Dashboards
US Crime Trends and Analysis

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It's nice to meet you!

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Introduction & Objective

- Crime rates have long been a social concern.

- Understanding underlying patterns can help authorities allocate resources efficiently.

- The project aims to identify trends and patterns in crime occurrences across cities.

- Insights will be derived based on demographic factors.

- The Crime Dataset covers over 10,000 crime records.

Part 1: Data Cleaning

- The dataset was sourced from Kaggle and cleaned using Python in Jupyter Notebook.

- Data cleaning techniques addressed consistency, missing values, and dataset standardization.

- Several columns labeled as "Unknown" were converted to NaN for cleaning, and columns with high missing values were dropped (e.g., 'Victim Ethnicity,' 'Perpetrator Sex').

- Rows with null values in critical columns like 'Agency Name' and 'Weapon' were removed.

- The final cleaned dataset contains 599,679 rows.
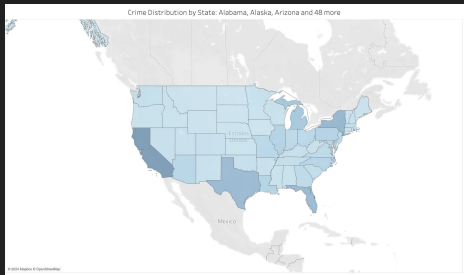
Part 2: Key Data Fields and Structure
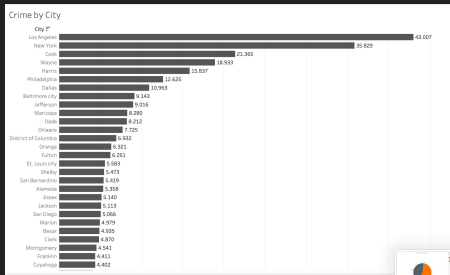
What we want to find out?	How are we finding it out?
Geographical Trends	City, State, and Record ID (count)
Demographic Trends (Victim and Perpetrator) - Perpetrator by Age and Relationship - Victim by Age, Race, and Sex	- Perpetrator Count, Perpetrator Age (bin), and Relationship (group) - Victim Sex, Victim Age (bin), Victim Race, and Victim Count
Weapons Trends	Weapon, Crime Solved, and Record ID (count)
Time-Series Trends	Year, Record ID (count), and Victim Sex

Note: The field Crime Type was unused in this analysis, as the dataset primarily focused on two types of crime: involuntary manslaughter and murder
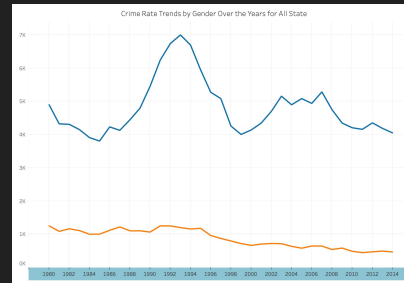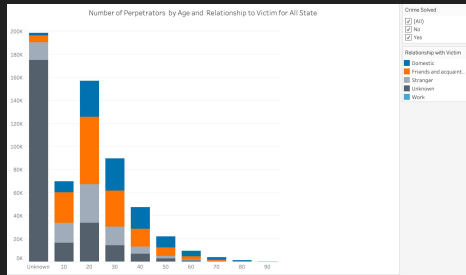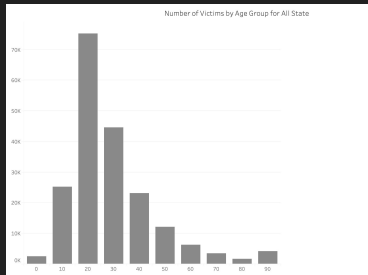
Part 3: Worksheet Creation
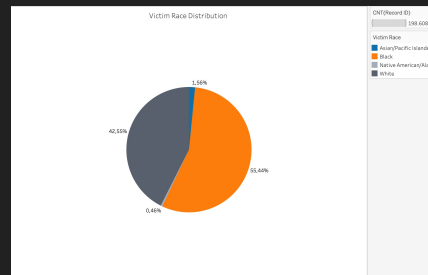

