Terry Stops:

A Classification Project by Terry Thompson

Overview:

Terry Stop:

- Allows police to detain a person on reasonable suspicion
- Lower standard than Probable Cause
- No baseline defined for police behavior

In this report:

- Assess effectiveness of Terry Stops
- Predict arrest rates through modeling

1. Intro

For this project I used the Seattle Open Data websites information on Terry stops here. The data set includes:

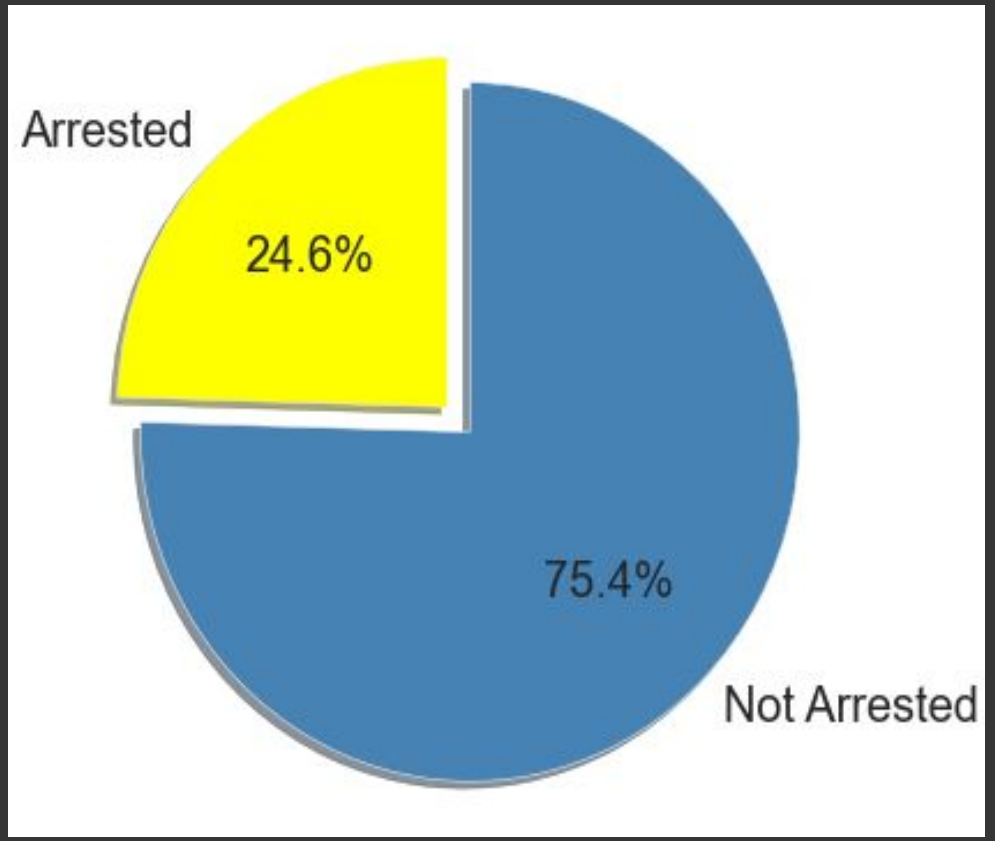
- Subject Age, Perceived Race, Gender
- Types of Weapons, Frisk Flags, Arrests

CRISP DM used in research.

We will now look at this process.

Arrests

- Total arrests as a result of the stop
- Not necessarily arrested at the stop
- 24.6% arrested, 75.4% not arrested



