Team 5

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FINDING A SERIAL KILLER, HOMICIDE REPORTS IN THE USA 1980 – 2014

DATA ANALYSIS

In the United States, the majority of serial killers are white males, usually in their late 20s to early 40s.
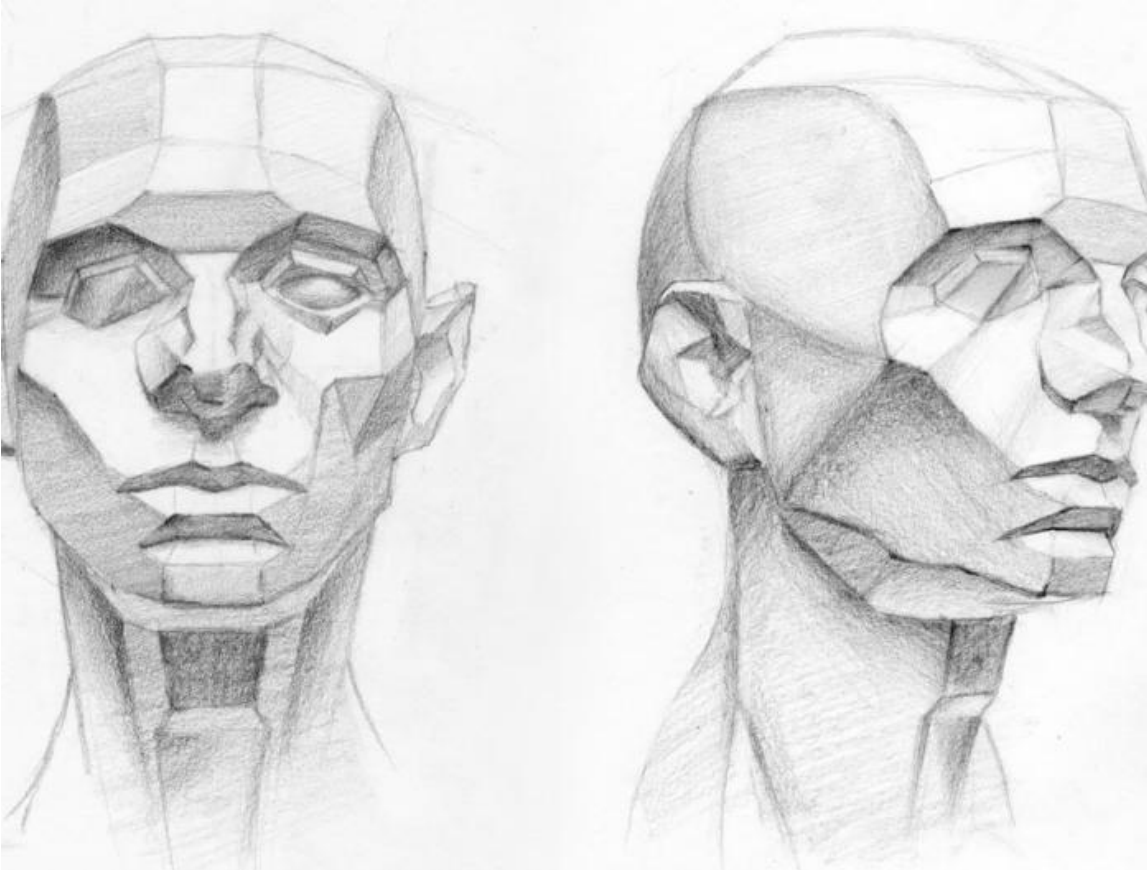

HYPOTHESIS

WHAT IS A SERIAL KILLER?

According to the Federal Bureau of Investigation

(FBI), a serial killer is someone who commits at

least three murders over more than a month with

an emotional cooling off period in between.
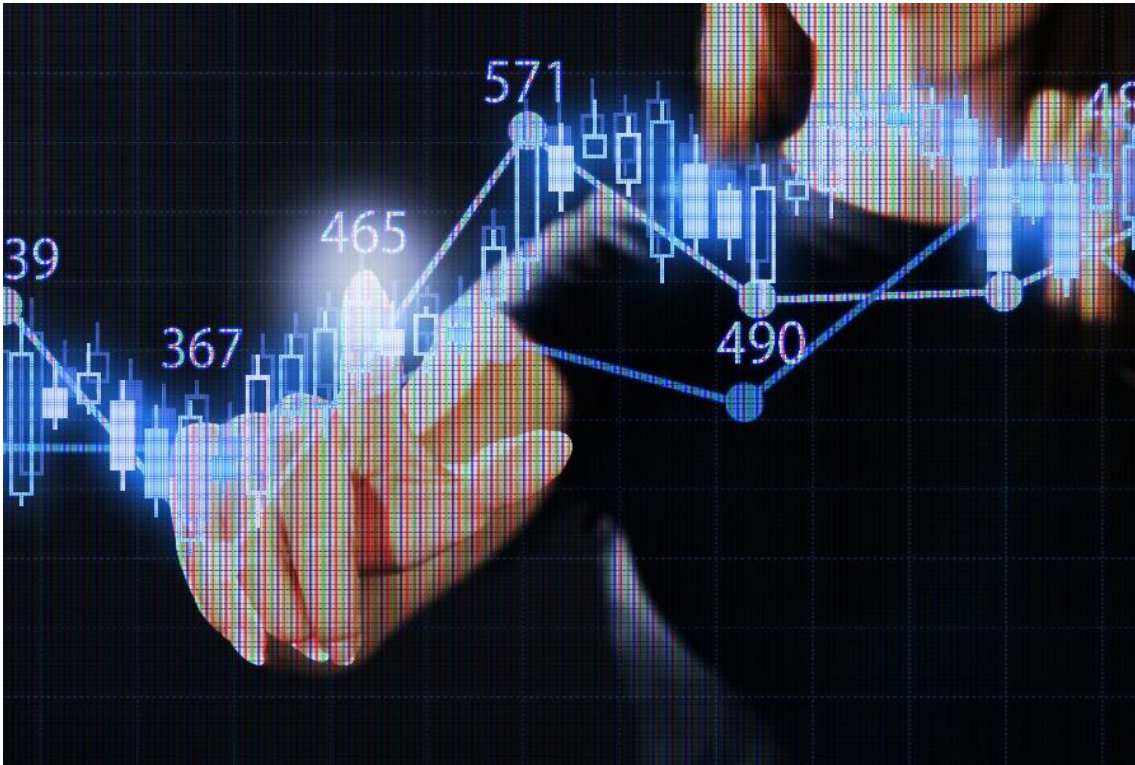
QUESTIONS

Perpetrator age.

Perpetrator gender.

Perpetrator race.

DATA SOURCE

In this project we work on a dataset published on **Kaggle.com**, an specialized platform in data analysis.

This dataset is based on data collected by **The Murder Accountability Project**, the most complete database of homicides in the United States currently available.

