PROJECT PROGRESS REPORT

CRIME RATE PREDICTOR

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SUBMITTED TO
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JAIPUR ENGINEERING COLLEGE AND RESEARCH CENTER

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CONTENTS

PROJECT SYNOPSIS

TITLE: CRIME RATE PREDICTOR

Location: Department of Information Technology
                 Jaipur Engineering College and Research Center, Jaipur.

1. Problem Statement

Crime rate is increasing now-a-days in many countries. In today's world with such higher crime rate and brutal crime happening, there must be some protection against this crime. Here we introduced a system by which crime rate can be reduced. Crime data must feed into the system. We introduced data mining algorithm to predict crime. K-means algorithm plays an important role in analyzing and predicting crimes. K-means algorithm will cluster co-offenders, collaboration and dissolution of organized crime groups, identifying various relevant crime patterns, hidden links, link prediction and statistical analysis of crime data. This system will prevent crime occurring in society. Crime data is analyzed which is stored in the database. Data mining algorithm will extract information and patterns from database. System will group crime. Clustering will be done based on places where crime occurred, gang who involved in crime and the timing crime took place. This will help to predict crime which will occur in future. Admin will enter crime details into the system which is required for prediction. Admin can view criminal historical data. Crime incident prediction depends mainly on the historical crime record and various geospatial and demographic information.

2. Objective

This Crime Rate Predictor will be a Web app designed to predict and classify criminal activities in an area that will help in preventing and reducing the crime.

The objective of our work is to:

- Predicting crime before it takes place.
- Predicting hotspots of crime.
- Understanding crime pattern.
- Classify crime based on location.
- Analysis of crime.

3. LITERATURE SURVEY

a) **Bogahawatte et al.,2013**: data mining techniques, clustering, classification Developed a system named Intelligent Crime Investigation System(ICSIS) that could identify a criminal based upon the evidence collected from the crime location.

b) **Agarwal et al.,2017:** used the rapid miner tool for analysing the crime rate and anticipation of crime rate.

c) **Yu et. al.,2015:** used Ensemble of data mining techniques for classification and crime forecasting

We shall:

- use crime datset available on kaggle.
- Clean, Preprocess and visualize the data and apply different algorithms for predicting and analysis of crimes. We would then be analyzing the accuracy of different algorithms.

4. Requirement Analysis :

Technologies Used:

- Anaconda Distribution
- Python (Machine Learning)
- Packages Used:
  - Django
  - Pandas
  - Numpy
  - Sklearn
  - Geopy
  - Folium
- HTML 5
- CSS 3
- Bootstrap 4
- Java Script