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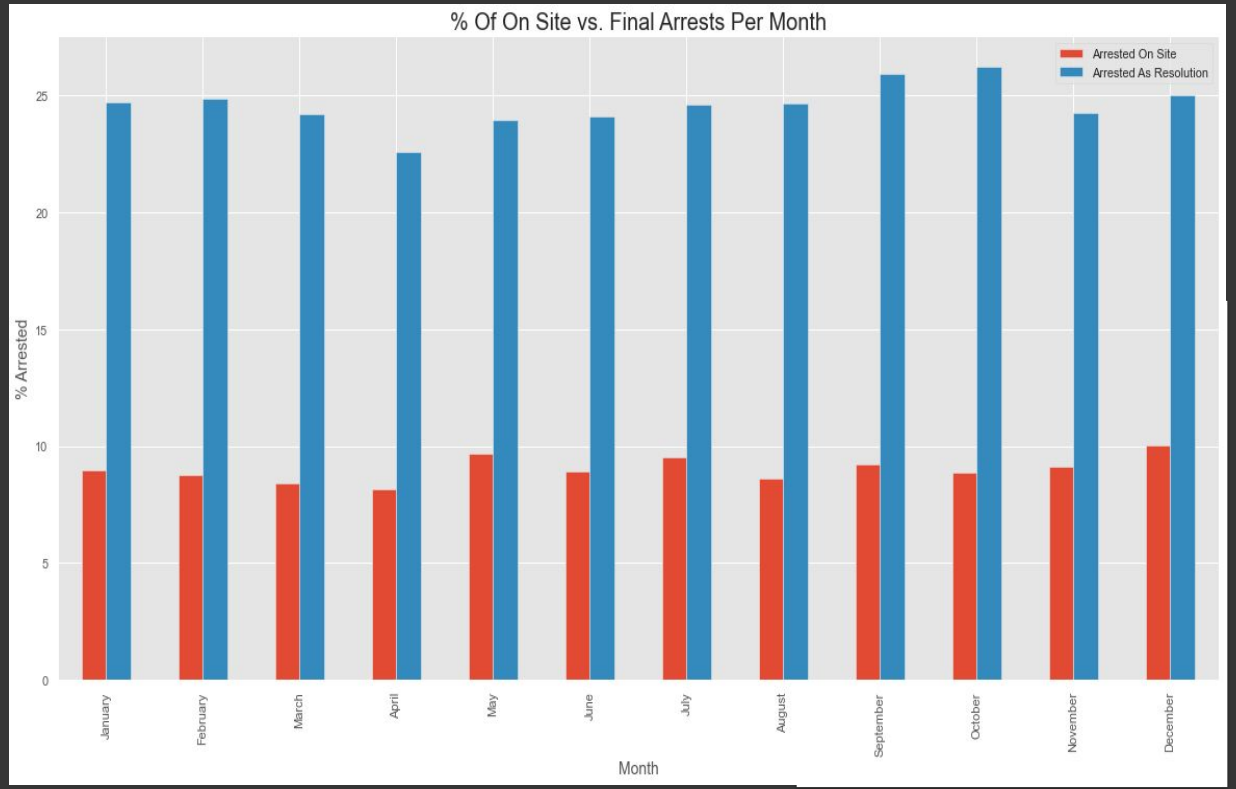
- Arrests broken down by month

