USER MANUAL

Hardware Requirement:

- CPU: 2.80GHz Intel Core i7-7700HQ
- Graphics: NVIDIA GetForce GTX- 1050
- RAM: 16GB
- Storage: 4-GB DDR 5

Following Steps need to be followed in order to run and implement the project:

1. Download the Chicago Crime Dataset from the official website of Chicago (.csv file).

2. Save the required columns from the csv file into a new file.

3. Update the csv file by removing the missing entries from the file and then sort the crime monthwise.

4. Upload these month wise crime files to the ArcMap software and apply kernel density hotspot on the dataset and then map it with the Chicago Boundary and you will finally get a hotspot image indicating the crime density of that month in Chicago.

5. Now, upload these files onto the Google Colab and then run the optimized model for training the dataset. Crime_prediction.ipynb file is being run on the Google Colab as it provides more Ram and Data storage required for this project.

6. The output image(Predicted crime hotspot of the next) is then passed to the trained model and the next crime data hotspot is then received.

7. The predicted file is then compared with the original hotspot using Python Image Comparison. Error_calc.py file is being run to implement this step.

8. Later, the crime dataset is then passed to the Existing Machine learning models like SVM, KNN, Decision Tree etc. Existind_models.ipynb file is being run to implement this step.
9. Accuracy of our model is then compared with the existing models to prove that our model outperforms all the existing models.