Map Visualization
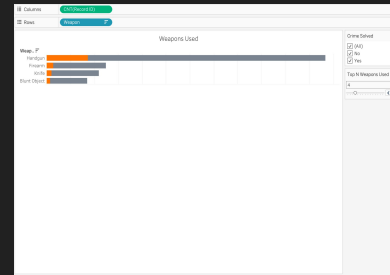
Crime by City
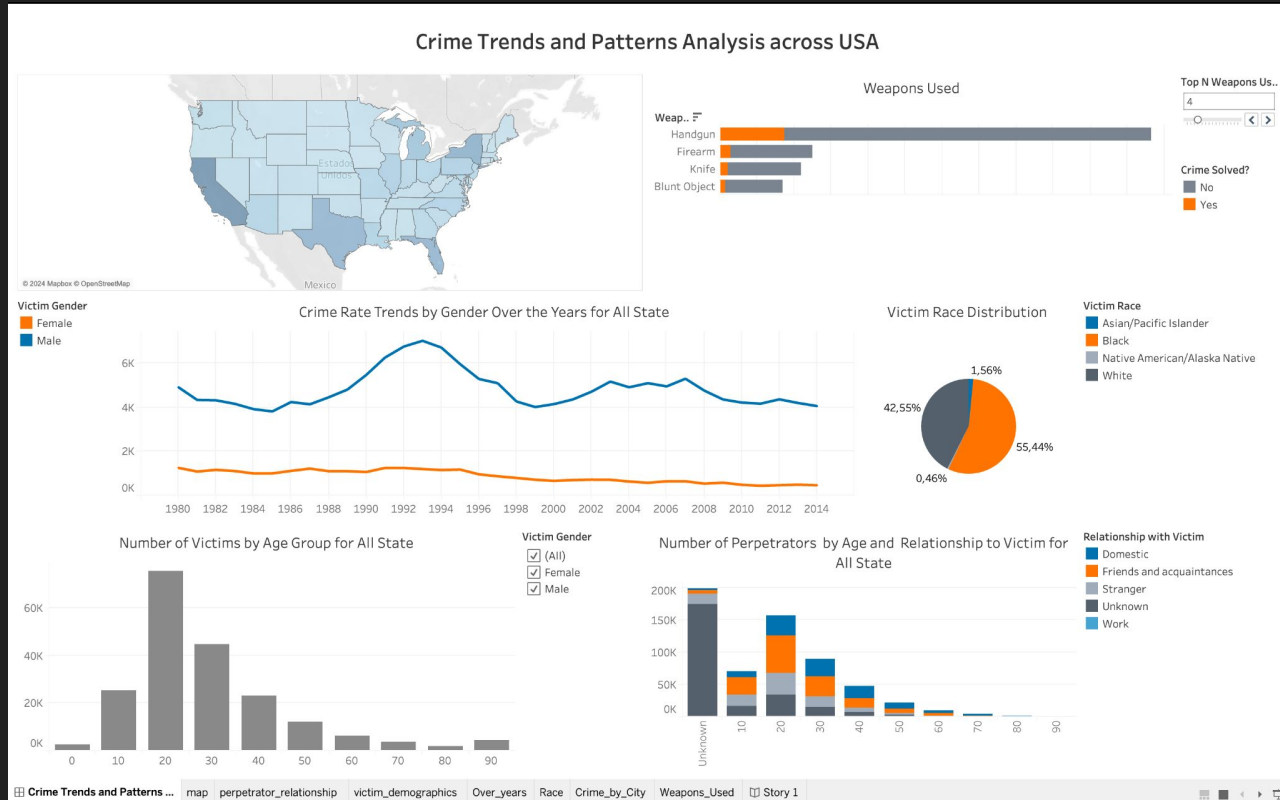
Over Years