PROFILING THE SERIAL KILLERS - STEPS

Serial Killers: Offender's Relationship to the Victim and Selected Demographics

⤓ Cite this publication

Serge-Moses Pakhomou

Abstract

Currently it is generally accepted among members of the law enforcement community, forensic psychologists, criminologists and profilers that serial killers are mostly white males in their twenties and thirties of above average intelligence who usually commit intra-racial murders of strangers. The present paper focuses on validation of these hypotheses through the study of 21 serial killers (and their 97 victims), whose cases have been closed by arrest and finalised in terms of convictions and appeals. The issues of prior charges, military service, marital status, criminal organisation, modus operandi and psychiatric diagnosis are included in the analysis as well. It is concluded that though currently accepted hypotheses still hold in general, the melting pot trend of the modern society towards diversity and interdependence leads to far more complex a picture of serial killers than previously thought. Implications of these findings for law enforcement, forensic psychology and profiling are discussed.
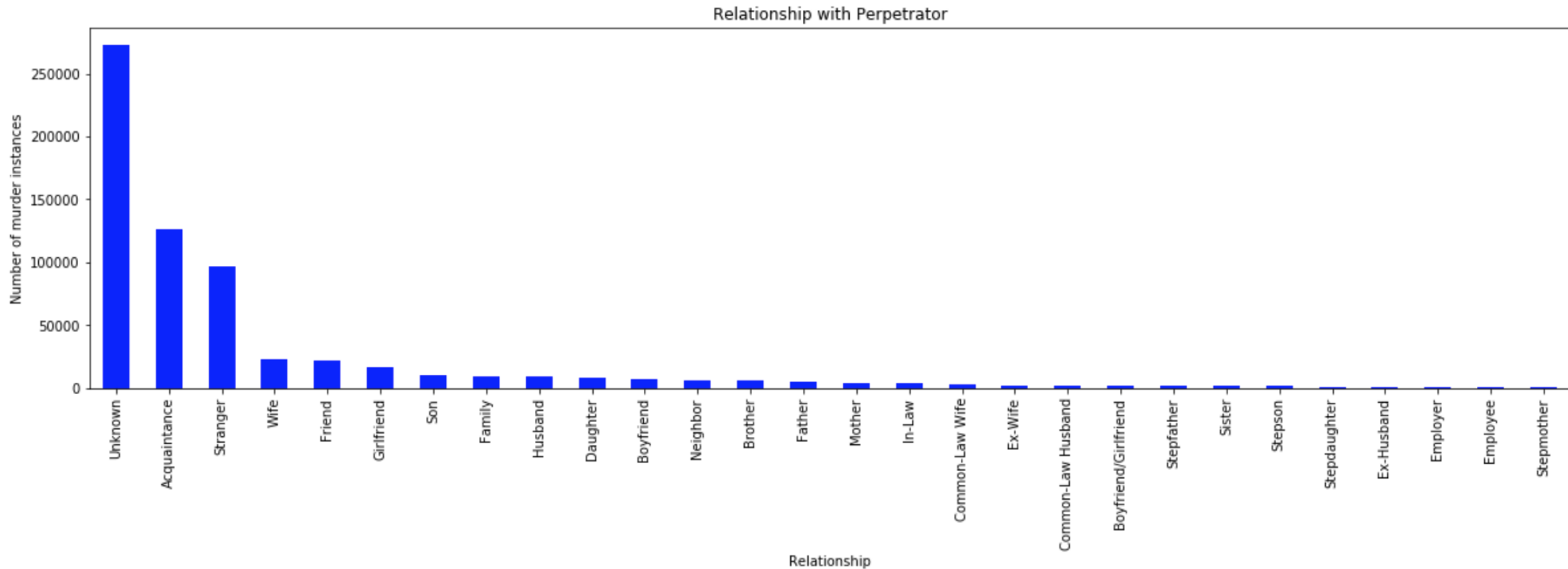
PROFILING THE SERIAL KILLERS - STEPS

Step 1

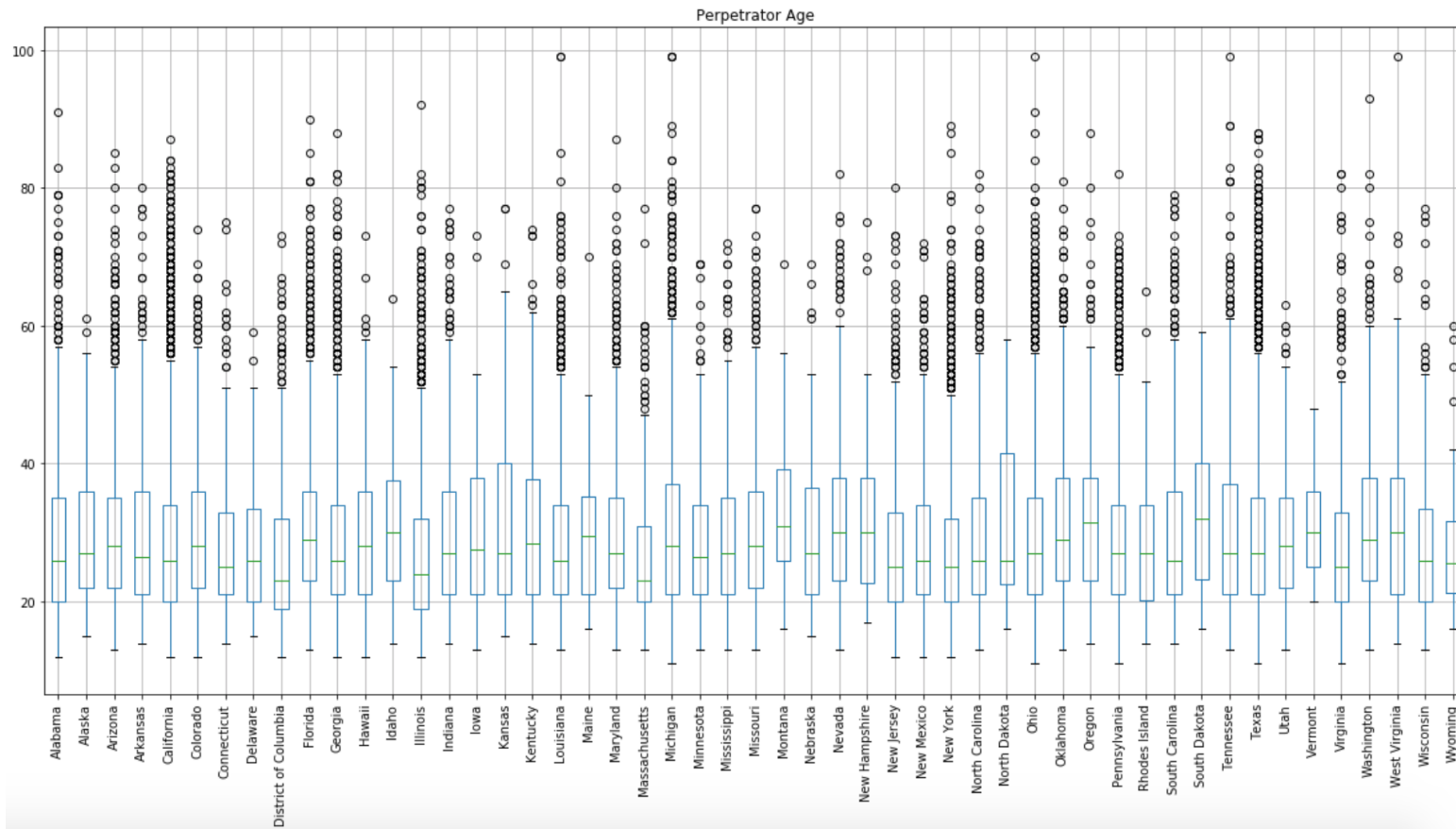Number of Murder per State
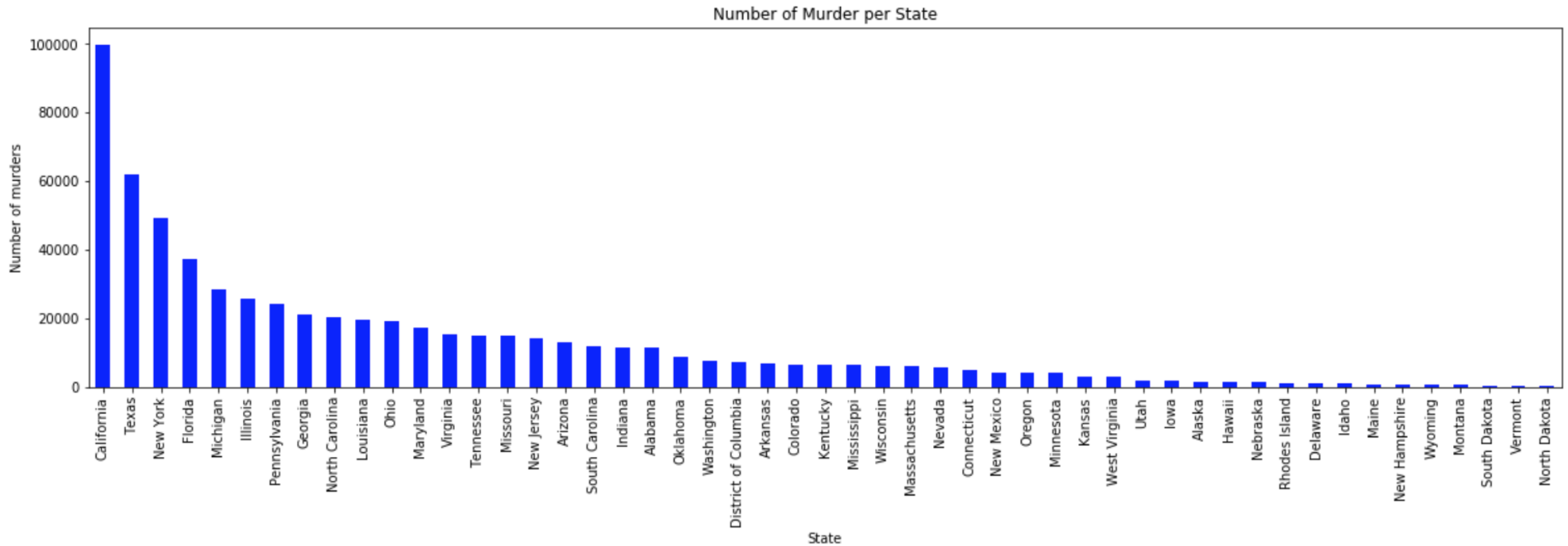
PROFILING THE SERIAL KILLERS - STEPS