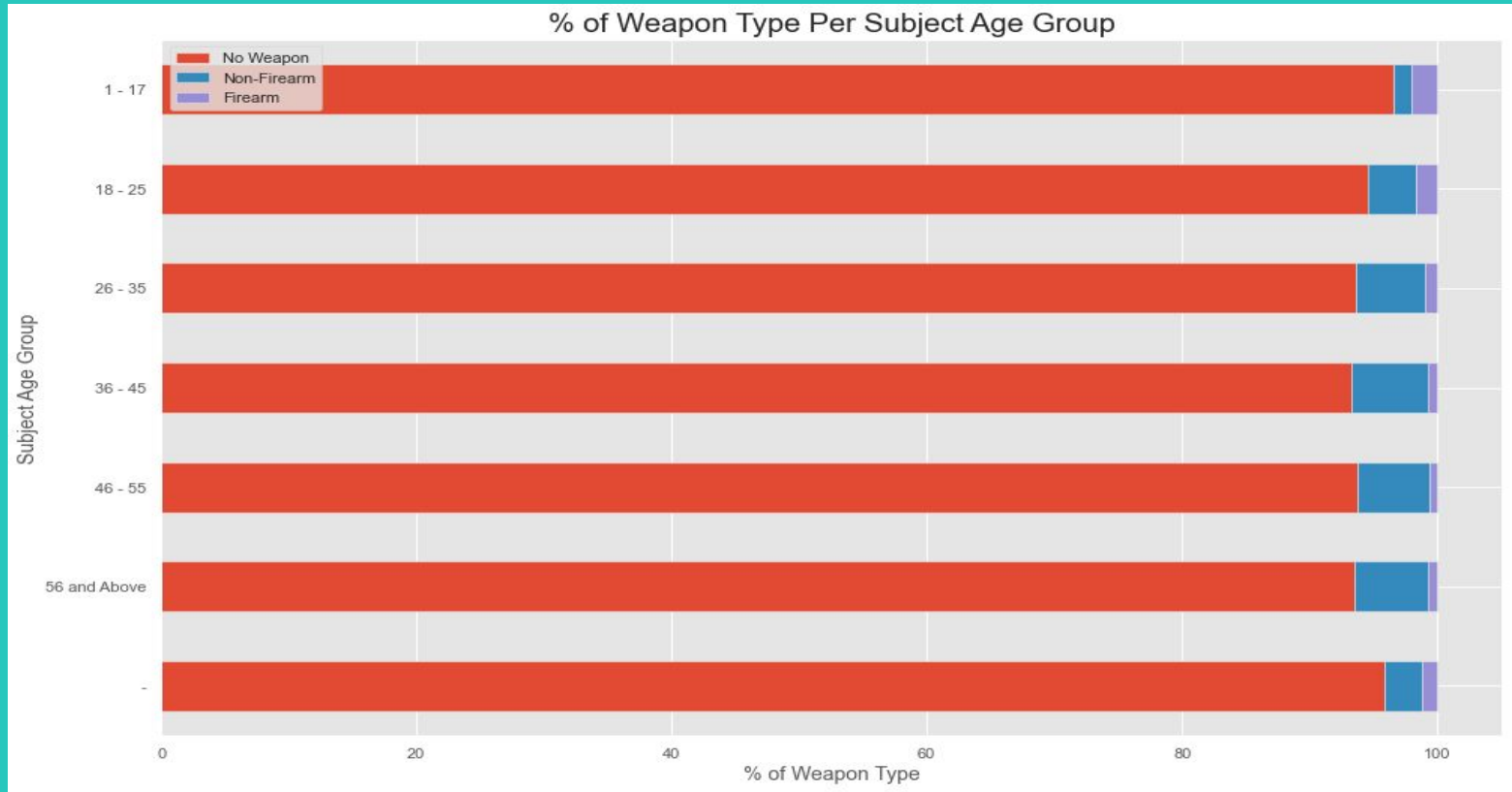
- Approximately 9% of arrests occur at stop.