Perpetrator Relationship
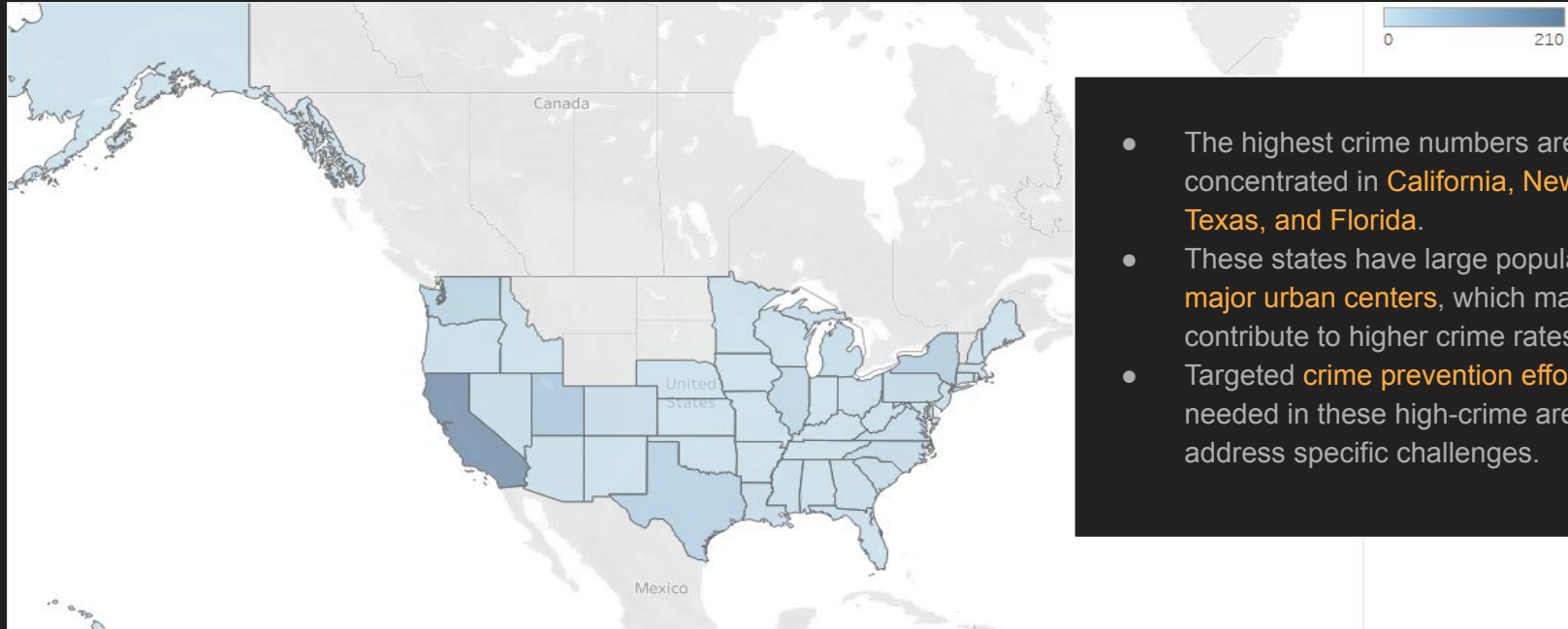
Victim Demographics