This Crime Rate Predictor will be a Web app designed to predict and classify criminal activities in an area that will help in preventing and reducing the crime.
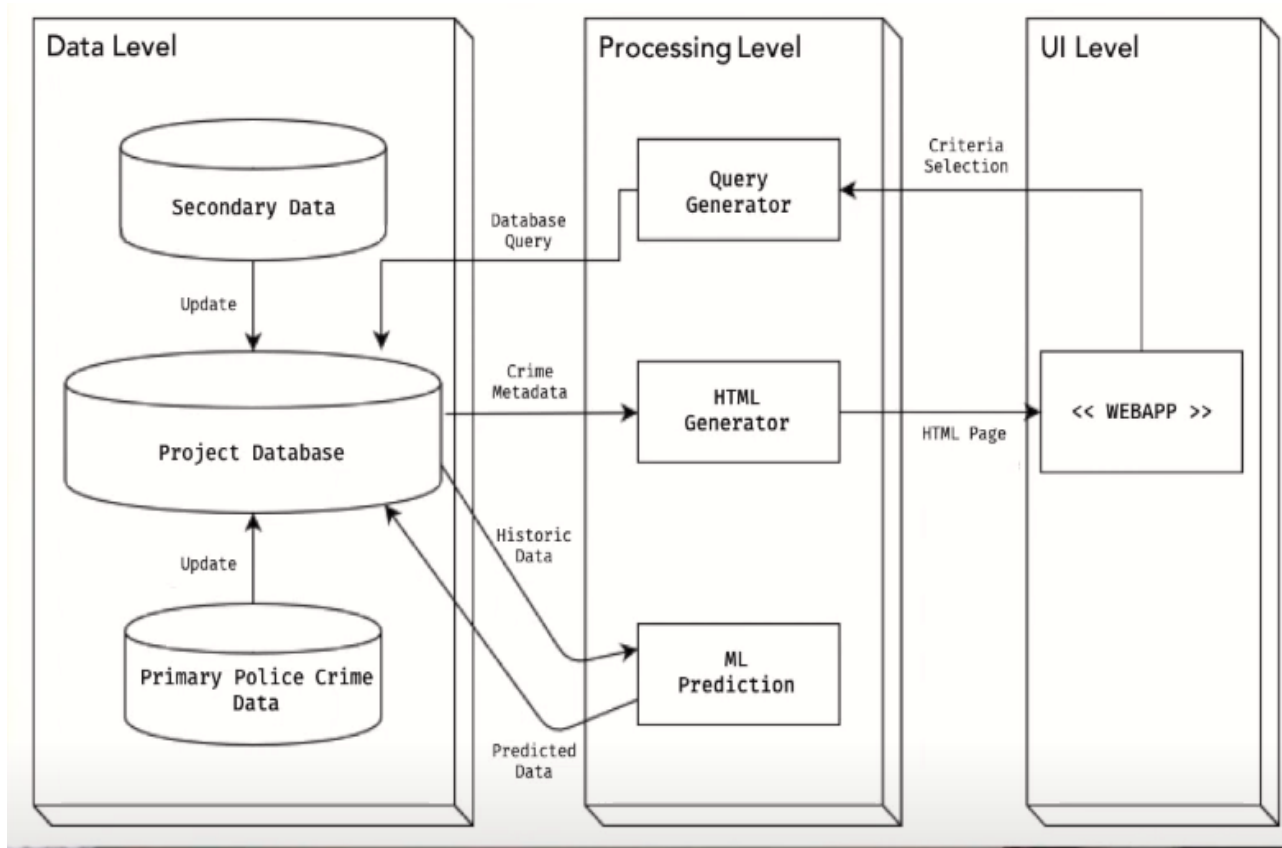
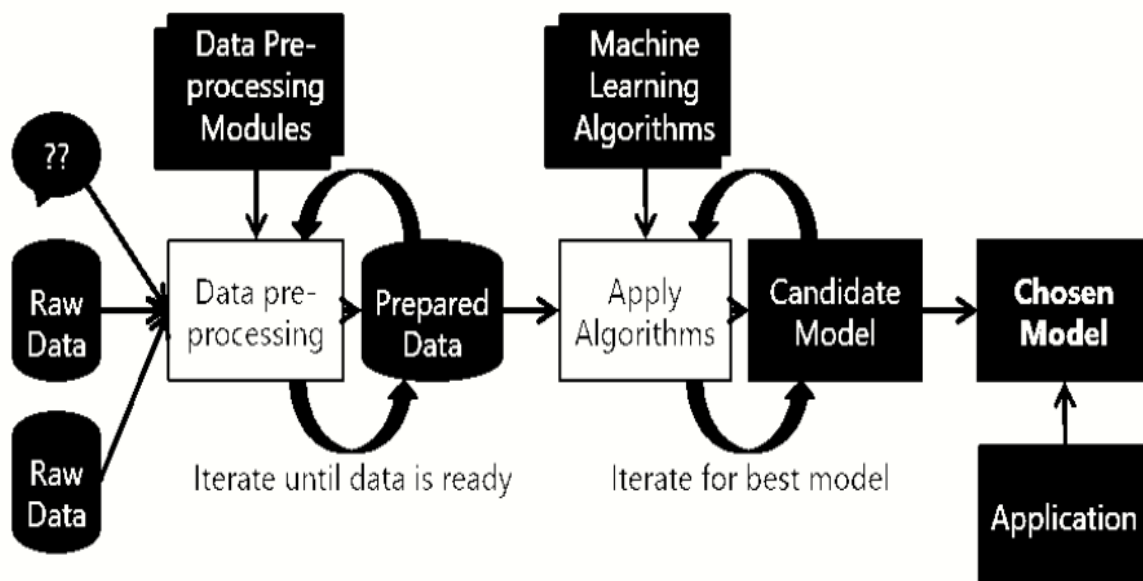## 5. Block Diagram