Step 2- Feasibility to profile serial killers
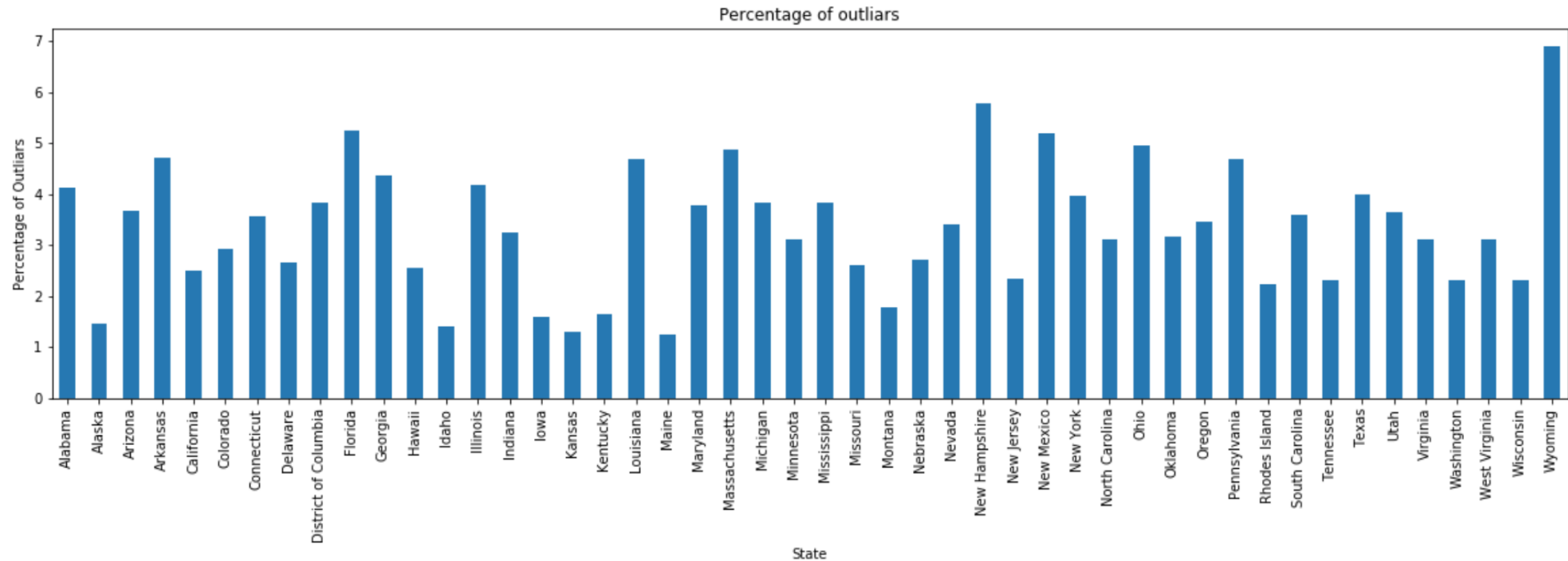
PROFILING THE SERIAL KILLERS - STEPS
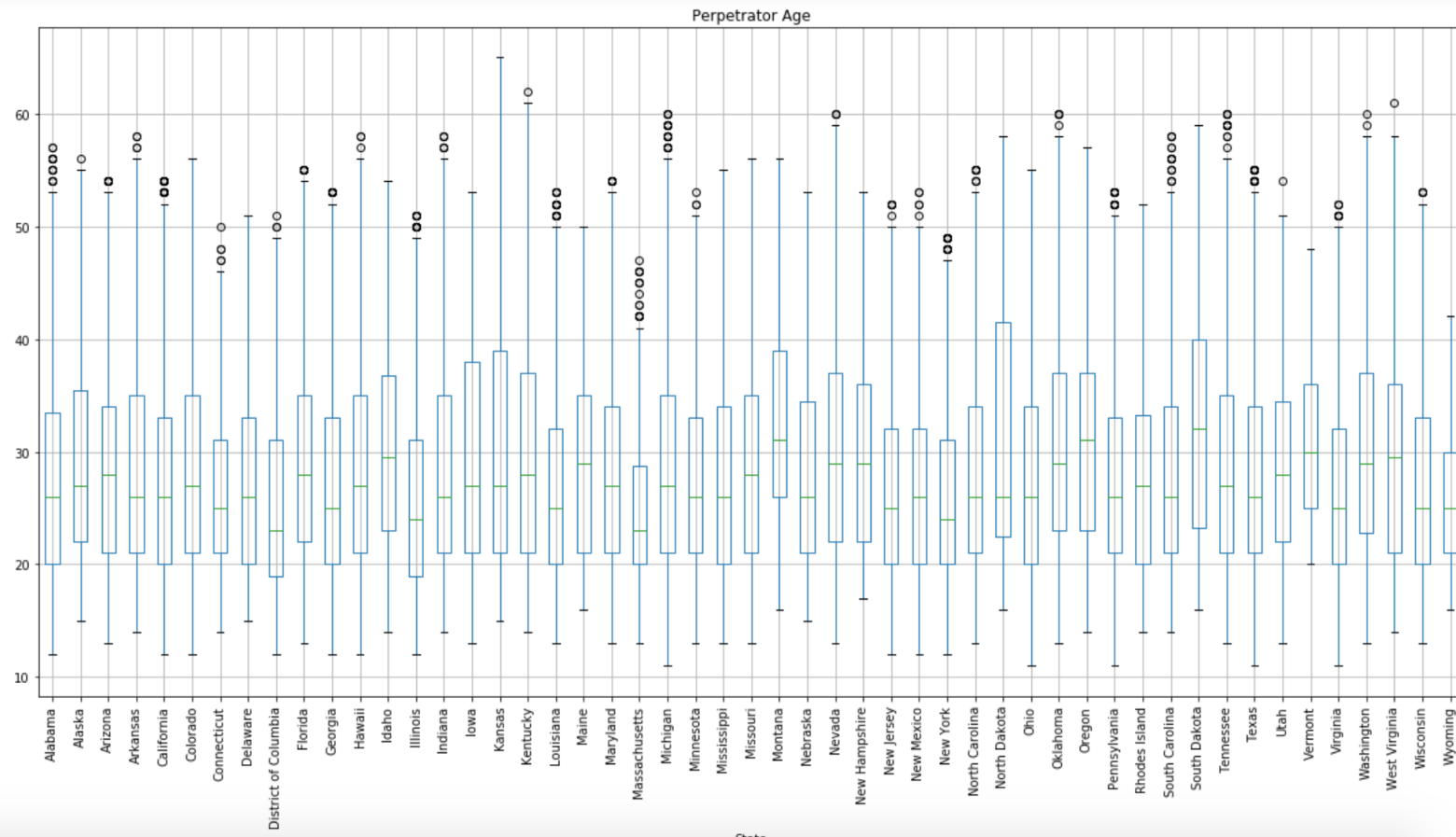
Step 3- Checking possible Outliers, and removing them

