Crime Data Analysis

FINAL PROJECT

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1. Abstract

This report gives us a detailed insight on how the project is built. The project will be explained with each step and its description.

2. Introduction

In this world, crimes are an inseparable part of our lives. Every day we hear about them and some of us even involved in at least one of them during our life. Being cautious and improve safety is not a simple instruction anymore. We need to use modern technology and data science techniques to more wisely act against this problem. There are so many records and documentation in the police department that have been gathered during the years, which can be used as a valuable source of data for the data analytics tasks. Applying analytical task to these data bring us valuable information that can be used to increase the safety of our society and lower the crime rate.

2.1 Project Description

A Crime Data Analysis APP where you can find statistics of crime data for the region requested.

A user can

1) Login APP with valid user name and password
2) Enter region using latitude and longitude
3) Select the graph using drop down
4) Select various crimes using check boxes

3. Scope

- ✓ The User has to login into the system.
- ✓ User name and Password should be validated
- ✓ Enter region using latitude and longitude
- ✓ Latitude and Longitude should be validated
- ✓ Currently, the APP should accept only Latitude and Longitude for Chicago region
- ✓ Select the relevant option using drop down
- ✓ Default option should be provided
- ✓ Select crimes using check boxes (Optional)
- ✓ User can ask for crime report without selecting crime types

- ✓ Data should be loaded and selected from JSON file (https://data.cityofchicago.org/resource/w98m-zvie.json)
- ✓ Exit option should be provided to quit the APP

4. List of files

- ⇒ Data_Loading.py
- ⇒ User_GUI.py

5. List of Functions

- → login_verification
- → login
- → buildFrame
- → donut_chart
- → hor_bargraph
- → pie_chart
- → ver_bargraph
- → crime_report
- → exit_app

6. Services

The admin has to log in into the system with his credentials (**Username: admin, Password: admin**) and manage the store through various functionalities.

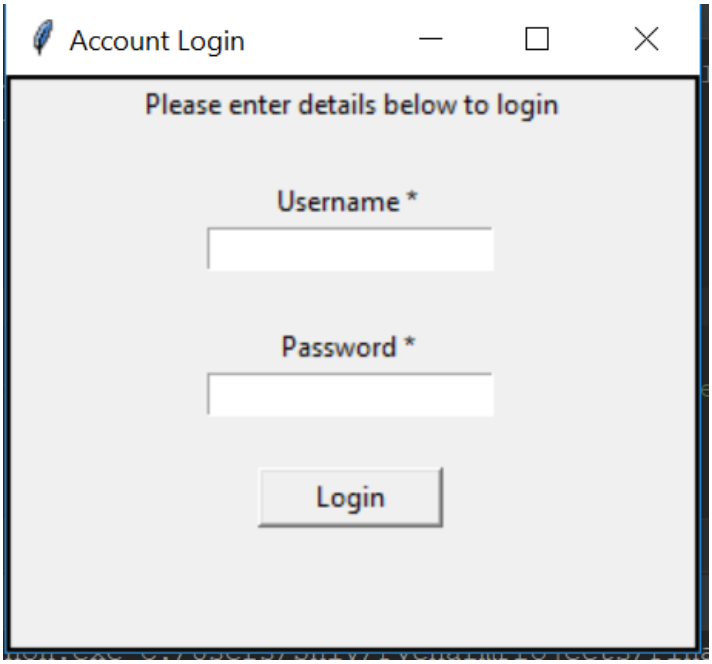
The user logs in into the system with his credentials:

Username: admin

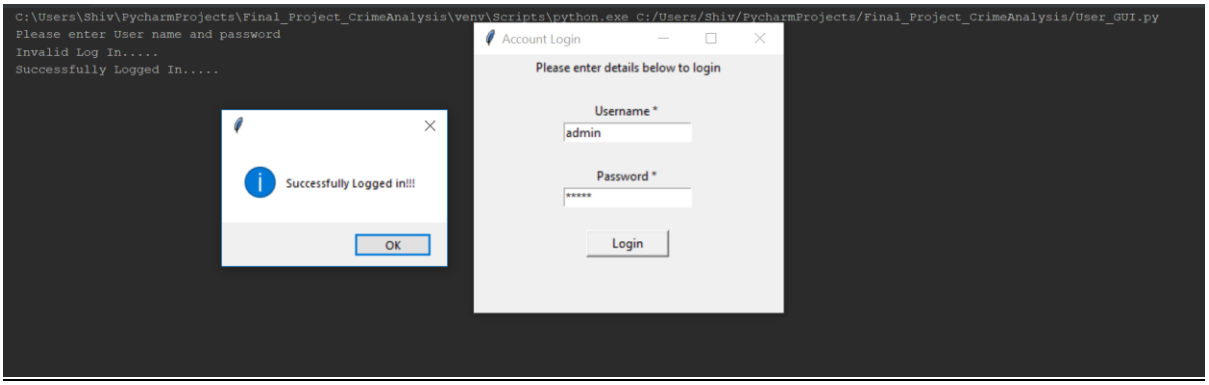
Password: admin

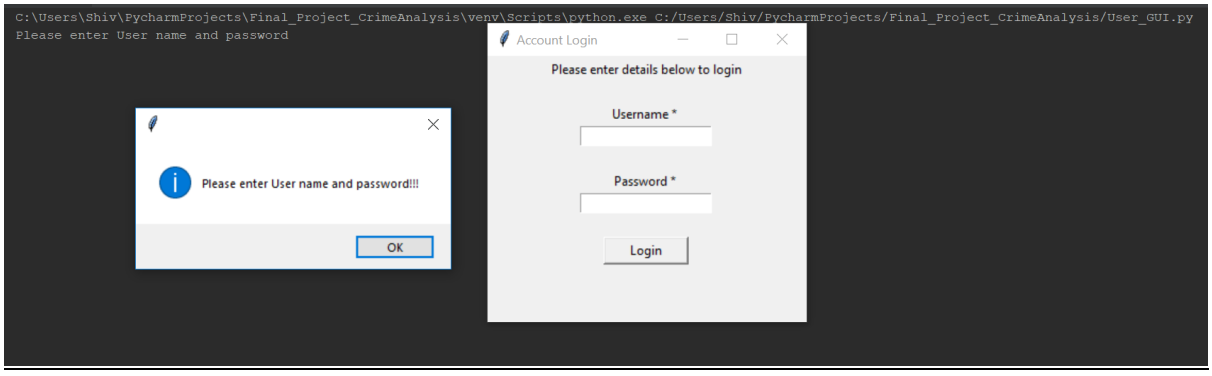
Customers need not login into the system for placing an order. Both users have their specific role, but Admin dominates most of the operation.