Fig. 1: System Architecture

Fig. 1.1 : Machine Learning Process

SCREENSHOTS

```
D14     3
A15     1
A1      1
Name: DISTRICT, dtype: int64
```

In [140]: `list_unique_year, list_number_year = create_list_number_crime('YEAR',df['YEAR'].unique())`
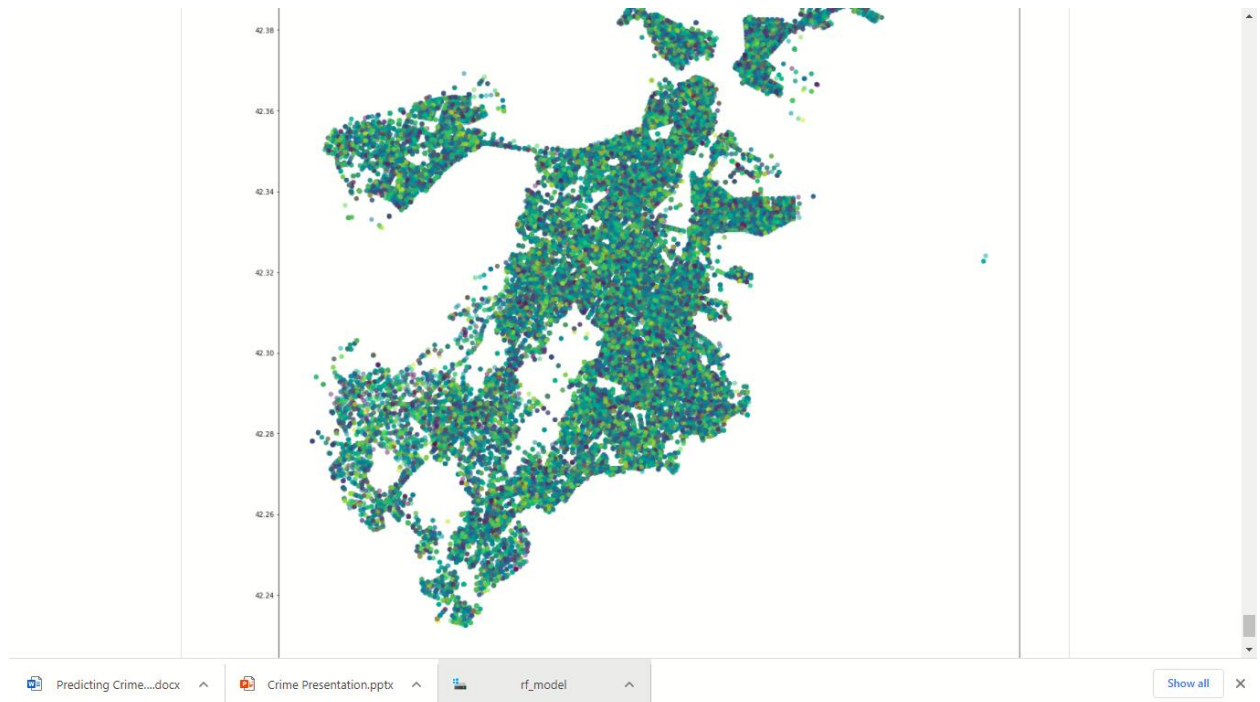
In [141]: `pie_plot(list_unique_year, list_number_year)`