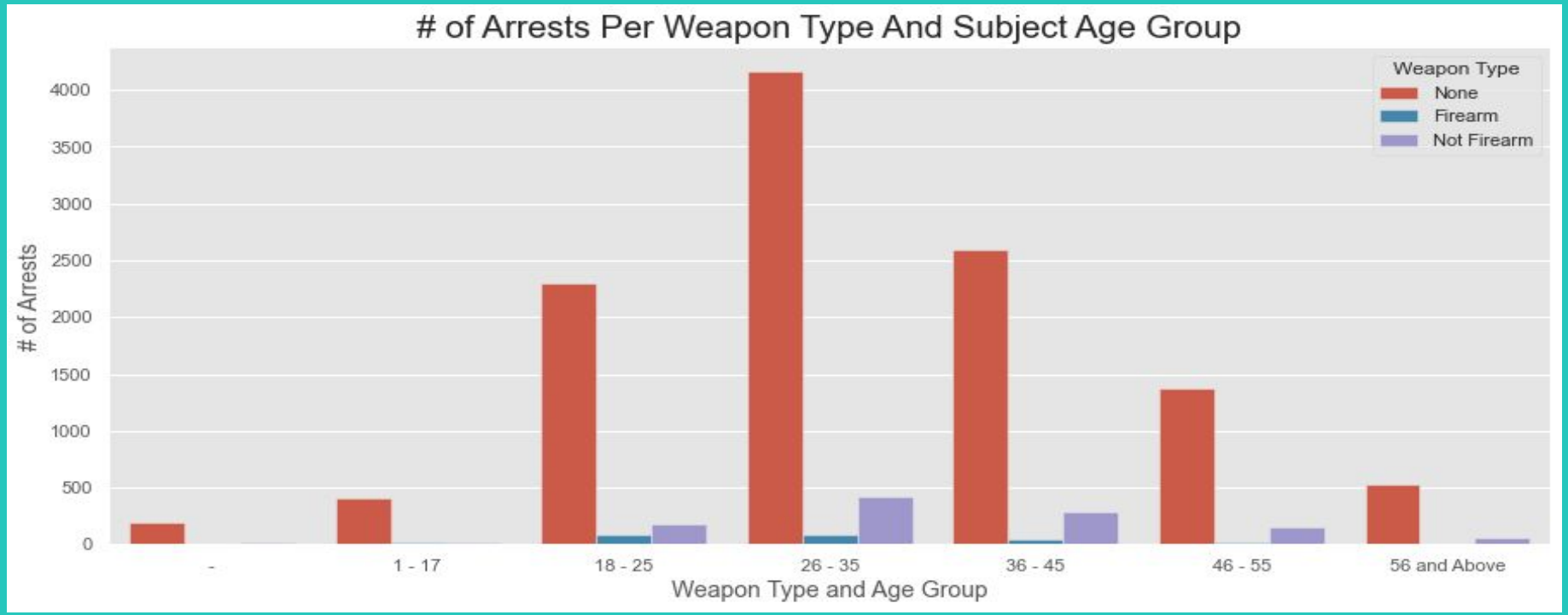
Percentage of Weapson Type Found Per Age Group

- Age groups 26-35 and 36-45: most weapons found

- Most stops did not yield weapons

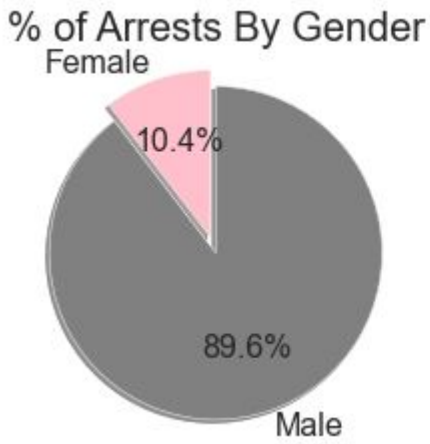


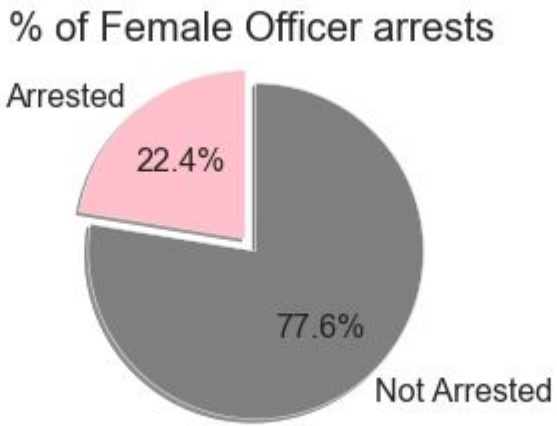
Here we see a clear breakdown of the age groups in which subjects were arrested and whether or not they had weapons. The age group of 26-35 has considerably more arrests, both with and without weapons.

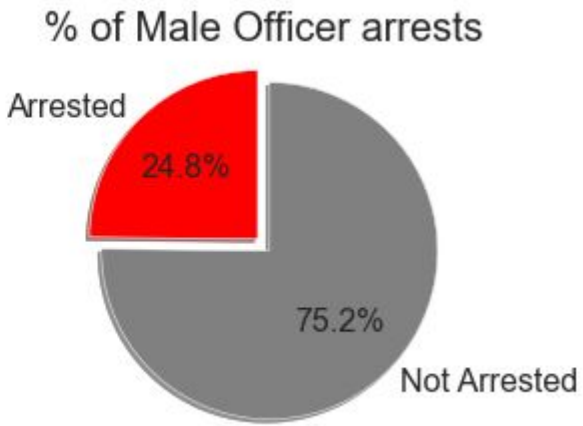


Arrests by Gender

- Males are arrested at higher rates
- Female and male officers arrest rates are close.