Perpetrator Age

PROFILING THE SERIAL KILLERS - STEPS

Step 4- Check percentages of Outliers

Percentage of outliars

PROFILING THE SERIAL KILLERS - STEPS

Step 5- Ages with removed outliers

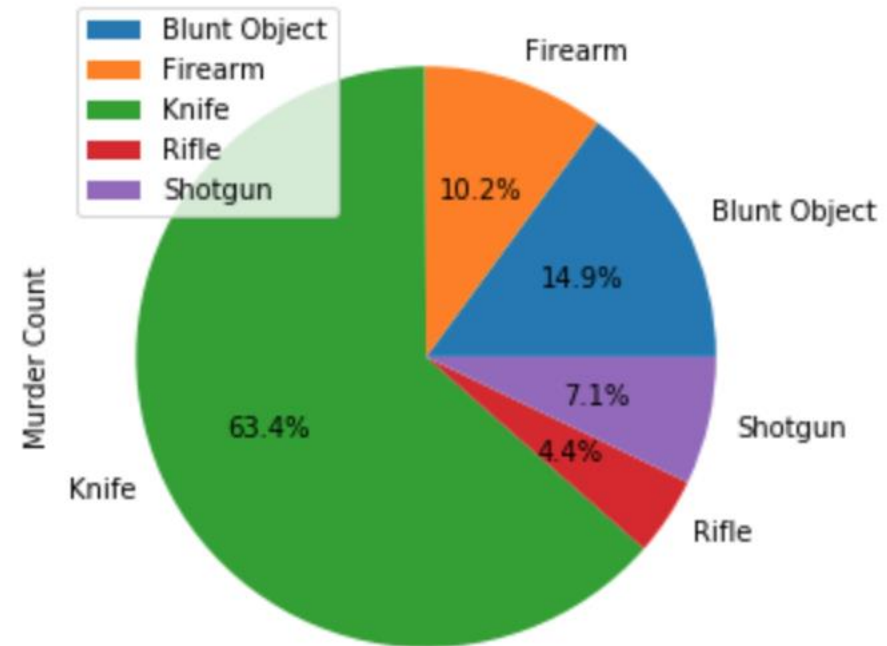Perpetrator Age

PROFILING THE SERIAL KILLERS - RESULTS

Profiles

Victim Age	Perpetrator Age	Victim Sex	Victim Race	Perpetrator Sex	Perpetrator Race	State	Weapon	Murder Count
(20, 30]	(20, 30]	Male	Black	Male	Black	Wisconsin	Firearm	5
(30, 40]	(20, 30]	Male	White	Male	White	West Virginia	Knife	3
(30, 40]	(20, 30]	Male	White	Male	White	Washington	Rifle	9
(20, 30]	(20, 30]	Male	Black	Male	Black	Virginia	Firearm	9
(20, 30]	(20, 30]	Male	White	Male	White	Utah	Knife	3
(20, 30]	(20, 30]	Male	White	Male	White	Texas	Knife	63
(20, 30]	(20, 30]	Male	Black	Male	Black	Tennessee	Firearm	12
(20, 30]	(20, 30]	Male	Black	Male	Black	South Carolina	Firearm	8
(20, 30]	(20, 30]	Male	Black	Male	Black	Pennsylvania	Knife	16
(20, 30]	(10, 20]	Male	White	Male	White	Oregon	Knife	6
(20, 30]	(30, 40]	Male	White	Male	White	Oklahoma	Shotgun	6

PROFILING THE SERIAL KILLERS - RESULTS

Profiles- Preferred Weapon

Weapon	Murder Count
Knife	1653
Blunt Object	389
Firearm	265
Shotgun	185
Rifle	114

PROFILING THE SERIAL KILLERS - RESULTS

Profiles- Perpetrator Sex, and Race

Person Count

Perpetrator Sex	
Male	310

Person Count

Perpetrator Race	
Asian/Pacific Islander	2
Black	125
White	183
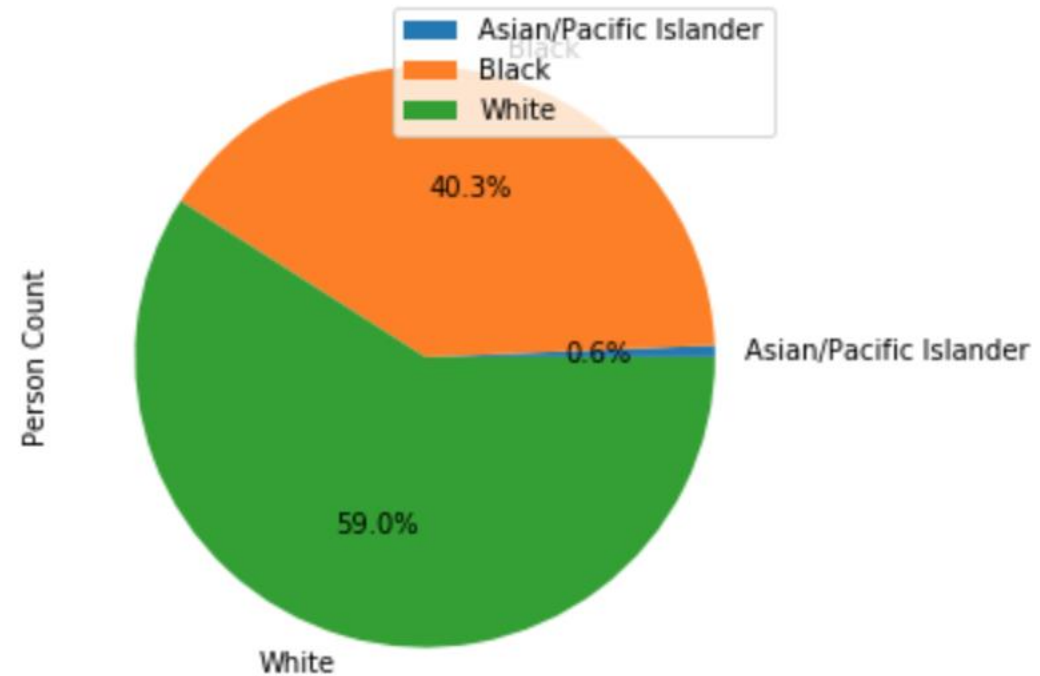
PROFILING THE SERIAL KILLERS - RESULTS