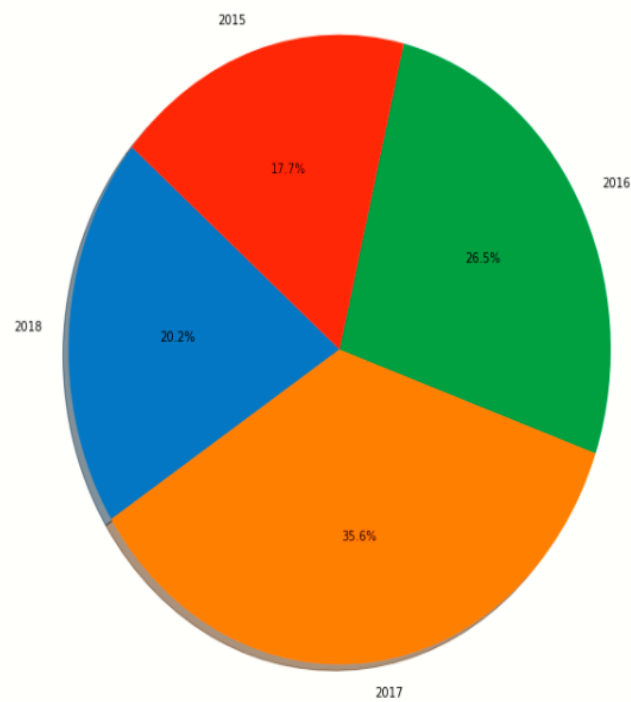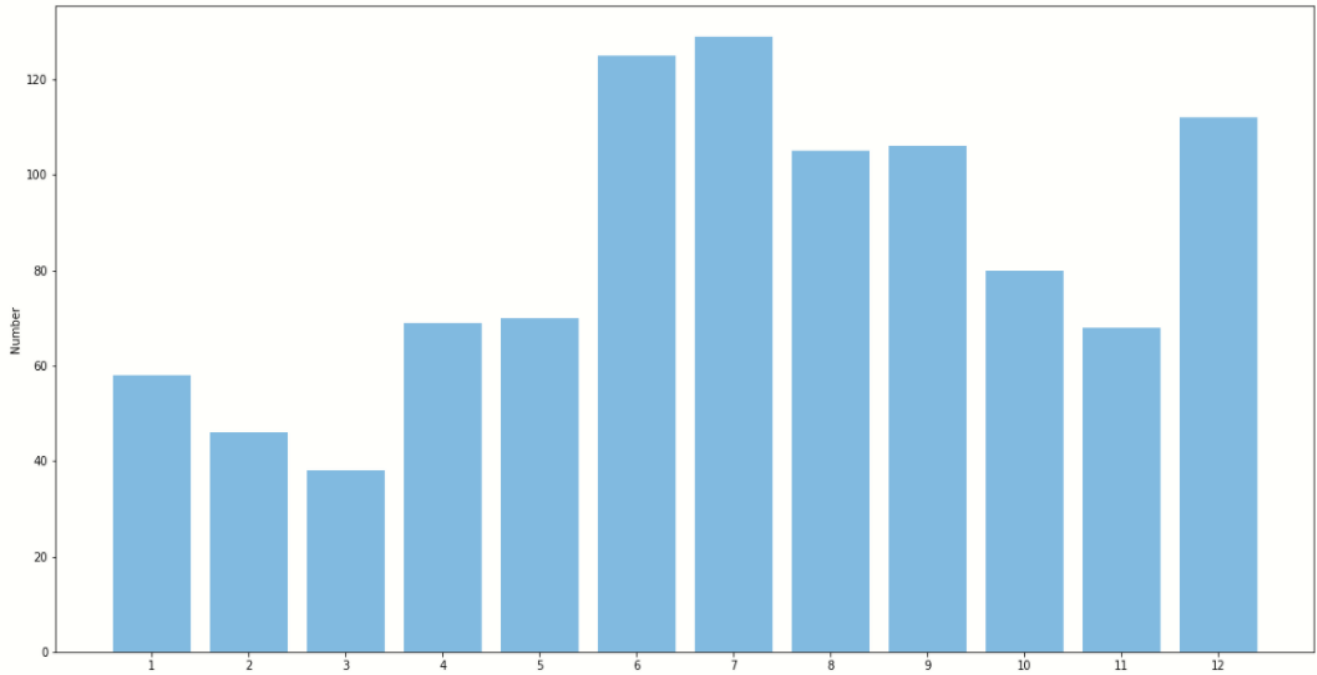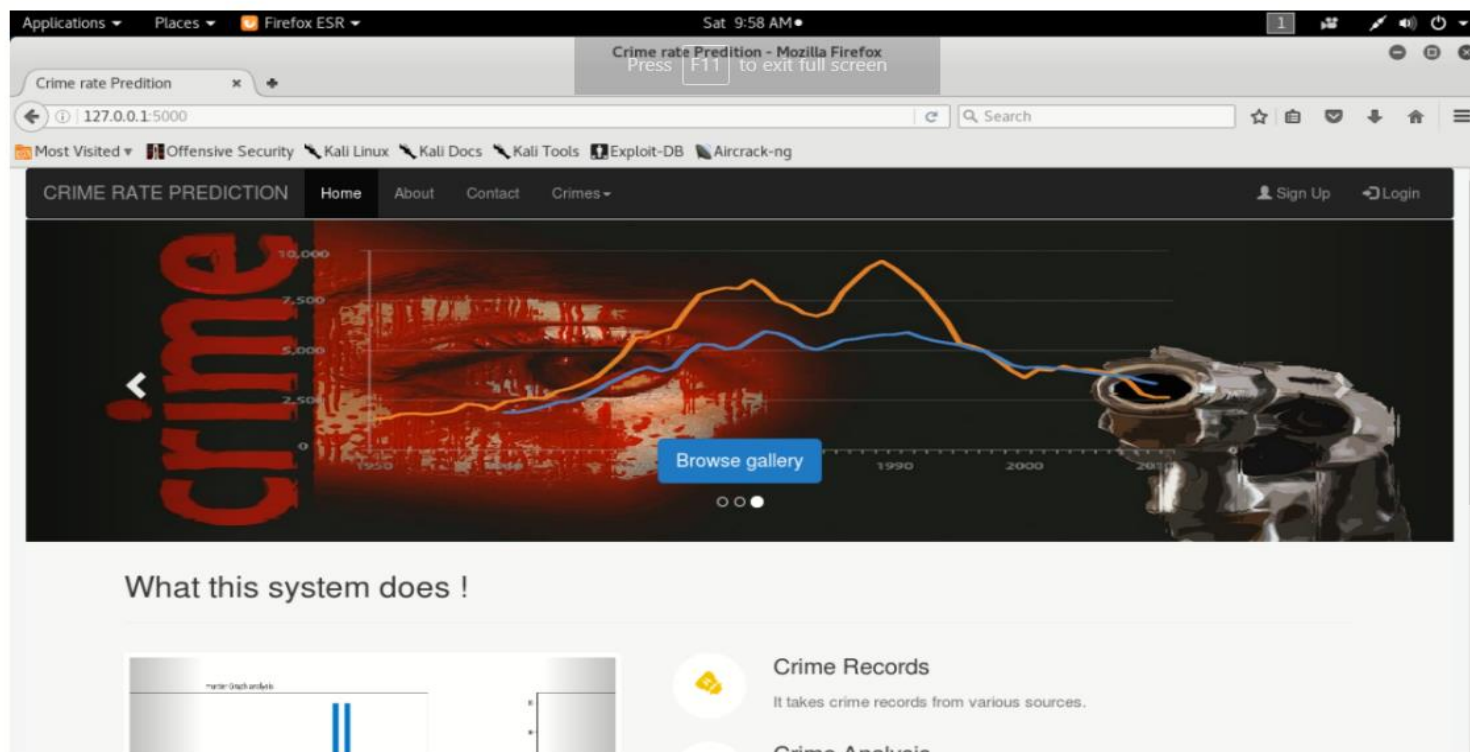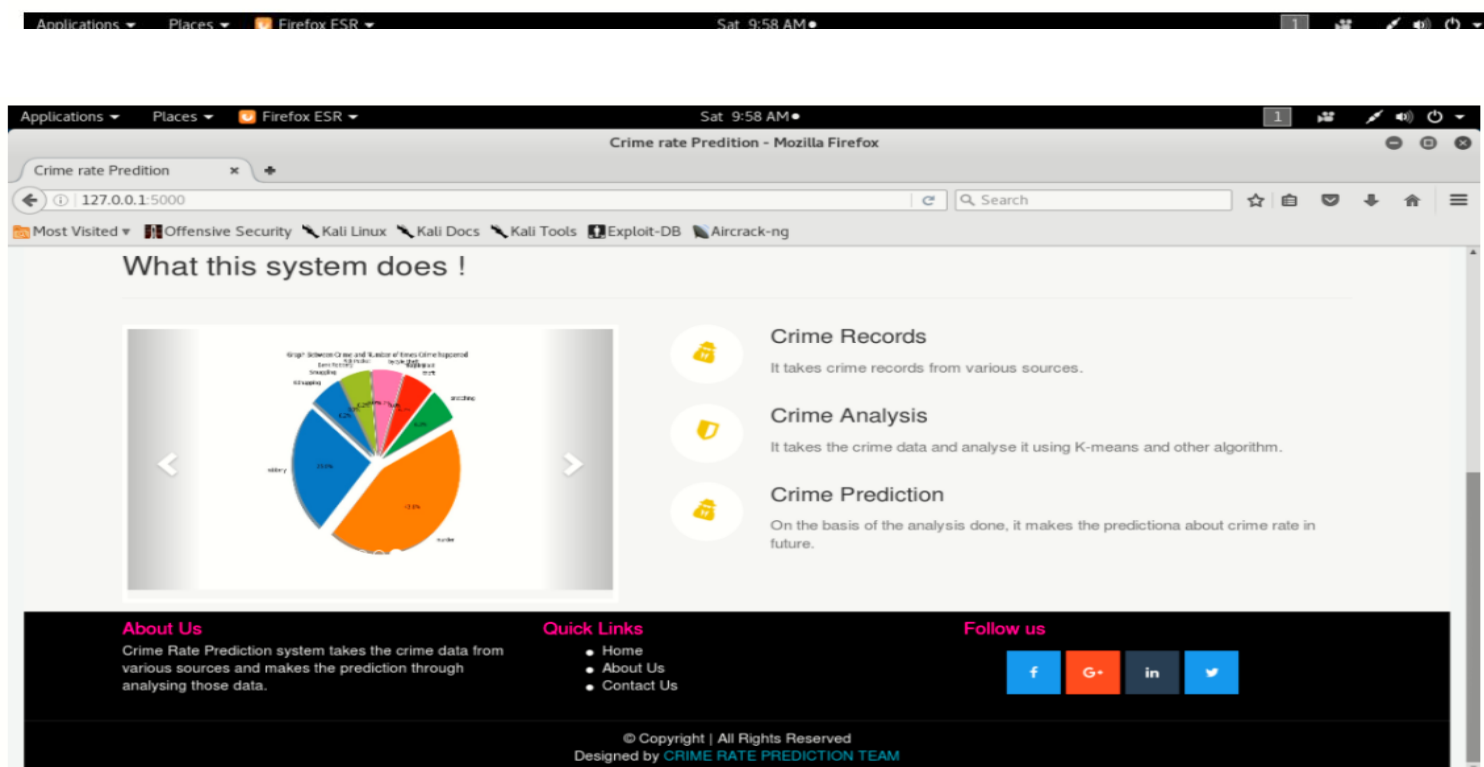