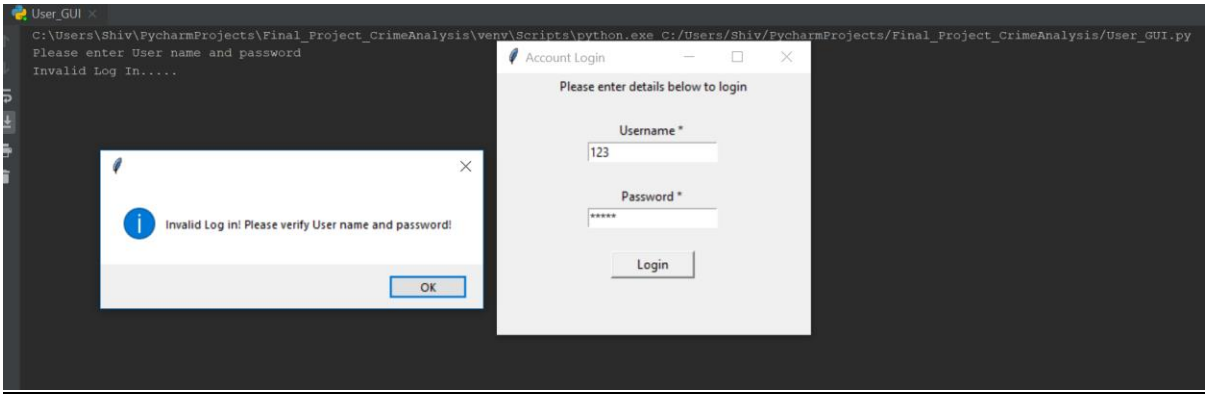
The User – Login



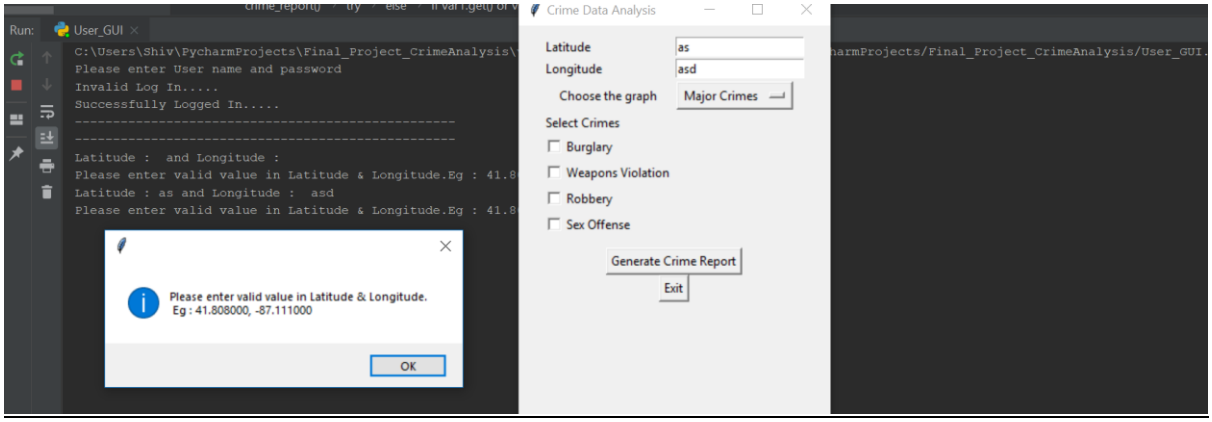
User name and Password – Validation



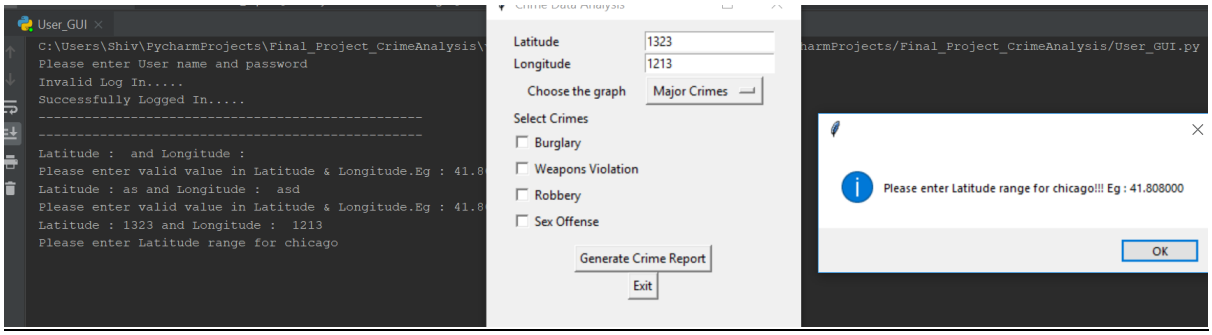


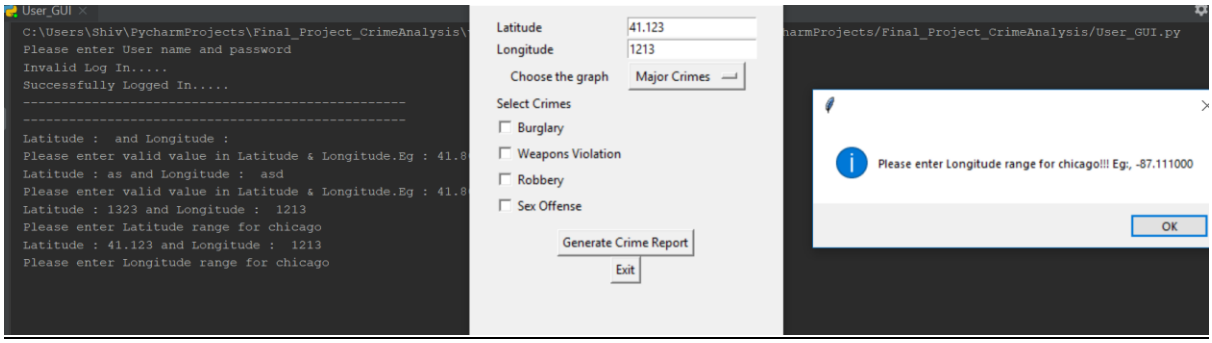