Race Distribution

Weapons Used & Crime Solvability

Part 4: Dashboard Creation

Part 5: Story and Insights

- The highest crime numbers are concentrated in California, New York, Texas, and Florida.
- These states have large populations and major urban centers, which may contribute to higher crime rates.
- Targeted crime prevention efforts may be needed in these high-crime areas to address specific challenges.
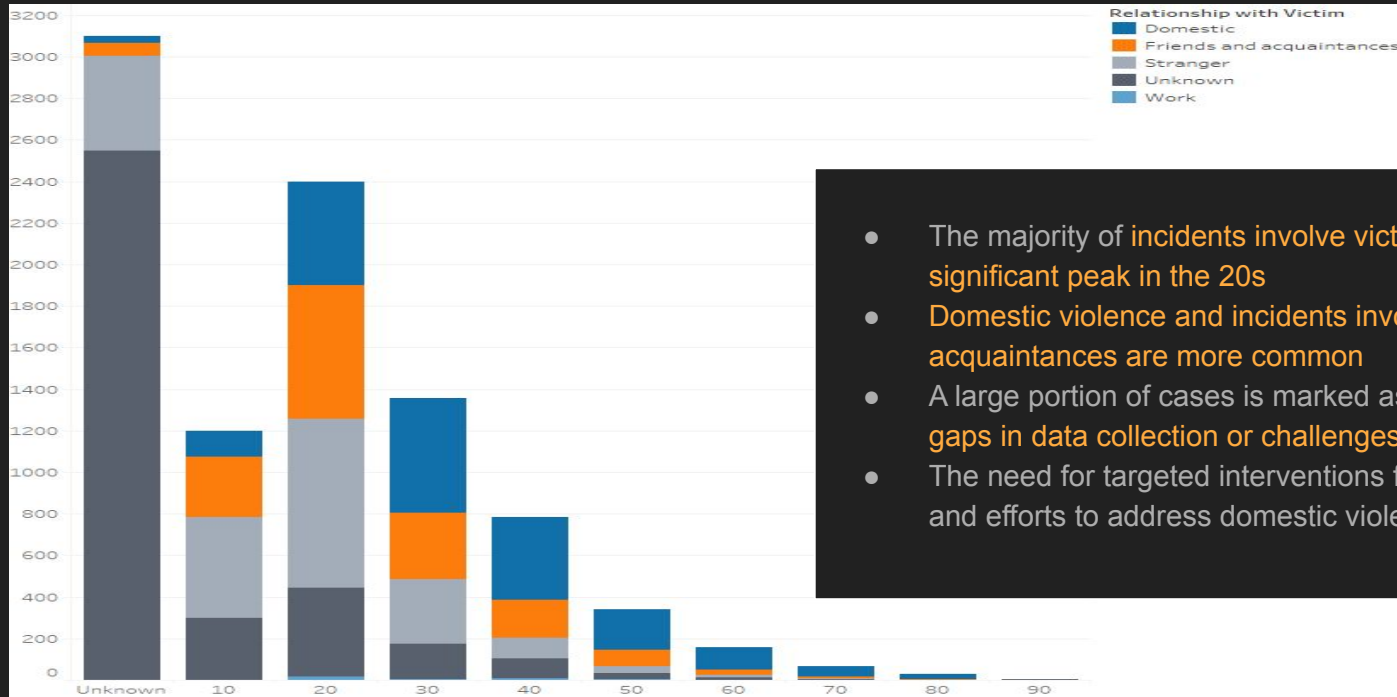
Geographical Distribution of Crime

Part 5: Story and Insights

Weapon Usage in Crimes

- Handguns are the most commonly used weapon, highlighting the prevalent issue of gun violence in the U.S.
- The chart also shows that many handgun-related cases are unsolved.
- The data suggests a need for focused efforts on addressing handgun violence and improving crime-solving rates for firearm-related incidents.
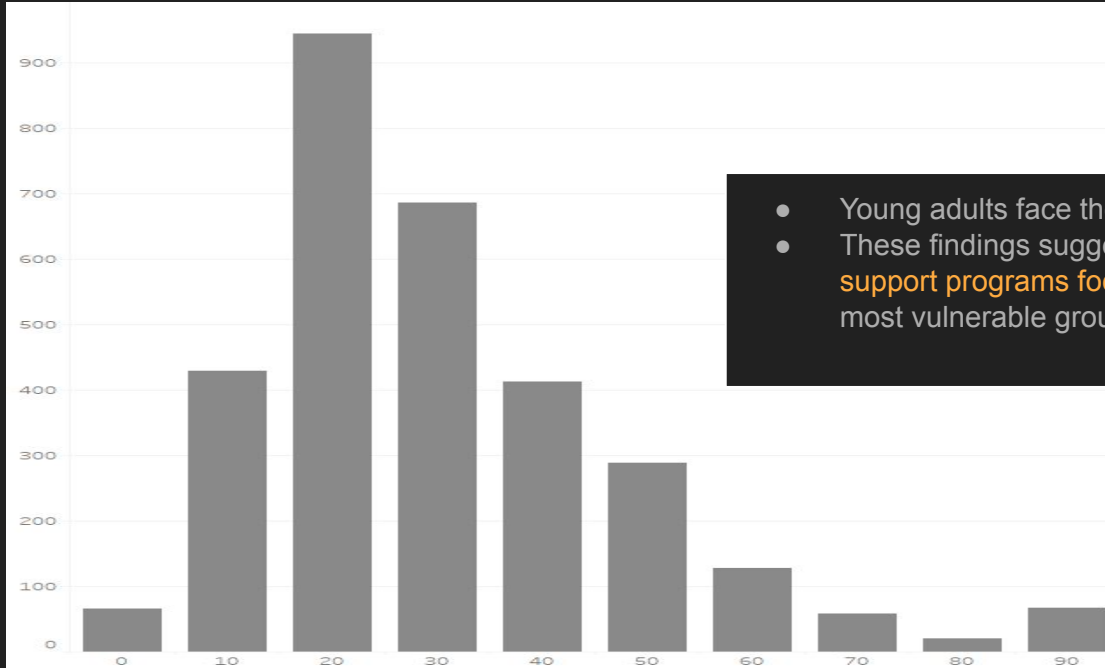
Part 5: Story and Insights