Out[141]: 0

t[142]: 0

```
[143]: list_unique_month, list_number_month = create_list_number_crime('MONTH',list(range(1,13)))
        # pie_plot(list_unique_month,list_number_month)
        bar_chart(list_number_month,list_unique_month)
```
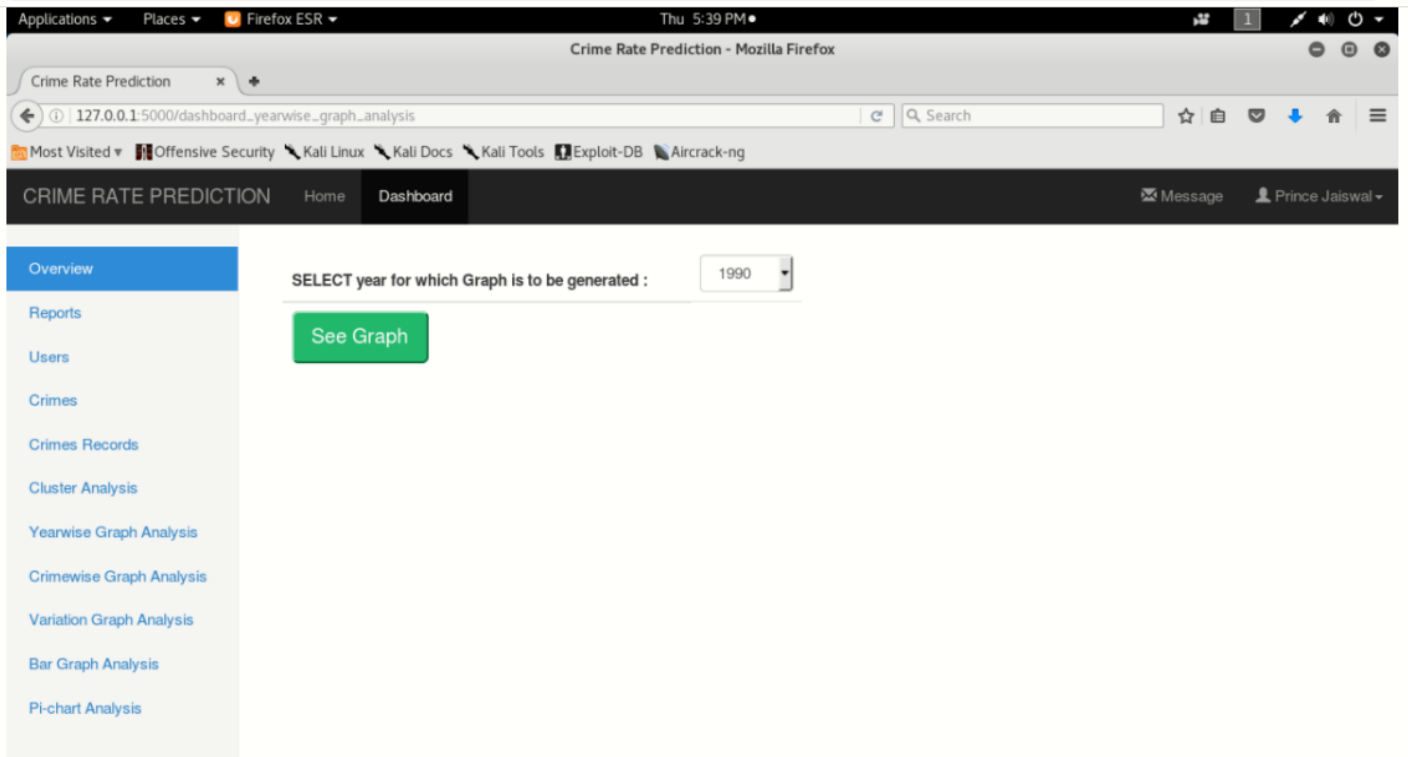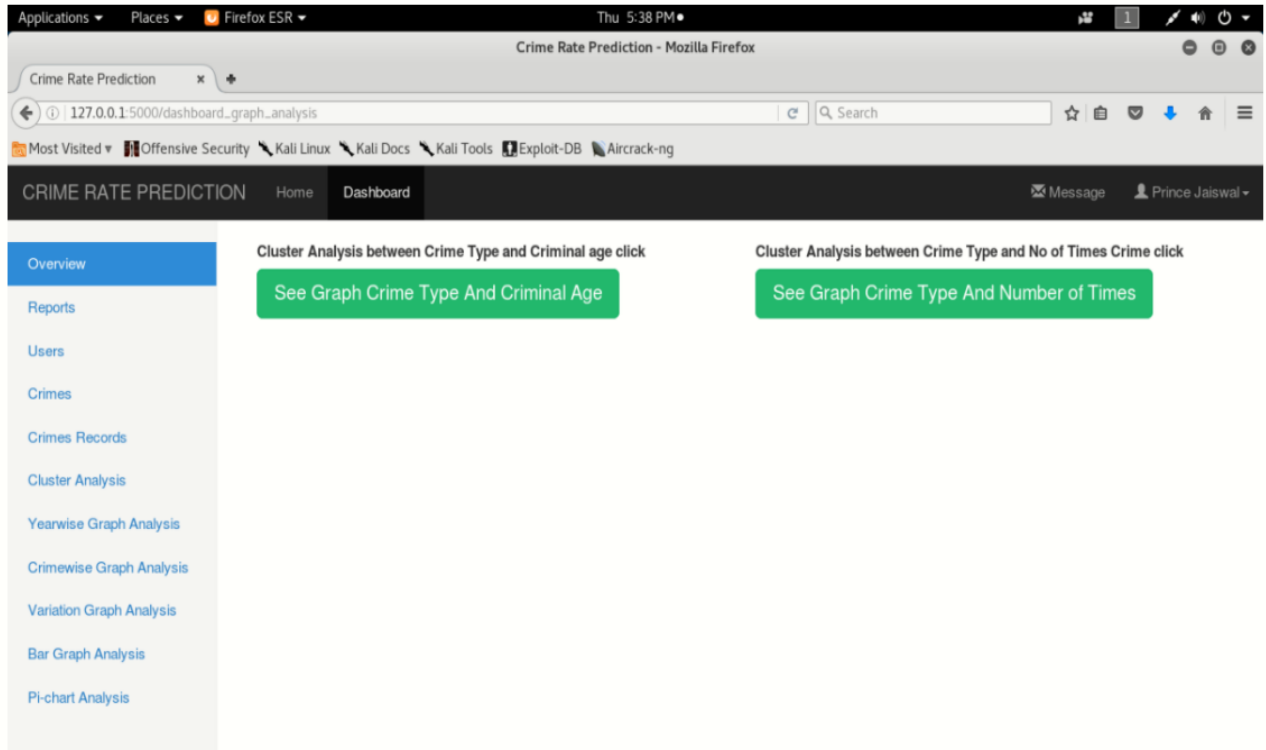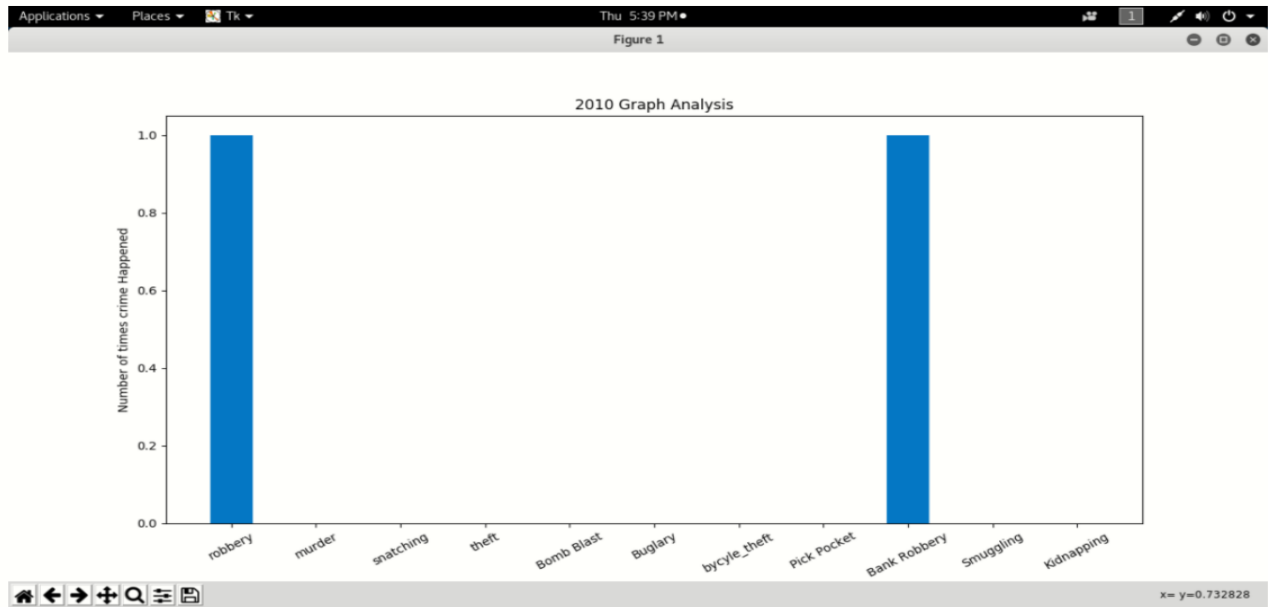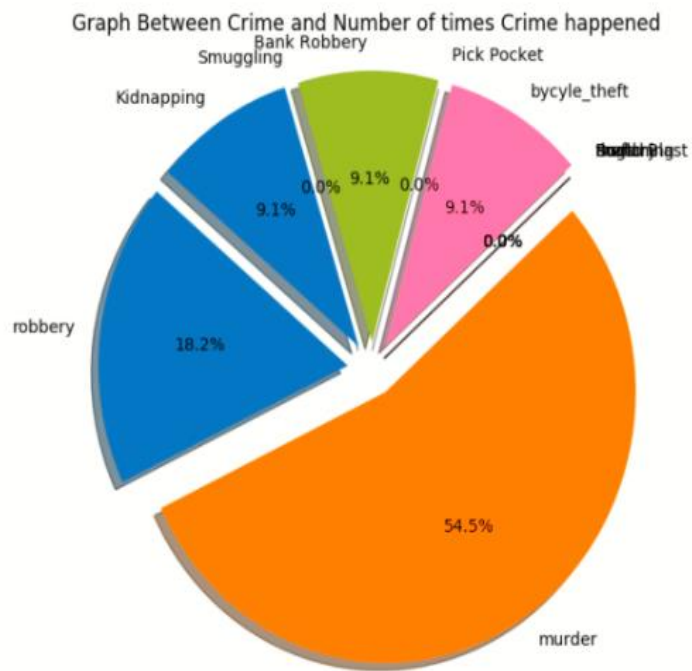
UI Interface Screenshots