Entering latitude and longitude and validation

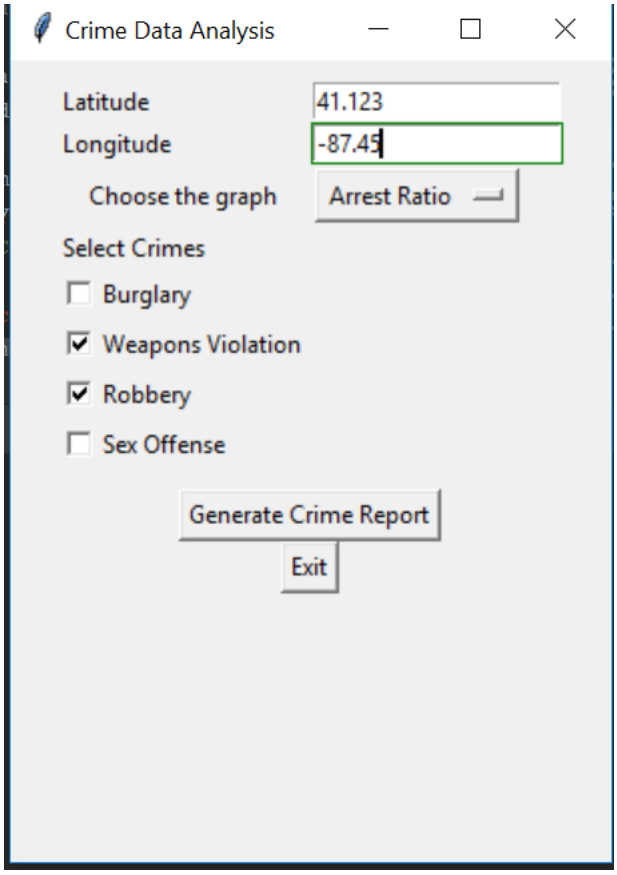


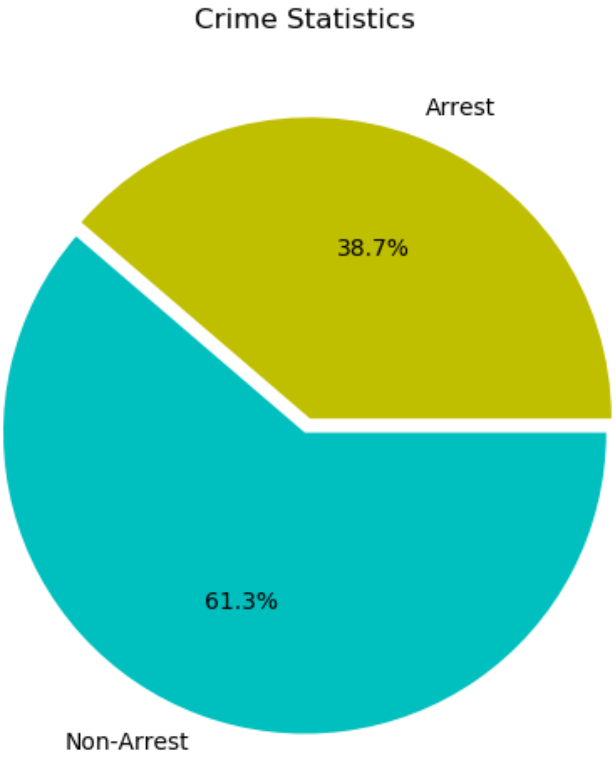
Accept only Latitude and Longitude for Chicago region