Profiles- Perpetrator Age

Perpetrator Age	Person Count
(10, 20]	77
(20, 30]	180
(30, 40]	47
(40, 50]	6
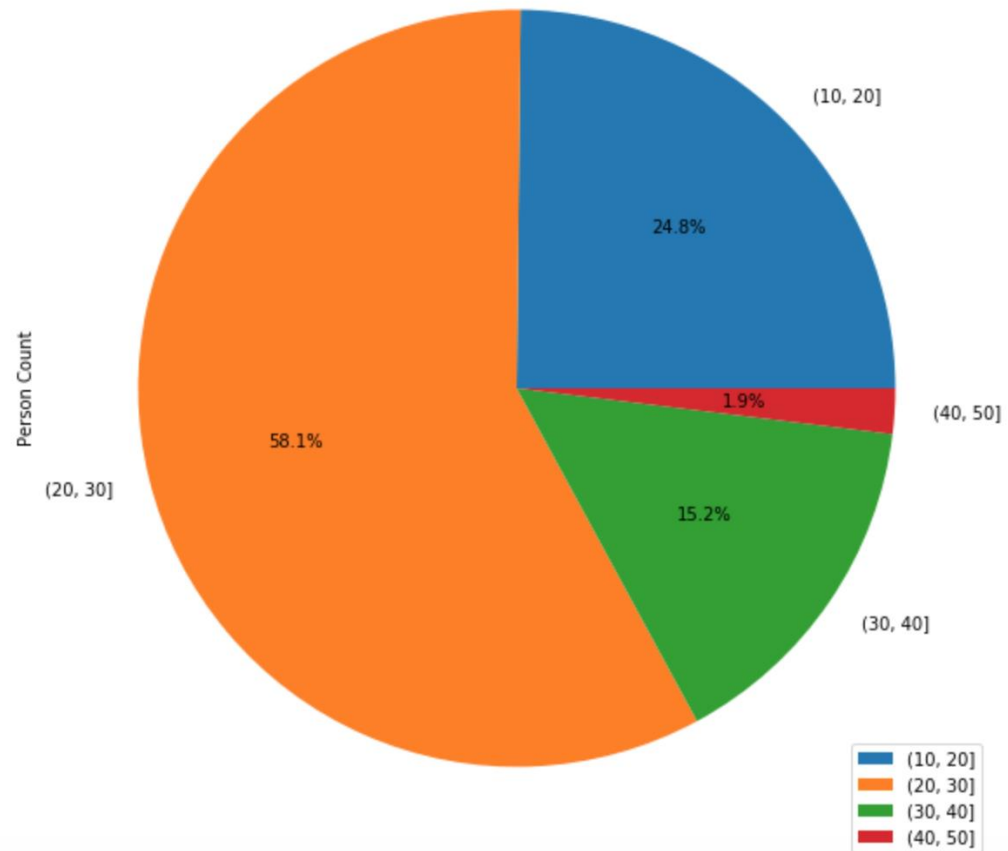
PROFILING THE SERIAL KILLERS - RESULTS

Profiles- Victim Sex

Person Count

Victim Sex	
Female	5
Male	305
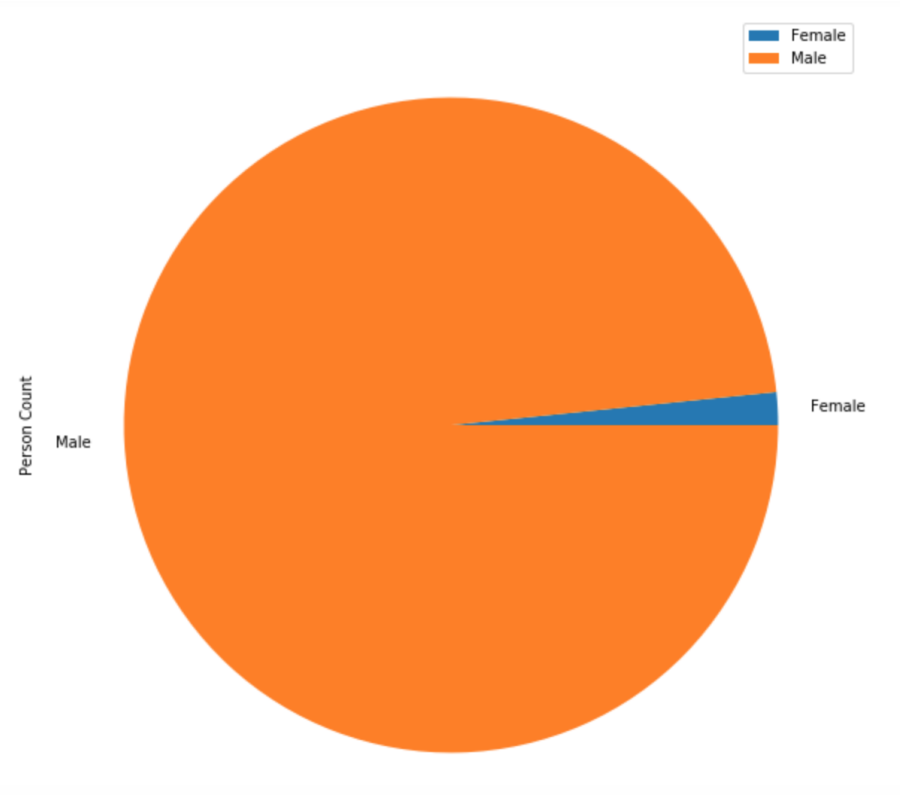
PROFILING THE SERIAL KILLERS - RESULTS

Profiles- Victim Race

Victim Race	Person Count
Asian/Pacific Islander	2
Black	121
Native American/Alaska Native	1
White	186
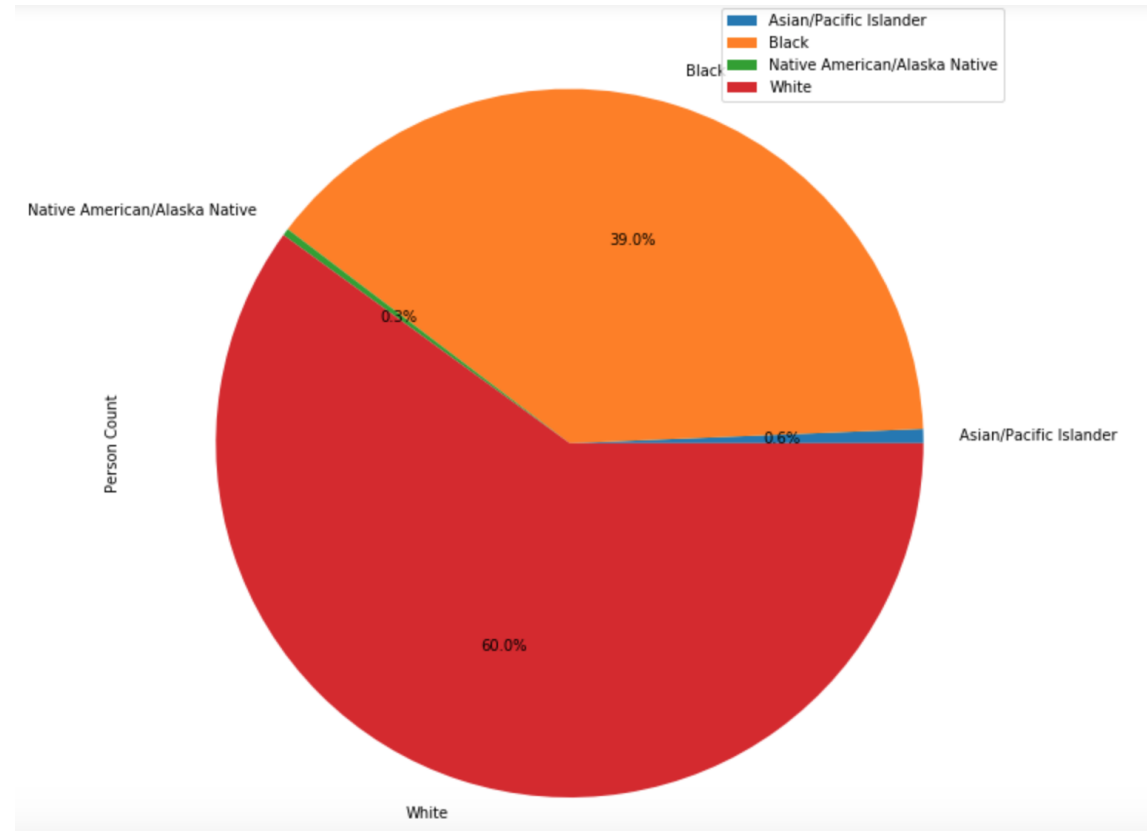
PROFILING THE SERIAL KILLERS - RESULTS