Age Distribution and Victim-Perpetrator Relationships

Relationship with Victim
- Domestic
- Friends and acquaintances
- Stranger
- Unknown
- Work

- The majority of incidents involve victims aged 10-40, with a significant peak in the 20s
- Domestic violence and incidents involving friends and acquaintances are more common
- A large portion of cases is marked as "Unknown," suggesting gaps in data collection or challenges in solving these cases
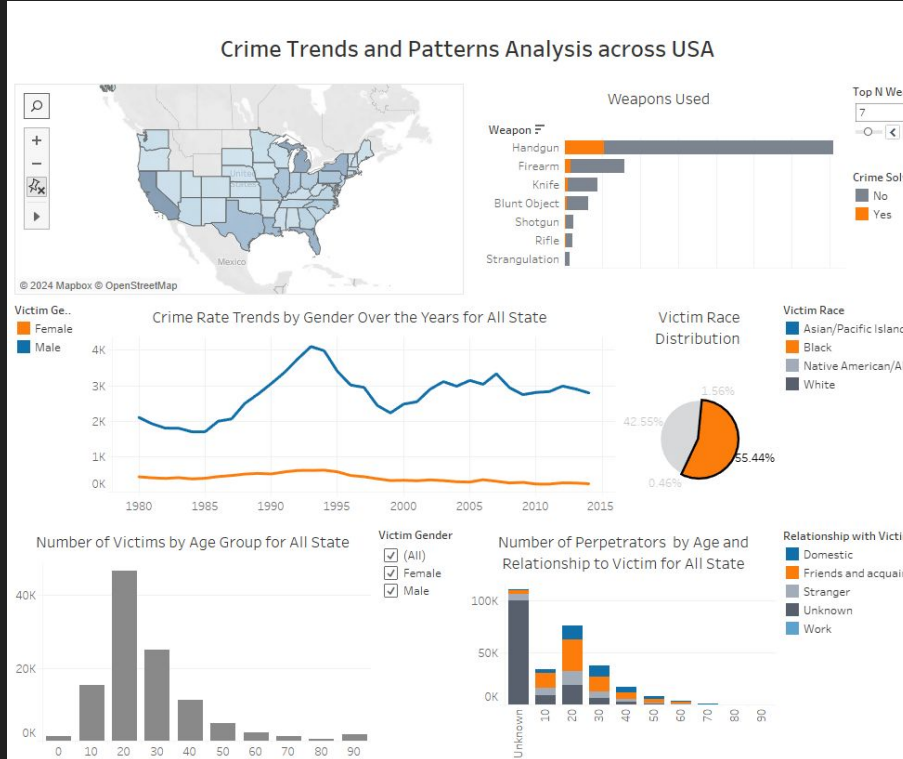- The need for targeted interventions focused on young adults and efforts to address domestic violence.

