

LA Crime Data Explorer Documentation

Description: The LA Crime Explorer is meant to allow the user to dig into the data to see meaningful metrics from the general, demographic, weapons and arrest status perspective. It is done via progressive disclosure, drill downs and drill throughs.

Data Details:

Data Source:

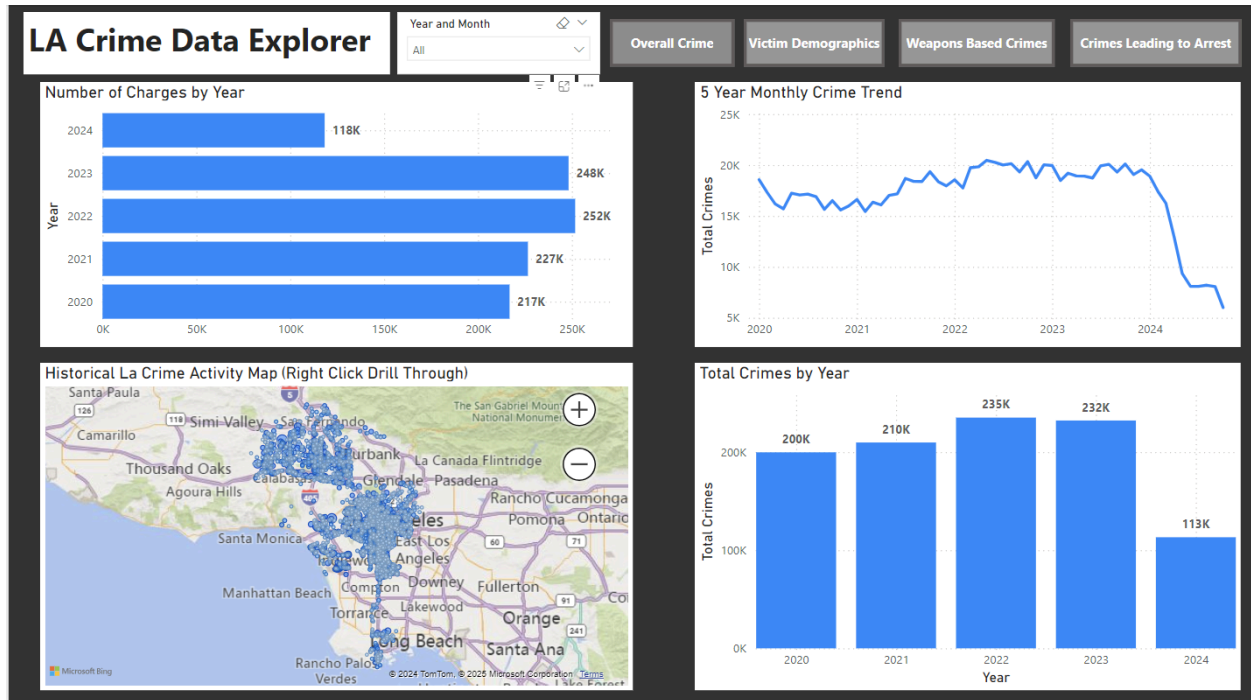
<https://catalog.data.gov/dataset/crime-data-from-2020-to-present> (Where the SQL PRJ's get their source data to generate the tables used for the Power BI Projects.)

Data Dictionary:

https://data.lacity.org/Public-Safety/Crime-Data-from-2020-to-Present/2nrs-mtv8/about_data

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Overall Crime View



Charts

Number of Charges Chart

Chart Type: Clustered Bar

Y-Axis: Number of Charges Per Crime from the Crime Codes Table

X-Axis: month_year hierarchy excluding the quarter from the hierarchy. Month_year is found in the date_table.

Purpose: This is meant to display the total charges (not crimes) by year to show the change year to year.

Historical LA Crime Map

Chart Type: Map

Latitude: Latitude field from the la_crimes table.

Longitude: Longitude field from the la_crimes table.

Legend: divisional_records_num from the crime_codes table.

Purpose: The Historical Crime map will show all crime hot spots by latitude and longitude. The size and color of the bubble will intensify the higher the number of crimes logged.

5 Year Monthly Crime Trend

Chart Type: Line Chart

Y-Axis: crime_tally field in the crime_codes table

X-Axis: month_year from date_table

Purpose: The 5 Year Monthly Crime Trend chart is meant to show the monthly fluctuation in total crimes per month by way of a line chart.