Profiles- Victim Age

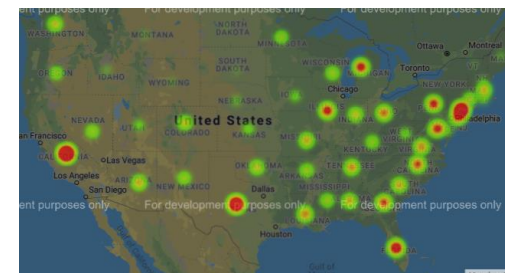| Victim Age	Person Count
(10, 20]	59
(20, 30]	171
(30, 40]	56
(40, 50]	18
(50, 60]	4
(60, 70]	1
(80, 90]	1
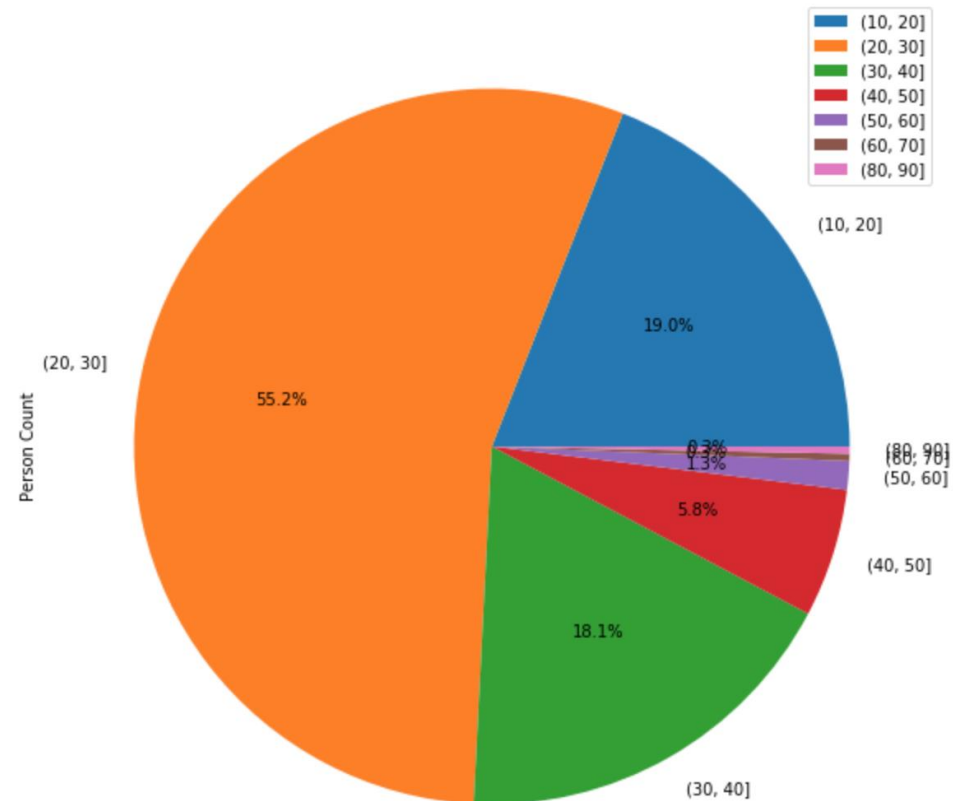
WEAPON OF CHOICE BY STATE (HEATMAP)
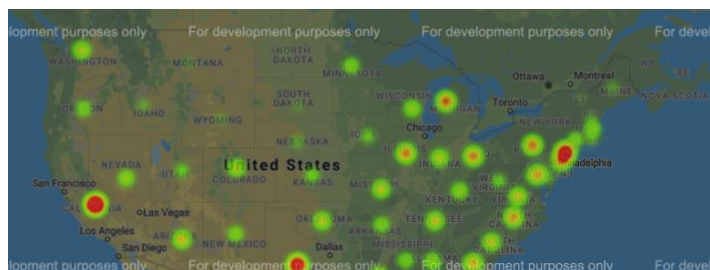
Blunt object
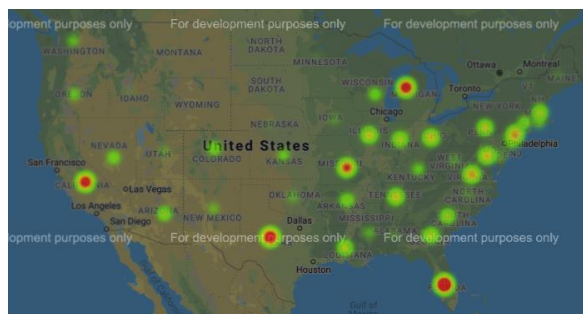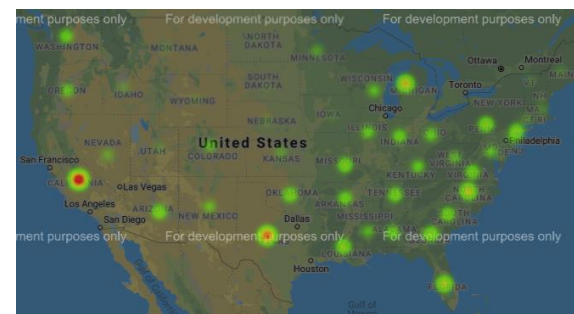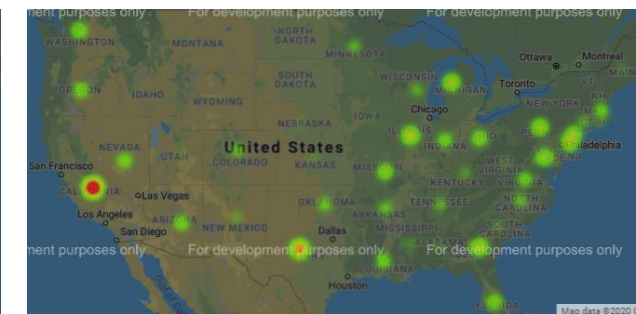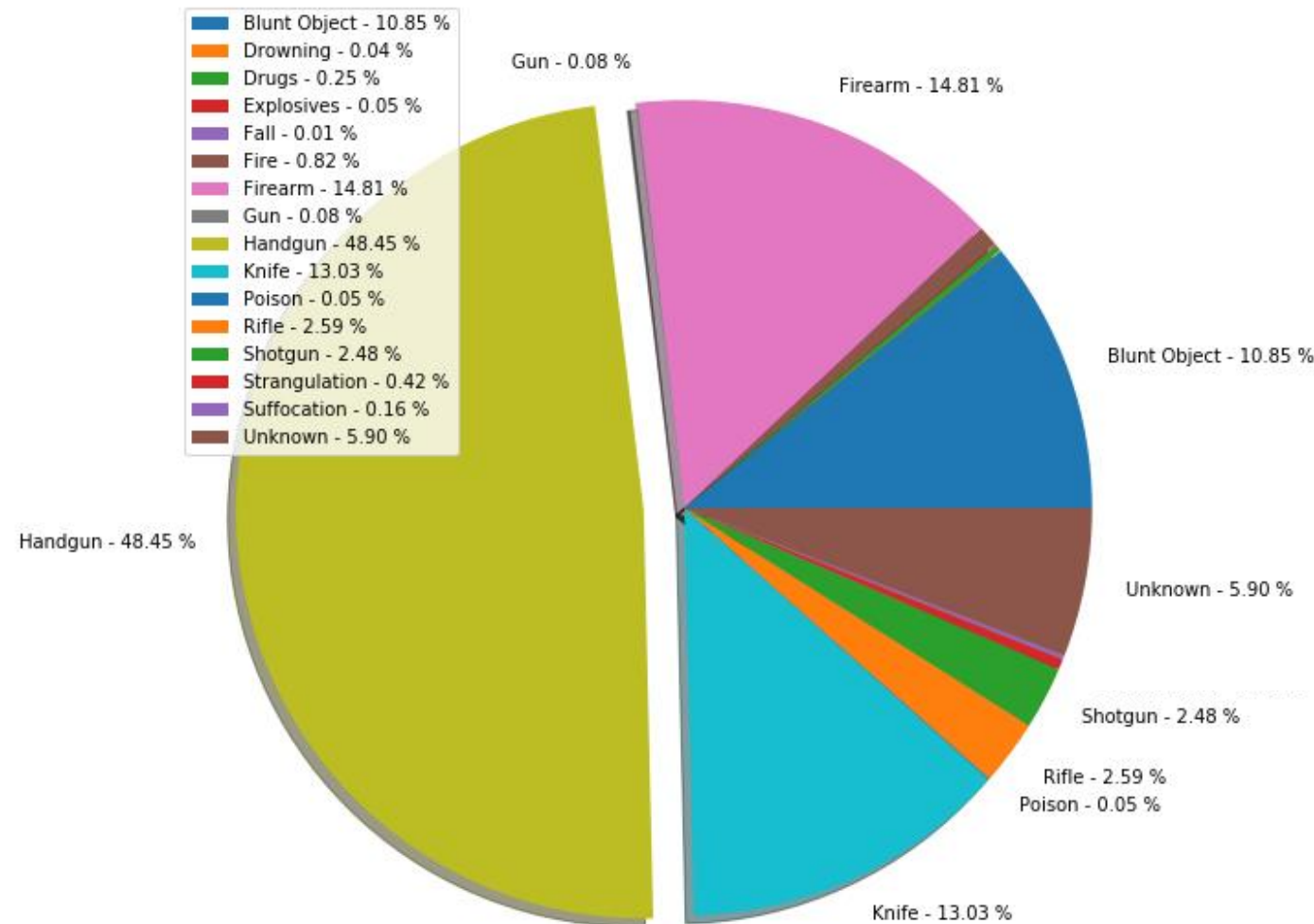