Home Page

Footer Portion

Crime Rate Prediction - Mozilla Firefox

Crime Rate Prediction   ✕   ✚

← → ① | 127.0.0.1:5000/dashboard_graph_analysis   C   🔍 Search   ☆ 🗎 ♡ ↓ 🏠 ≡

🔖 Most Visited ▾   🔴 Offensive Security   🔧 Kali Linux   🔧 Kali Docs   🔧 Kali Tools   📁 Exploit-DB   🔧 Aircrack-ng

CRIME RATE PREDICTION   Home   **Dashboard**   ✉ Message   👤 Prince Jaiswal ▾

Overview

Reports

Users

Crimes

Crimes Records

Cluster Analysis

Yearwise Graph Analysis

Crimewise Graph Analysis

Variation Graph Analysis

Bar Graph Analysis

Pi-chart Analysis

Cluster Analysis between Crime Type and Criminal age click   **Cluster Analysis between Crime Type and No of Times Crime click**

See Graph Crime Type And Criminal Age   See Graph Crime Type And Number of Times

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Crime Rate Prediction - Mozilla Firefox

Crime Rate Prediction   ✕   ✚

← → ① | 127.0.0.1:5000/dashboard_yearwise_graph_analysis   C   🔍 Search   ☆ 🗎 ♡ ↓ 🏠 ≡

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Overview

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Yearwise Graph Analysis

Crimewise Graph Analysis

Variation Graph Analysis

Bar Graph Analysis

Pi-chart Analysis

SELECT year for which Graph is to be generated :   1990 ▾

See Graph

Year wise Crime Portal

Year wise crime graph

Bar Graph Analysis

Pi Chart Portal

Figure 1   ⊖ ▣ ✖

Graph Between Crime and Number of times Crime happened

Bank Robbery

Smuggling   Pick Pocket

Kidnapping   bycyle_theft

0.0%   9.1%   0.0%   Bughligst

9.1%   9.1%

robbery

0.0%

18.2%

54.5%

murder

PROGRSS REPORT OF PROJECT

Team members :

_____

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Outline Approved

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