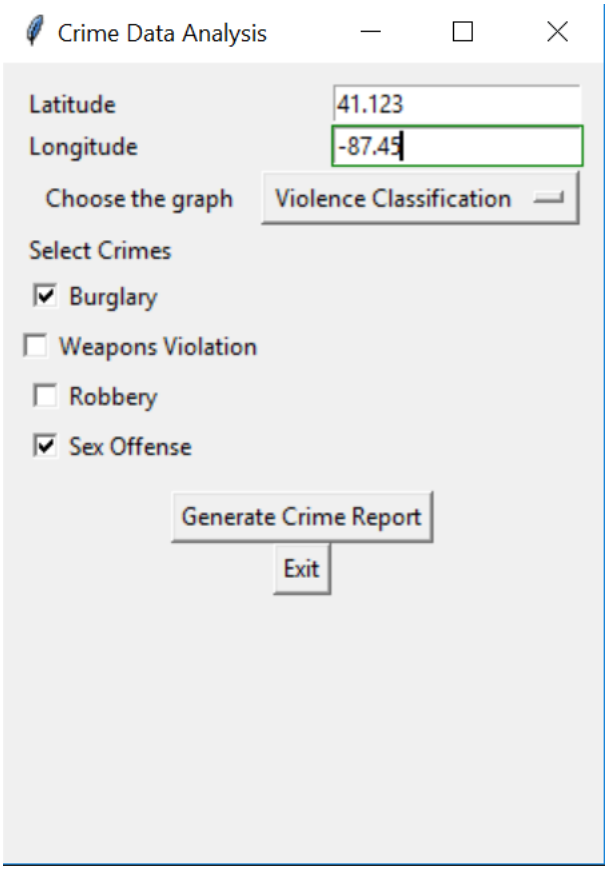


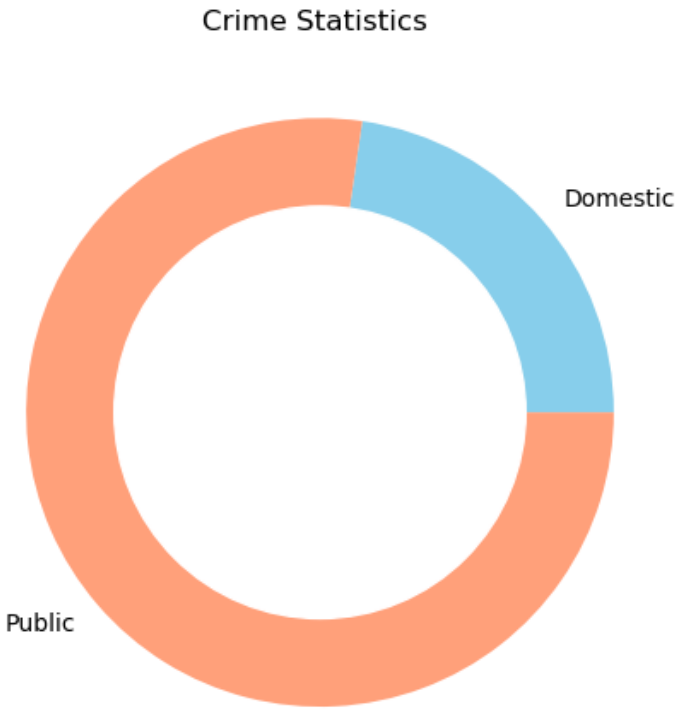


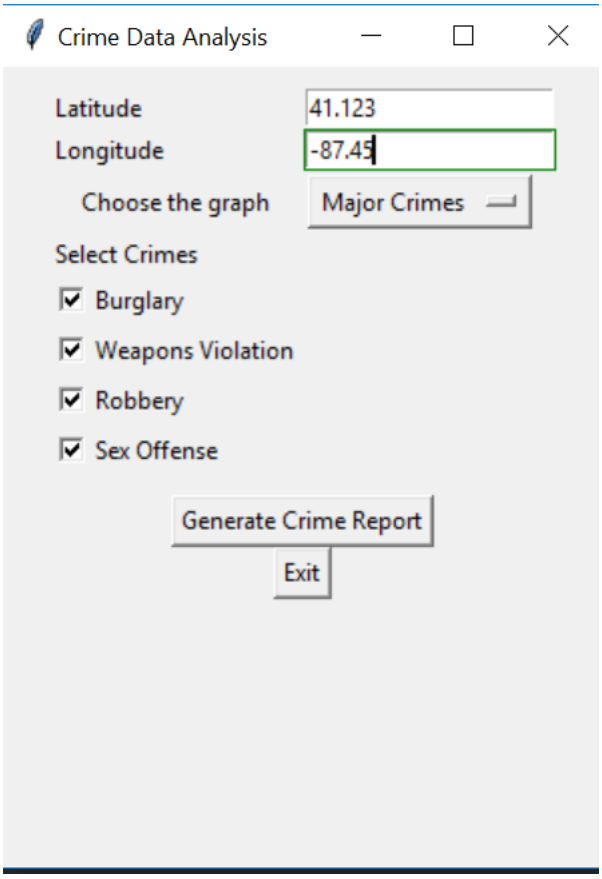
Select the relevant option using drop down