Total Crimes by Year

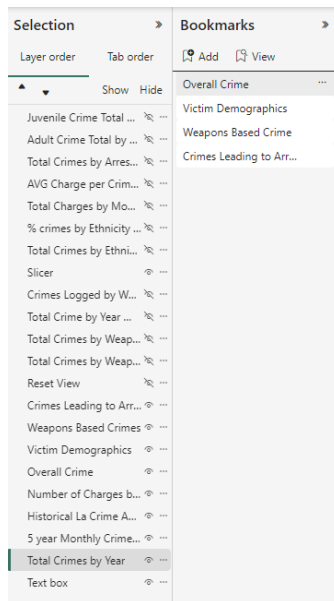
Chart Type: Clustered Column

Y-Axis: month_year field from the date_table table

X-Axis: crime_tally field from the crime_codes table

Purpose: The Total Crime by Year chart is meant to show the yearly crime totals and changes between the years of these totals.

Bookmark



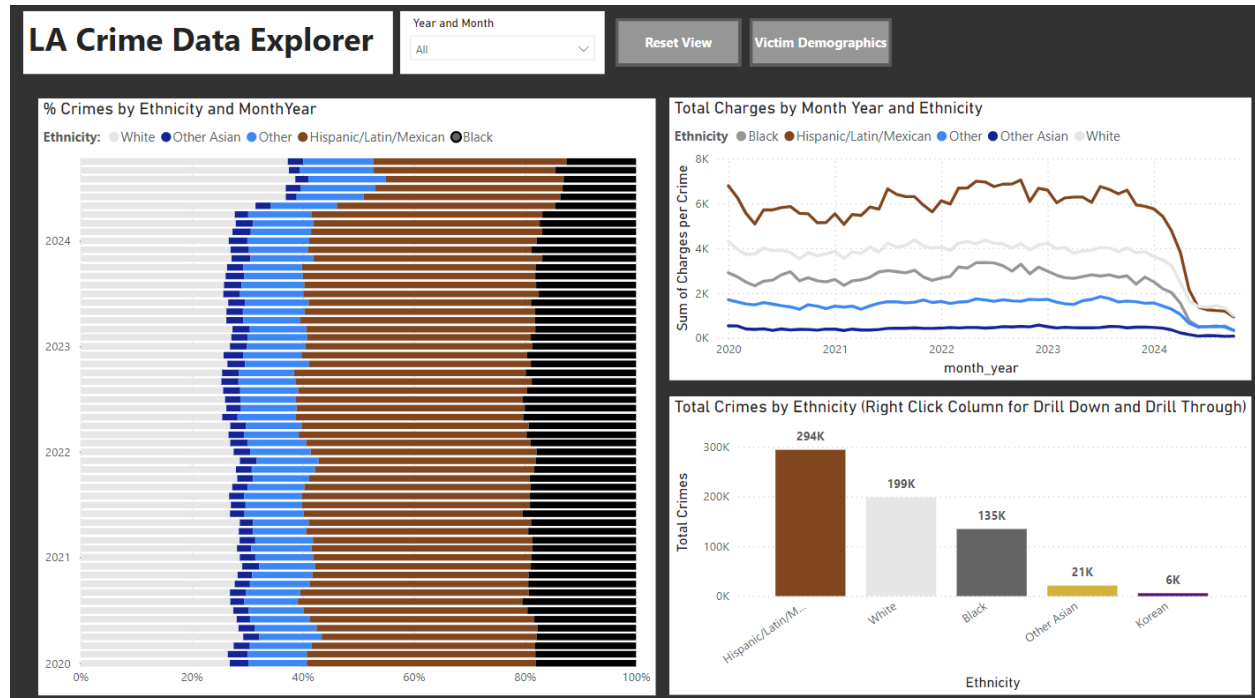
- The above image depicts all of the charts actually present on the first page. The charts with the eye icon not crossed through are not hidden. They have been assigned to the Overall Crime bookmark.

