| 4 | Select a 12-month period for analysis. | 24 | 2 | Project Manager |
| 5 | Filter the data based on the selected time. | 26 | 5 | Project Manager |
| 6 | Clean and preprocess data for subsequent analyses. | 31 | 3 | Project Manager |
|  | **Analysis 1: Distribution of Violations by Borough** |  |  |  |
| 7 | Group data by borough and violation type. | 34 | 2 | Developer |
| 8 | Generate visualizations (count plot) to show violation distribution by borough. | 36 | 1 | Developer |
|  | **Analysis 2: Keyword-Associated Violations** |  |  |  |
| 9 | Allow user input for keyword selection. | 39 | 1 | Developer |
| 10 | Filter data to retrieve violations containing the user-entered keyword. | 40 | 1 | Developer |
| 11 | Display keyword-related violations and borough distribution. | 41 | 1 | Developer |
|  | **Analysis 3: Animal-Related Violation Trends** |  |  |  |
| 12 | Identify and filter animal-related violations (e.g., rat, mice) | 42 | 1 | Developer |
| 13 | Create a time-based trend analysis of these violations. | 43 | 2 | Developer |
| 14 | Generate a line plot to visualize the trend over the 12-month period. | 45 | 1 | Developer |
|  | **Analysis 4: Inspection Score Distribution and Trends** |  |  |  |
| 15 | Plot a histogram to show the distribution of inspection scores. | 46 | 1 | Developer |
| 16 | Calculate and visualize the average inspection score for each month. | 47 | 2 | Developer |
| 17 | Examine the potential factors contributing to score fluctuations. | 49 | 2 | Developer |
|  | **Analysis 5: Impact of Violations on Scores** |  |  |  |
| 18 | Categorize violations into severity levels. | 51 | 1 | Developer |
| 19 | Calculate average inspection scores for each severity category. | 52 | 1 | Developer |
| 20 | Visualize the relationship between violation severity and inspection scores. | 53 | 2 | Developer |
|  | **Documentation and Reporting** |  |  |  |
| 21 | Summarize key findings and insights from each analysis. | 55 | 1 | Project Manager |
| 22 | Compile visualizations and descriptions into a cohesive report. | 57 | 2 | Project Manager |
| 23 | Write an abstract and executive summary to provide an overview of the analysis. | 59 | 1 | Project Manager |
|  | **Presentation and Communication** |  |  |  |
| 24 | Create a visually appealing presentation of the analysis results. | 60 | 2 | Project Manager |
| 25 | Present the findings to stakeholders, explaining insights and recommendations. | 62 | 1 | Project Manager/Business Analyst |
|  | **Review and Iteration** |  |  |  |
| 26 | Review the analysis, code, and report for accuracy and completeness. | 63 | 2 | Developer |
| 27 | Iterate on any necessary improvements based on feedback. | 65 | 1 | Developer |
|  | **Finalization and Delivery** |  |  |  |
| 28 | Finalize the analysis report, incorporating revisions. | 66 | 1 | Project Manager |
| 29 | Share the report and presentation with relevant stakeholders. | 68 | 1 | Project Manager |

# Activity Definition & Estimation

The task will be finished in a period of 68 days, according to the work breakdown structure. It encompasses every activity and its associated time span.

The current iteration contains elements from all key processes, with an emphasis on the tasks of evaluation, layout, and evaluation.

The planning process will be supervised by a company analyst and project manager. The functional analyst and the developer will participate in the additional responsibilities to varied degrees in each job element.

# Gantt Chart

The task breakdown framework is represented below in a Gantt chart. Since there are an overall of 29 chores listed in the data table above, the Gantt chart displays those 29 pieces of work or tasks as IDs, along with the 12 section heads of each task. In addition to the time, the chart also shows the beginning and end dates. Under each date bar on the right side of the chart, there is a list of the necessary resources for each assignment. The participation at all meetings is required of all project participants. During client conferences, only the project manager will be there; however, at staff meetings, the business analyst will receive a thorough update on the information.

Days are used to assess the total amount of time spent on every task, which is incorrect for certain duties as they require less time. The period measurement cannot be changed to hours in the Gantt chart programs, it ought to be mentioned.

The Gantt chart predicts that the project's planning stage won't last longer than twelve days and that the analytical module won't last longer than three days. Systems analysts, developers, and business analysts will be heavily involved in this research phase. It will take roughly 30 days to complete the following stage, design. During this phase, the tasks will be jointly worked on by the programmer and system analyst. The creation of the inspection software will be the next step, which will take roughly 10 days. Now, the Systems Analyst and Programmer once more work together on the tasks. Some tiny test jobs will be added during the build process for practical reasons. The penultimate stage of the iteration will include testing the built in subsystem.

“The Gantt chart is provided in the Gantt chart.xlsx file”