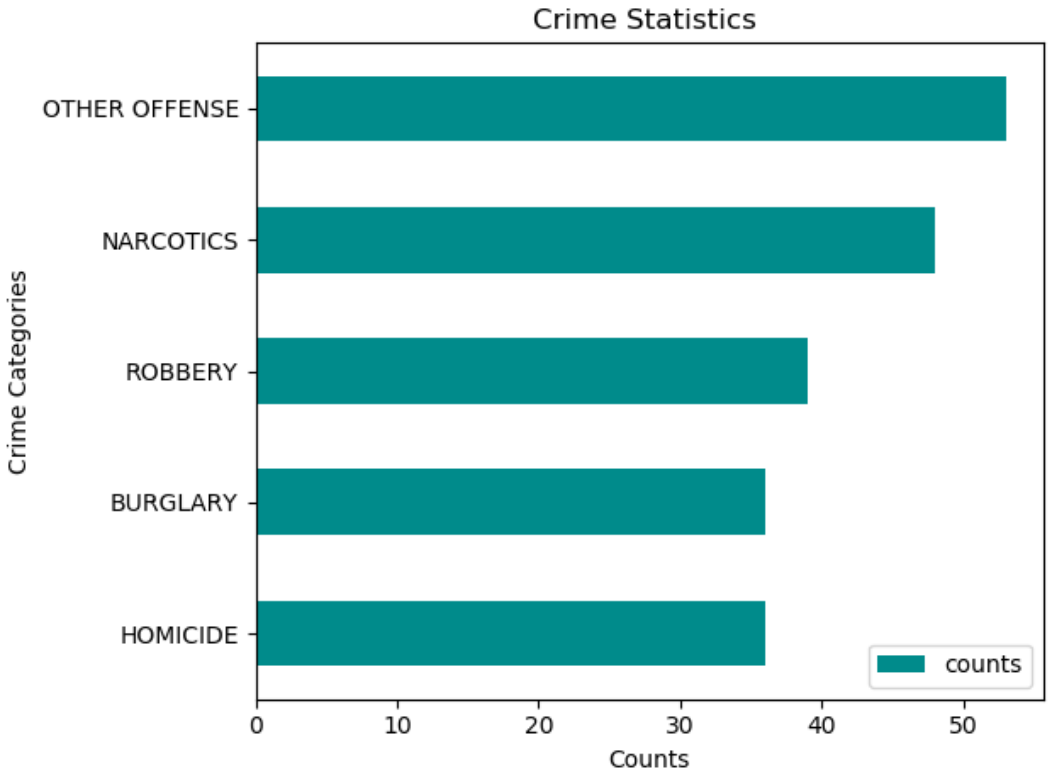




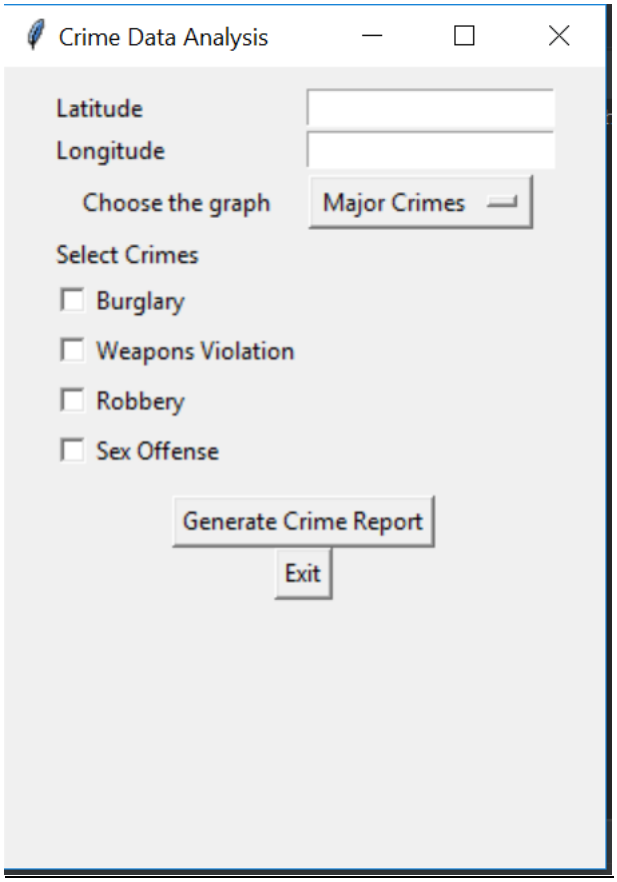

Crime Data Analysis
Latitude
41.123
Longitude
-87.45
Choose the graph
Violence Classification
Select Crimes
Burglary
Weapons Violation
Robbery
Sex Offense
Generate Crime Report
Exit


Crime Statistics
Domestic
Public

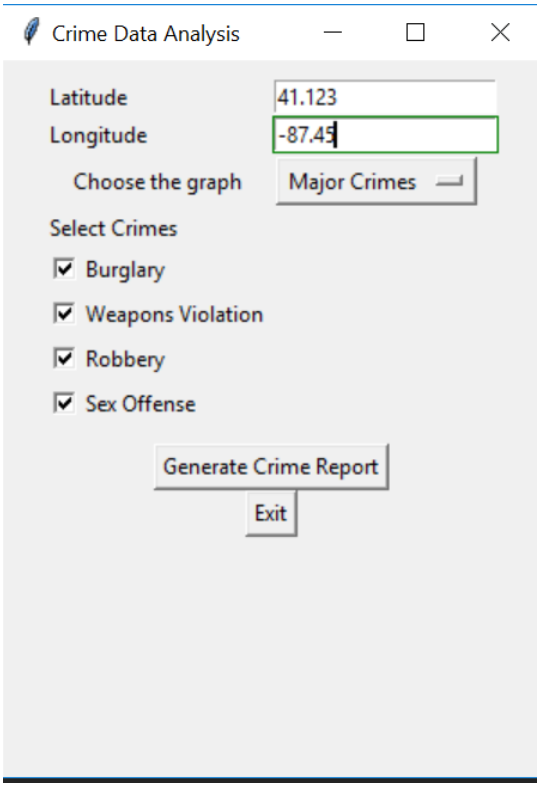

Crime Data Analysis
Latitude
41.123
Longitude
-87.45
Choose the graph
Major Crimes
Select Crimes
Burglary
Weapons Violation
Robbery
Sex Offense
Generate Crime Report
Exit