Overall Crime Button and Reset Button

The image shows a vertical configuration panel titled "Format button" with a right-pointing arrow. At the top is a search bar with a magnifying glass icon and the text "Search". Below this are two tabs: "Button" (which is underlined) and "General", followed by a three-dot menu icon. There are four expandable sections: "> Shape", "> Rotation", "> Style", and "> Action". The "> Action" section is expanded, showing a green toggle switch labeled "On" with a white dot. Inside this section, there is a sub-section titled "> Action" with a dropdown menu for "Type" set to "Bookmark". Below that is a "Bookmark" dropdown menu set to "Overall Crime". Then there is a "Destination" dropdown menu set to "None". Below that is a "Web URL" section with a text input field and a small "fx" icon. At the bottom of the main section is a "> Tooltip" section with a green toggle switch labeled "On" with a white dot. At the very bottom of the panel is a link that says "Reset to default" with a circular arrow icon.

- Both the Overall Crimes and the Reset button share the same bookmark attributed in the action section of formatting. The Overall Crimes button and Reset button both have the Overall Crimes bookmark assigned to their action.

Victim Demographics



Charts

% Crimes by Ethnicity and MonthYear

Chart Type: 100% Stacked Bar Chart

Y-Axis: month_year from the date_table

X-Axis: Crime Total by Ethnicity a DAX measure that is described in a further section.

Legend: Ethnicity from the crime_victim_descents table.

Purpose: The Purpose of this chart is to display the % of crime relative to the whole for a given month as relating to a specific Ethnicity. By gliding the mouse over the bars it will show the month to month changes in the % value of a given demographic.

Total Charges by Month Year and Ethnicity

Chart Type: Line Chart

Y-Axis: month_year from the date_table.

X-Axis: Charges per Crime from the crime_codes table.

Legend: Ethnicity from the crime_victim_descents table.

Purpose: The Purpose of this chart is to display the changes in the total charges month to month by Ethnicity showing commonalities and differences in month to month trends and yearly trends.

Total Crime by Ethnicity

Chart Type: Clustered Column Chart

Y-Axis: crime_tally from the crime_codes table

X-Axis: Ethnicity from the crime_victim_descents table.

Purpose: The purpose of this is to display total crimes by Ethnicity and show the differences between the different demographics.

Bookmark

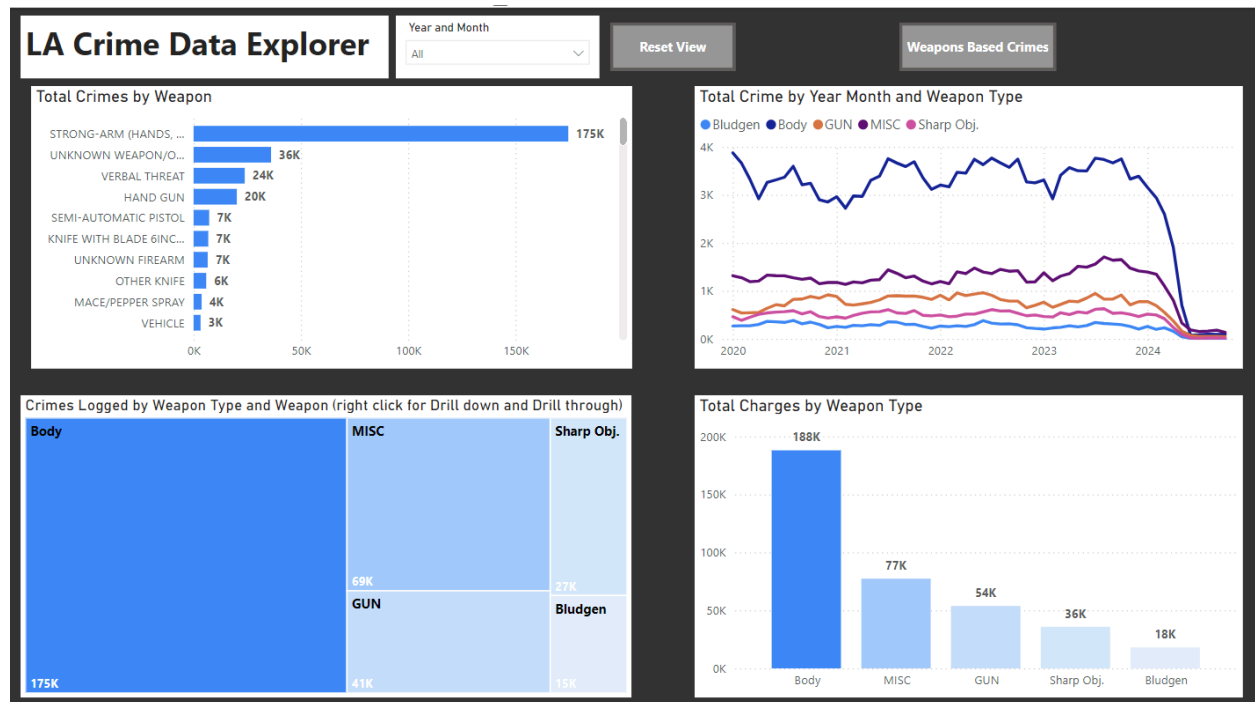
Selection		Bookmarks	
Layer order	Tab order	Add	View
	Show Hide	Overall Crime	
Juvenile Crime Total	Victim Demographics ...	
Adult Crime Total by	Weapons Based Crime	
Total Crimes by Arres...	...	Crimes Leading to Arr...	
AVG Charge per Crim...	...		
Total Charges by Mo...	...		
% crimes by Ethnicity		
Total Crimes by Ethni...	...		
Slicer	...		
Crimes Logged by W...	...		
Total Crime by Year		
Total Crimes by Weap...	...		
Total Crimes by Weap...	...		
Reset View	...		
Crimes Leading to Arr...	...		
Weapons Based Crimes	...		
Victim Demographics	...		
Overall Crime	...		
Number of Charges b...	...		
Historical La Crime A...	...		
5 year Monthly Crime...	...		
Total Crimes by Year	...		
Text box	...		