Drowning
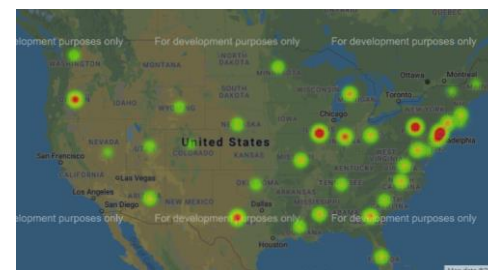
Fall

Knife

Firearm

Handgun

Rifle

Strangulation

HOMICIDES BY HANDGUN IN THE US BY STATE
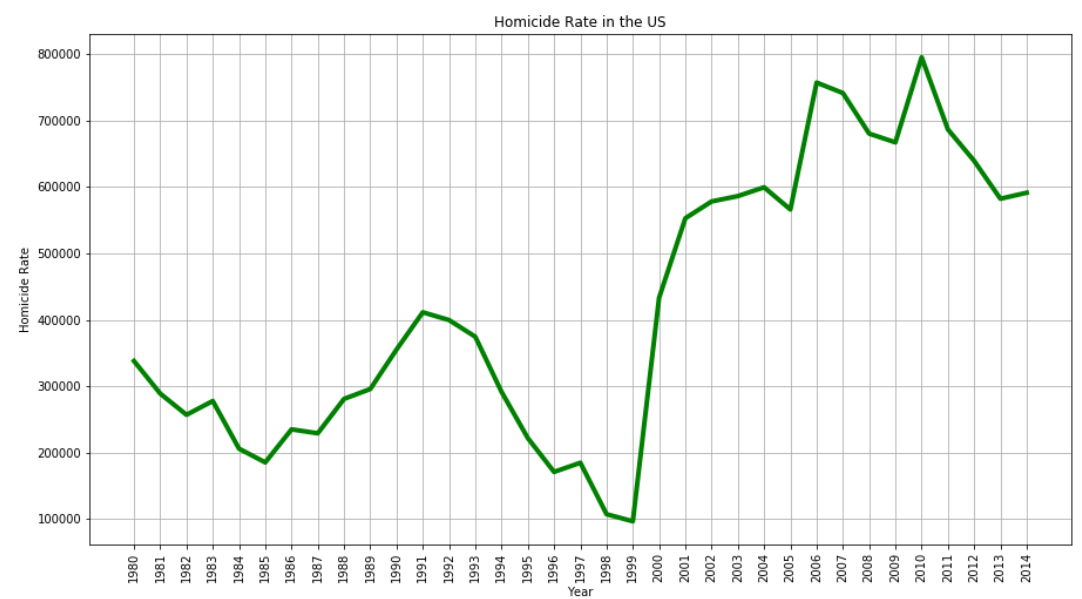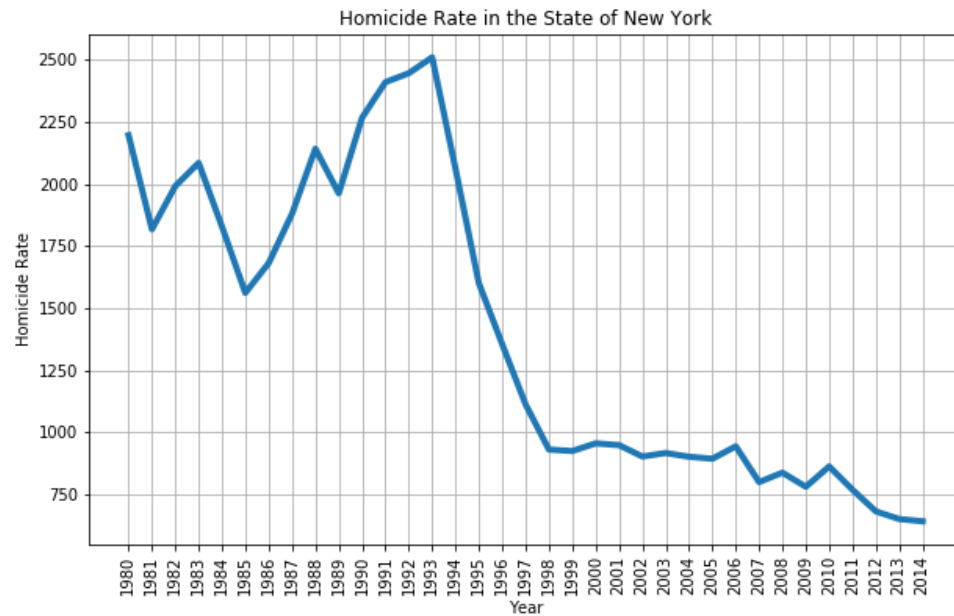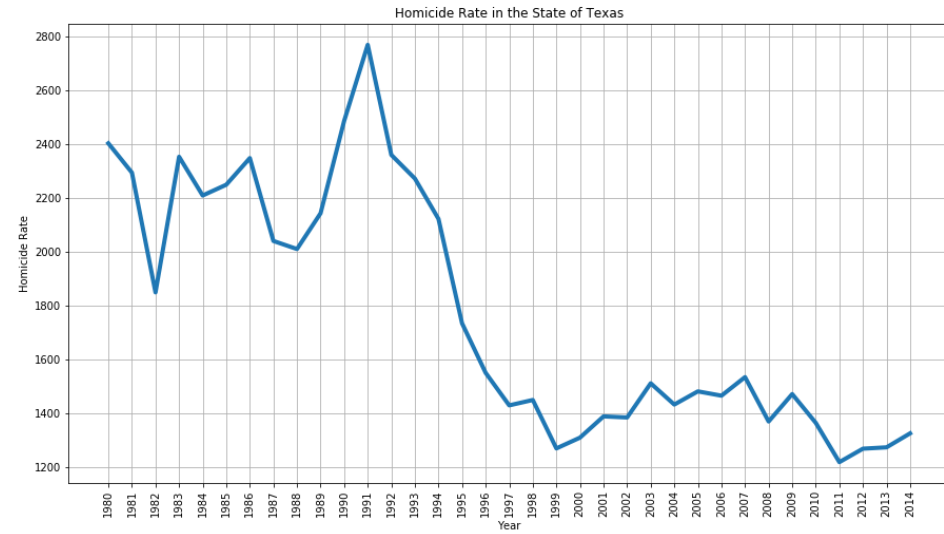
TYPES OF WEAPONS USED AND THEIR DISTRIBUTION