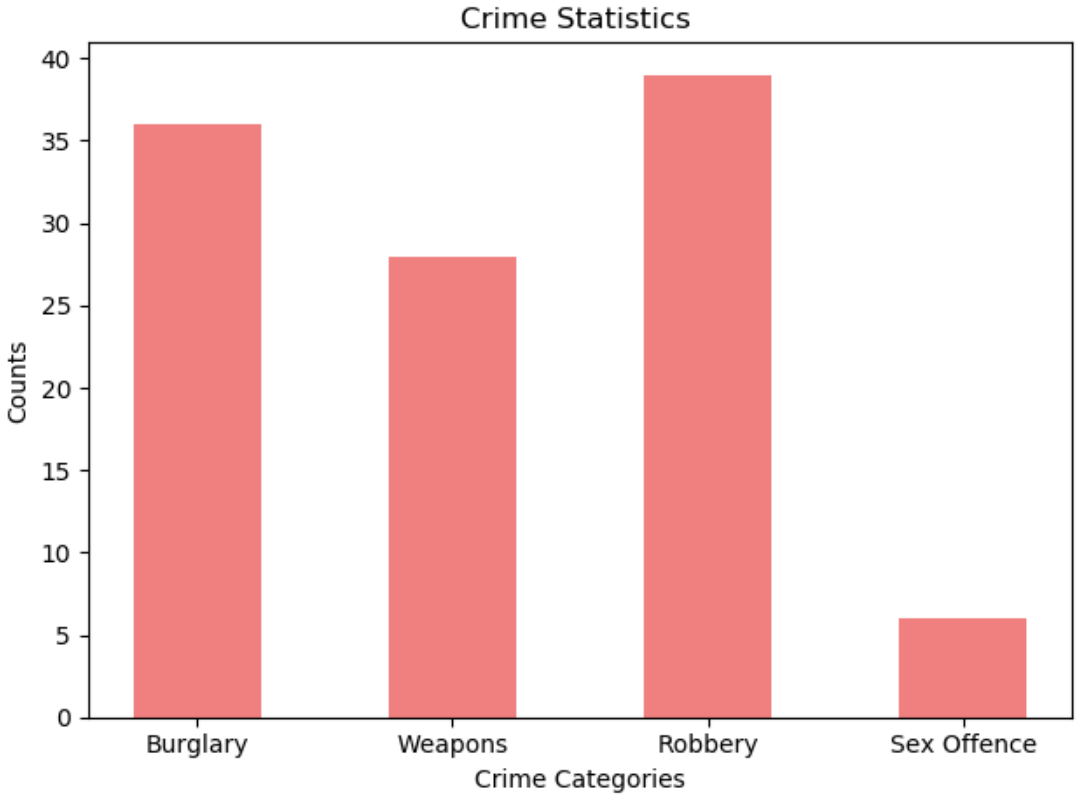

Crime Statistics
OTHER OFFENSE
NARCOTICS
ROBBERY
BURGLARY
HOMICIDE
Crime Categories
counts
0
10
20
30
40
50
Counts