Part 5: Story and Insights

- Young adults face the greatest risk of becoming crime victims.
- These findings suggest a need for targeted crime prevention and support programs focused on young adults, who appear to be the most vulnerable group.
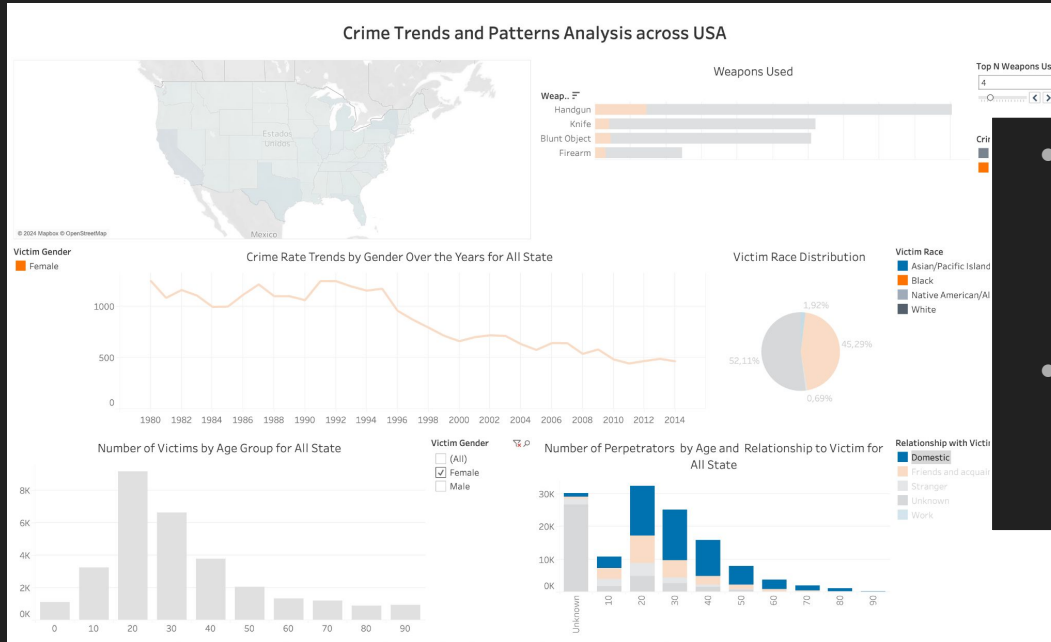
Age Distribution of Crime Victims

Part 5: Story and Insights

Domestic Relationship Patterns Among Female Victims

- The dashboard reveals that Black victims are more commonly reported in the southern states, while there is a noticeable absence of Black victims in the northwestern region.
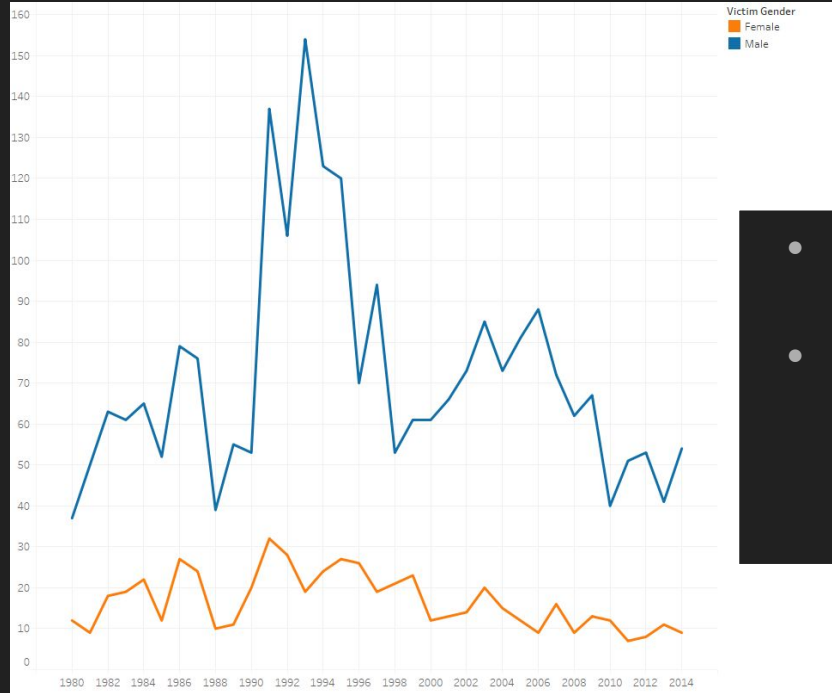- Influenced by factors such as demographic makeup, socio-economic conditions, and historical contexts in these areas.

Part 5: Story and Insights

Crime Trends and Patterns Analysis across USA

- This trend highlights the prevalence of domestic violence affecting female victims, suggesting that domestic-related crimes are a significant factor in female victimization.

- The findings underscore the need for targeted interventions and policies to address domestic violence and support female victims more effectively.

Domestic Relationship Patterns Among Female Victims

Part 5: Story and Insights

Gender Trends in Crime Victimization Over Time

- Men have consistently been the majority of victims compared to women

- Need for gender-specific strategies in crime prevention and support services, with particular attention to addressing the factors that put men at higher risk of becoming victims of severe violent crimes

Crime solved :)