- The above shows the bookmark details for the Victim Demographics button. The previous description of bookmarks and selection apply to this and proceeding contexts relating to bookmarks.

Button

- The Victim Demographics bookmark is applied to Victim Demographics Button.

Weapons Based Crimes



Charts

Total Crimes by Weapon

Chart Type: Clustered Bar chart

X-axis: Total Crimes with Weapons a DAX measure.

Y-axis: weapon_description from crime_weapons table.

Purpose: The Total Crimes by Weapon chart is meant to show the number of crimes committed by each weapon type for a given time frame.

Crimes Logged by Weapon Type and Weapon

Chart Type: Treemap

Categories: Weapon type, weapon_description from the crime_weapons table.

Value: Total Crimes with Weapons a DAX measure.

Purpose: The purpose of this chart is to explore the total crimes to dig into the total crimes by weapon type and the weapons that fall under them via a drilldown.

Total Crimes by Year Month and Weapon Type

Chart Type: Line Chart

X-axis: month_year field from date_table table.

Y-axis: Total crimes with weapons a DAX measure.

Legend: weapon_type from crime_weapons table.

Purpose: The purpose of this table is to show the month year crime trends by weapon_type.

Total Charges by Weapon Type

Chart Type: Clustered Column

X-Axis: weapon_type from crime_weapons

Y-Axis: Total Crimes with Weapon

Purpose: The Purpose of this chart is to give the comparison between just Weapon types total Charge count.

Bookmark

The screenshot displays the Tableau interface with two panes: Selection and Bookmarks.

Selection Pane:

- Layer order
- Tab order
- Show Hide
- Juvenile Crime Total ...
- Adult Crime Total by ...
- Total Crimes by Arres...
- AVG Charge per Crim...
- Total Charges by Mo...
- % crimes by Ethnicity ...
- Total Crimes by Ethni...
- Slicer
- Crimes Logged by W...
- Total Crime by Year ...
- Total Crimes by Weap...**
- Total Crimes by Weap...
- Reset View
- Crimes Leading to Arr...
- Weapons Based Crimes
- Victim Demographics
- Overall Crime
- Number of Charges b...
- Historical La Crime A...
- 5 year Monthly Crime...
- Total Crimes by Year
- Text box

Bookmarks Pane:

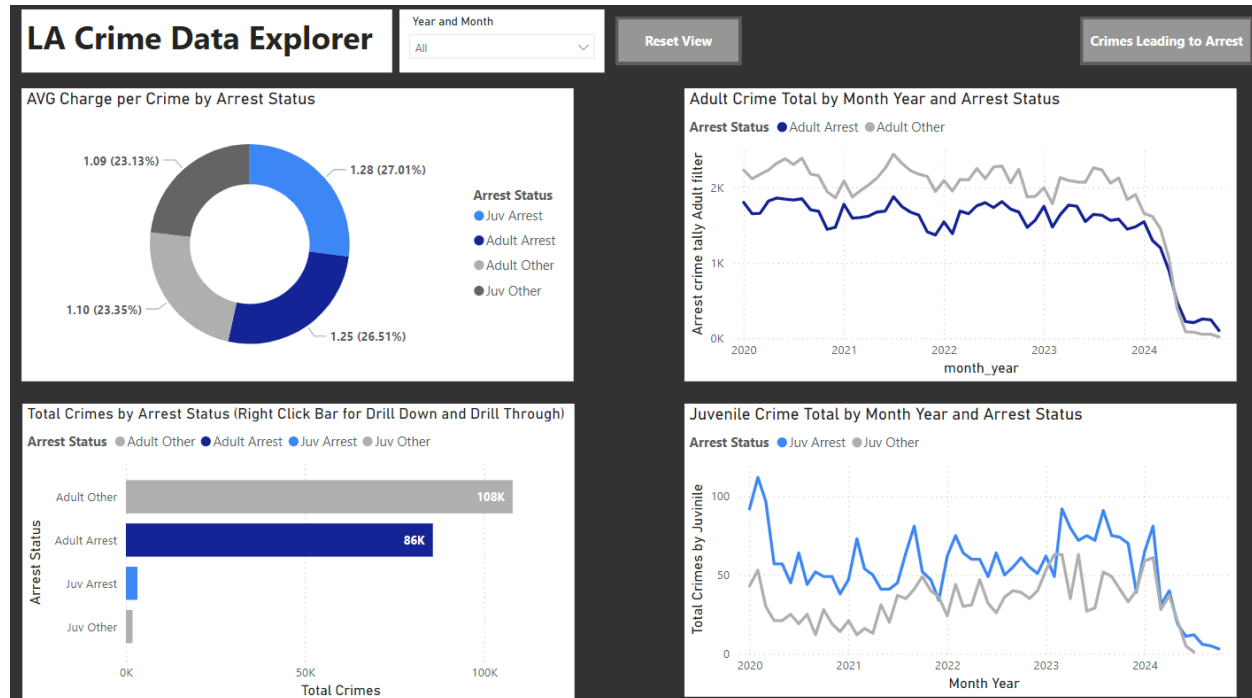
- Add View
- Overall Crime
- Victim Demographics
- Weapons Based Crime**
- Crimes Leading to Arr...

- The above shows the bookmark details for the Weapons Base Crimes button.

Button

- The Weapons Base Crimes bookmark is applied to the Weapons Base Crimes button.

Crimes Leading to Arrest



Charts

AVG Charge per Crime by Arrest Status

Chart Type: Donut

Values: Arrest Charges Filter a DAX Measure

Legend: status_description (Arrest Status) from the ref_case_detail table.

Purpose: The purpose of this chart is to display the average number of charges per crime for a given arrest status.

Total Crimes by Arrest Status

Chart Type: Clustered Bar

X-Axis: Arrest Crime Tally Filter a DAX measure

Y-Axis : status_description from the ref_case_detail table.

Legend: status_description from the ref_case_detail table.

Purpose: This chart was meant to show the total crime by arrest status to display the differences in the number of crimes that led to arrests and did not lead to arrests.

Adult CrimeToal by Month Year and Arrest Status

Chart Type: Line Chart

X-Axis: month_year from the date_table table

Y-Axis: Arrest crime tally Adult a DAX measure

Legend: status_description from the ref_case_detail table.

Purpose: The purpose of this chart was to focus on the difference in the adult population crime totals for those that led to arrests and those that did not across month and year trends.

Juvenile Crime Total by Month Year and Arrest Status

Chart Type: Line Chart

X-Axis: month_year from the date_table table

Y-Axis: Arrest crime tally Juv filter a DAX measure

Legend: status_description from the ref_case_detail table.

Purpose: The purpose of this chart was to focus on the difference in the Juvenile population crime totals for those that led to arrests and those that did not across month and year trends.