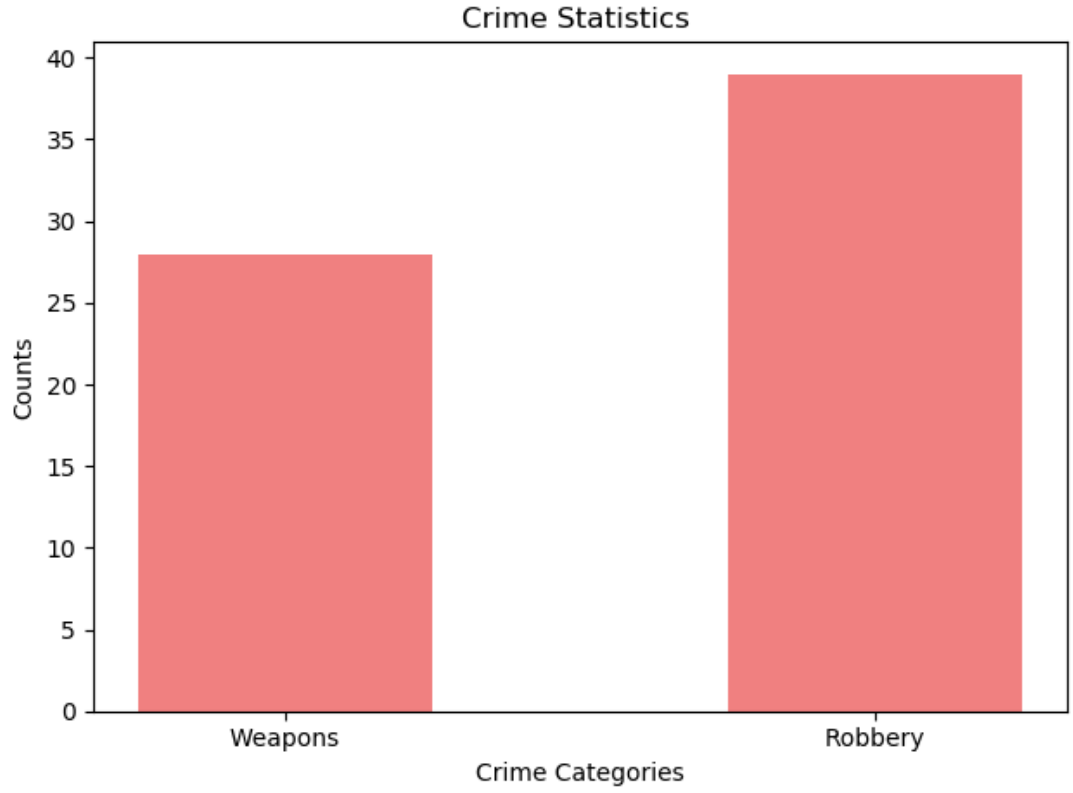
Default option should be provided

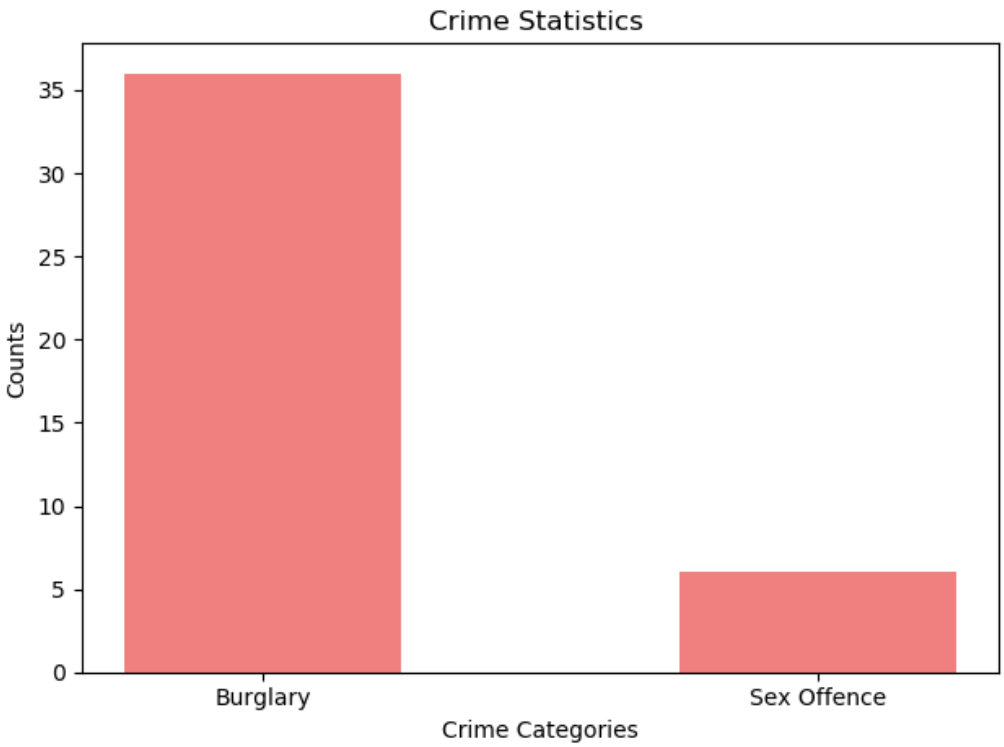


Select crimes using check boxes (Optional) and Crime type Graph’s

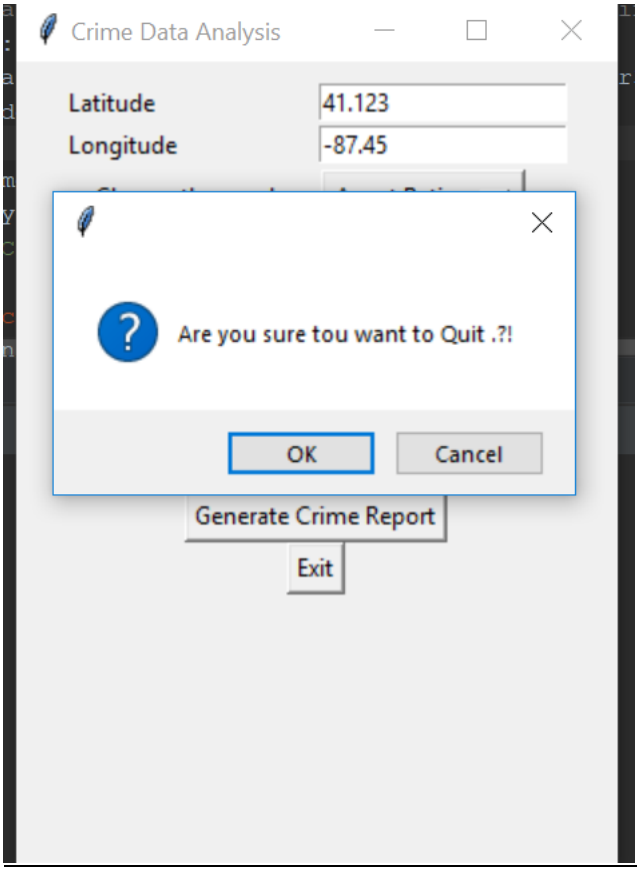



Crime Statistics
Counts
0
5
10
15
20
25
30
35
40
Burglary
Weapons
Robbery
Sex Offence
Crime Categories


Crime Statistics
Counts
0
5
10
15
20
25
30
35
40
Weapons
Robbery
Crime Categories



Exit option should be provided to quit the APP



6. Future Scope

- The geographical disperse of crimes throughout the city of Chicago.
- Crime Analysis for all the cities in Illinois

7. Conclusion

We believe this project give us a scientific view about the crime rate of the Chicago city. According to the analysis result and visualization, we can view the most frequently occurring crimes where crimes happened. From these reports, the most occurred crimes were narcotics, robbery, burglary in the requested area.