Arrest Information by Precinct

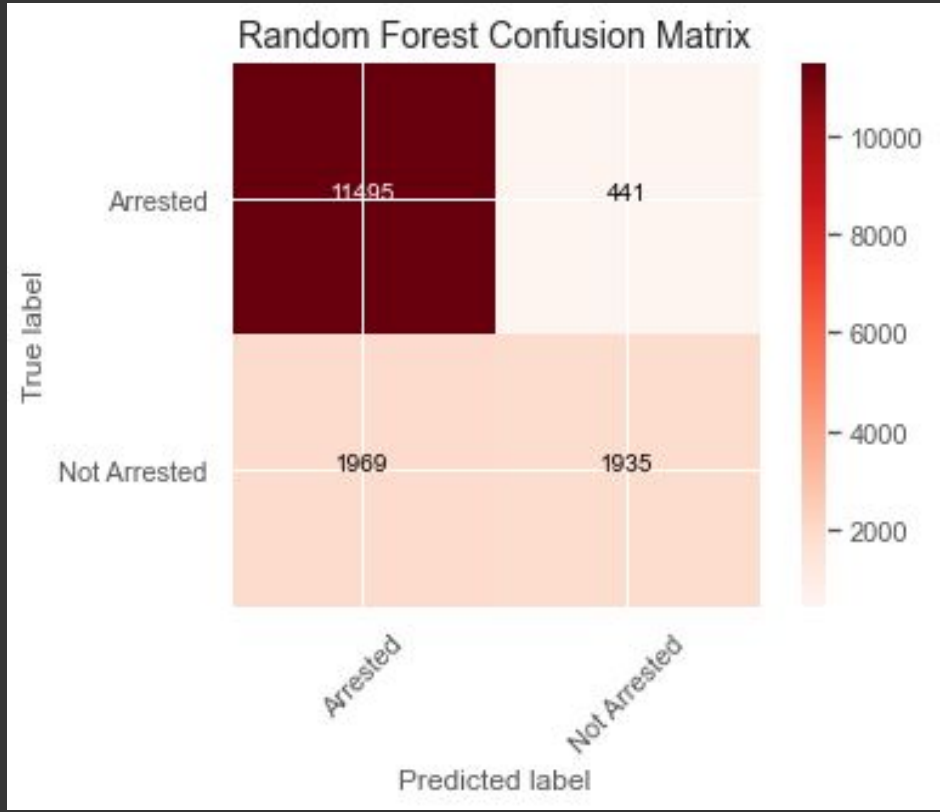
- Highest percentage of stops in West Precinct
- Highest percentage of arrests in East Precinct
- Unknown Precinct: High stop rate, lowest arrest rate

	# of Terry Stops	% Arrested	% Not Arrested
West	13690	32.300950	67.699050
North	11528	25.069396	74.930604
-	10196	3.177717	96.822283
East	6824	33.118406	66.881594
South	6255	31.638689	68.361311
Southwest	2320	23.836207	76.163793
SouthWest	1704	28.051643	71.948357
Unknown	200	25.500000	74.500000
OOJ	59	8.474576	91.525424
FK ERROR	22	18.181818	81.818182

Modeling

- Most accurate model predicted with 84.78% accuracy

- Most accurate model had more false positives than other models, but also had the least amount of false negatives.



Most Important Features of the Most Accurate Model

- Arrest Flag_Y: The Subject was arrested
- Arrest Flag_N: The Subject was not arrested
- Precinct_-: The Unknown Precinct

Conclusions:

- Best model predicts 84.78%
- Approx. 25% result in arrest
- 9% arrested at stop

- Recommend training officers
  -Fill out paperwork completely
  -Train officers when appropriate to stop

- Not an effective means for weapon seizure

Further research :

While the model can predict with an approximate 85% success rate, further research is needed on this subject. Potential topics for research could include:

- Crime rates in each precinct.
- Racial bias.

Thank you for your time!

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