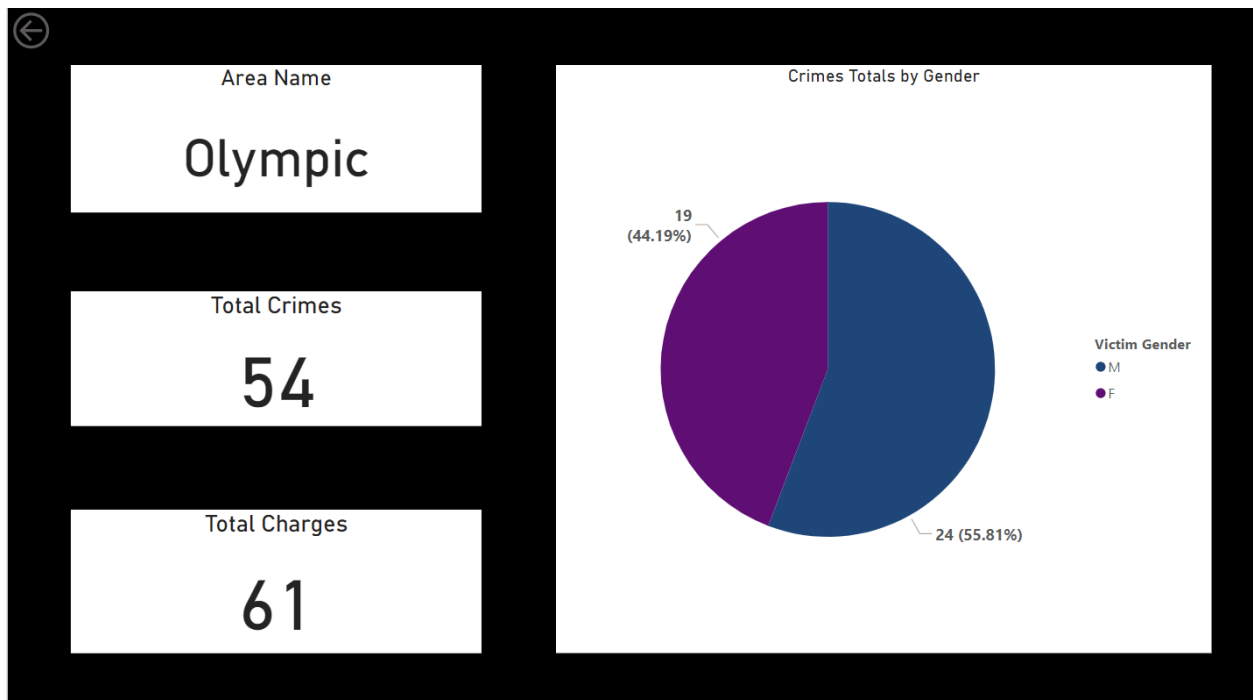
Bookmark

Selection		Bookmarks	
Layer order	Tab order	Add	View
Show Hide			
Juvenile Crime Total	Overall Crime	
Adult Crime Total by	Victim Demographics	
Total Crimes by Arres...	...	Weapons Based Crime	
AVG Charge per Crim...	...	Crimes Leading to Arr...	
Total Charges by Mo...	...		
% crimes by Ethnicity		
Total Crimes by Ethni...	...		
Slicer	...		
Crimes Logged by W...	...		
Total Crime by Year		
Total Crimes by Weap...	...		
Total Crimes by Weap...	...		
Reset View	...		
Crimes Leading to Arr...	...		
Weapons Based Crimes	...		
Victim Demographics	...		
Overall Crime	...		
Number of Charges b...	...		
Historical La Crime A...	...		
5 year Monthly Crime...	...		
Total Crimes by Year	...		
Text box	...		

- The above is the selection settings and bookmark name for the Crimes Leading to Arrest button. The Crimes Leading to Arrest button will be assigned this bookmark via the action section of formatting.

Drill Through Pages

Overall Crime Drill Through



Overall Crime Drill Through settings

Drill through settings:

- Cross-report: ☐ Off
- Keep all filters: ☐ Off
- latitude: [Dropdown] [X] [Lock]
- longitude: [Dropdown] [X] [Lock]

- In the drill through section of the page the latitude and longitude fields found in the la_crime table are used to be the field that determines a particular crime coordinate's metrics.

Overall Crime Drill Through Charts

Area Name Card

Field: area_name from la_crimes table.

Purpose: The purpose of this card is to narrow in on the area that relates to the space on the map that is drilled into.