NUMBER OF HOMICIDES IN US STATES AND INCIDENTS DURING THIS PERIOD

	State	Incidents Per State	Percentage
0	California	99783	15.628847
1	Texas	62095	9.725838
2	New York	49268	7.716766
3	Florida	37164	5.820936
4	Michigan	28448	4.455763
5	Illinois	25871	4.052132
6	Pennsylvania	24236	3.796045
7	Georgia	21088	3.302979
8	North Carolina	20390	3.193652
9	Louisiana	19629	3.074458

HOMICIDES COMMITED DURING 1980 - 2014

Homicide Rate in the State of Texas

Homicide Rate in the State of California

Homicide Rate in the State of New York

Homicide Rate in the US
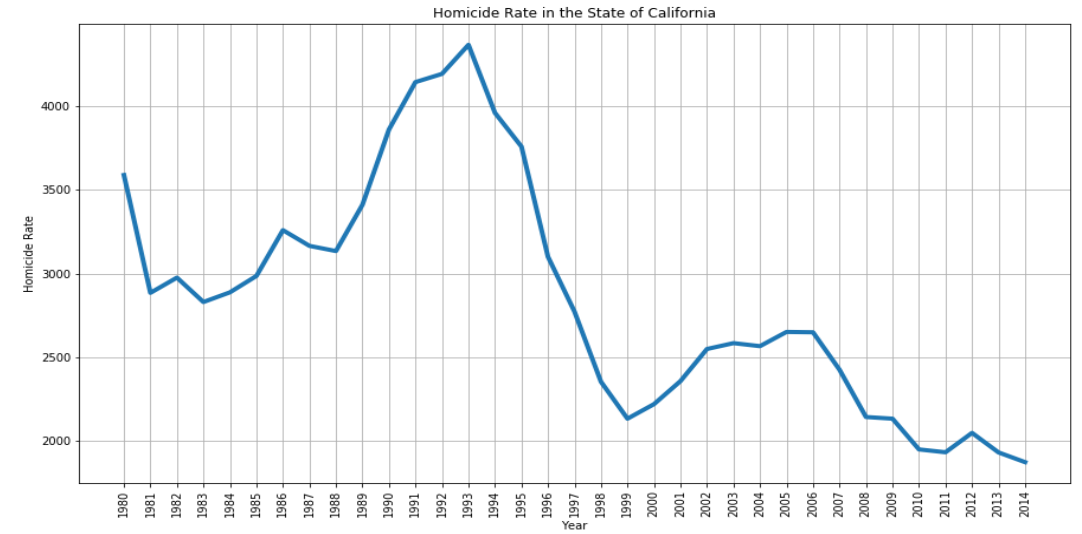
IS VIOLENT CRIME SEASONAL?
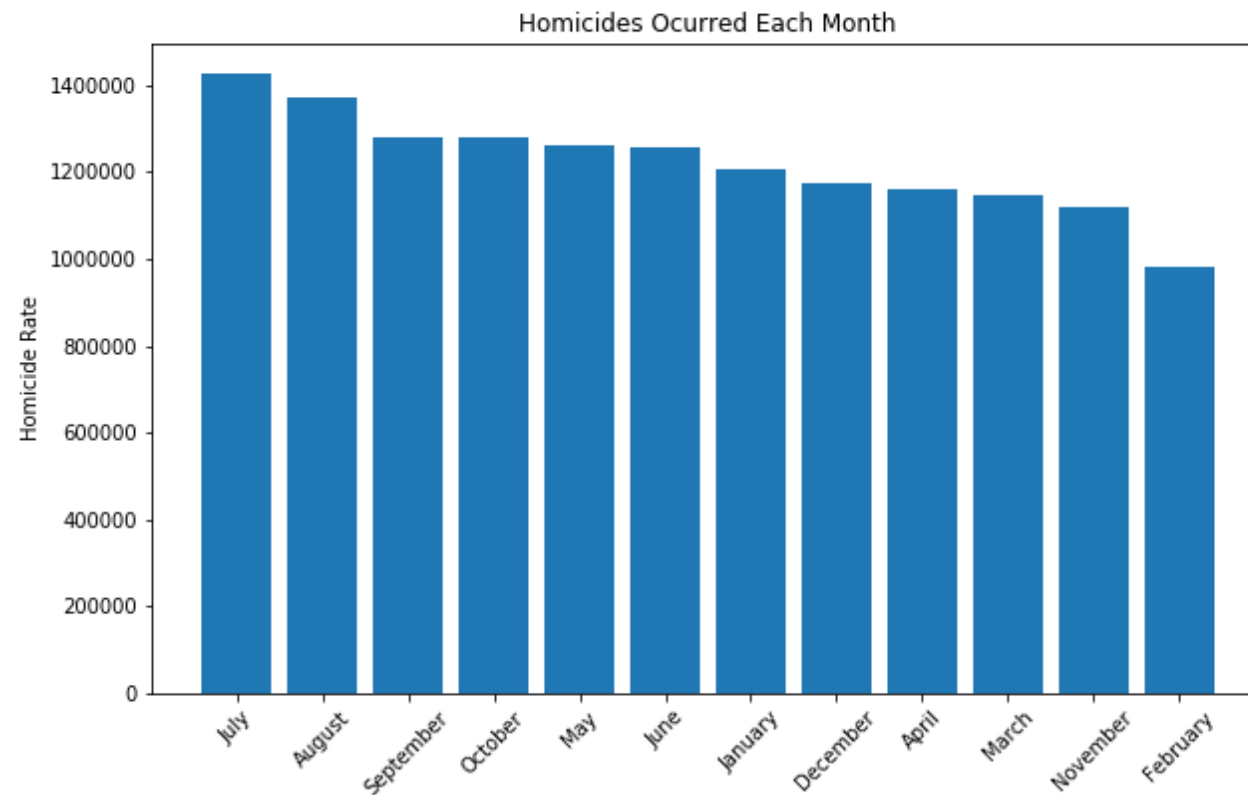
QUESTIONS

¿What is the preferred weapon of choice per state?

¿What are the possible profiles for serial killers per state?

¿Are the serial killers white, male on their 20s-30s whom kill intra-race?

POST MORTEM

- Difficulty was found in profiling the killers by city due to the large number of cities available in the data set.
- Most victims came out males, we expected females.
- Possible to make a classifier.
- Further the profile researcher in periods of murders.

GRACIAS

ALEJANDRO

ANDRÉS

MAURICIO

REFERENCE

- Pakhomou, S.-M. (2004, November). Serial Killers: Offender's Relationship to the Victim and Selected Demographics. Retrieved March 5, 2020, from https://www.researchgate.net/publication/247827058_Serial_Killers_Offender's_Relationship_to_the_Victim_and_Selected_Demographics

- Project, M. A. (2017, February 10). Homicide Reports, 1980-2014. Retrieved March 1, 2020, from https://www.kaggle.com/murderaccountability/homicide-reports