Total Crimes Card

Field: Sum of crime_tally from crime_codes table.

Purpose: This card is meant to display for the total crimes that happen in a given latitude and longitude.

Total Charges Card

Field: Charges per Crime from crime_codes table.

Purpose: This card gives the total charges for a given longitude and latitude.

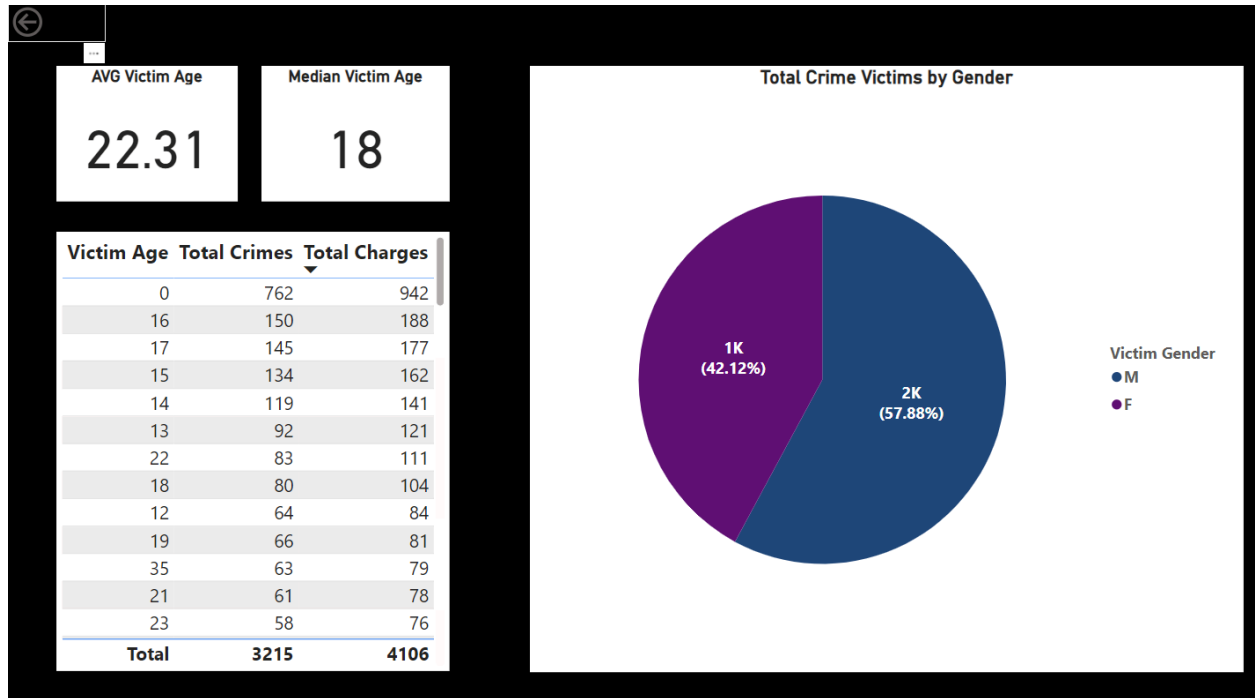
Crime Total by Gender

Legend: victim_sex field from la_crimes table

Values: crime_tally field from crime_codes table

Purpose: This chart shows the percent and total of crime by gender for a given latitude and longitude.

Weapons, Ethnicity, and Arrest Status Drill Through



Weapons, Ethnicity, and Arrest Status Drill Through Settings:

Drill through

Cross-report ☐ Off

Keep all filters ☐ Off

Ethnicity

is Hispanic/Latin/...

status_description

is (All)

weapon_type

is (All)

- In the drill through section of the page the Ethnicity from crime_victim_descent, status_description (arrest status) from ref_case_details and weapon_type fields from crime_weapons are used to be the fields that determine a particular Ethnicity, Arrest Status or Weapon Types metrics.

Weapons, Ethnicity, and Arrest Status Drill Through Charts:

AVG Victim Age

Field: victim_age from la_crimes

Purpose: To show the average age of the drill through value.

Median Victim Age

Field: victim_age from la_crimes

Purpose: To show the median victim age of a drill through value.

Victim Table Details

Columns: victim_age from la_crimes, Charges per Crime and crime_tally from crime_codes.

Purpose: To show the total charges and crime by each age for a given drill through value.

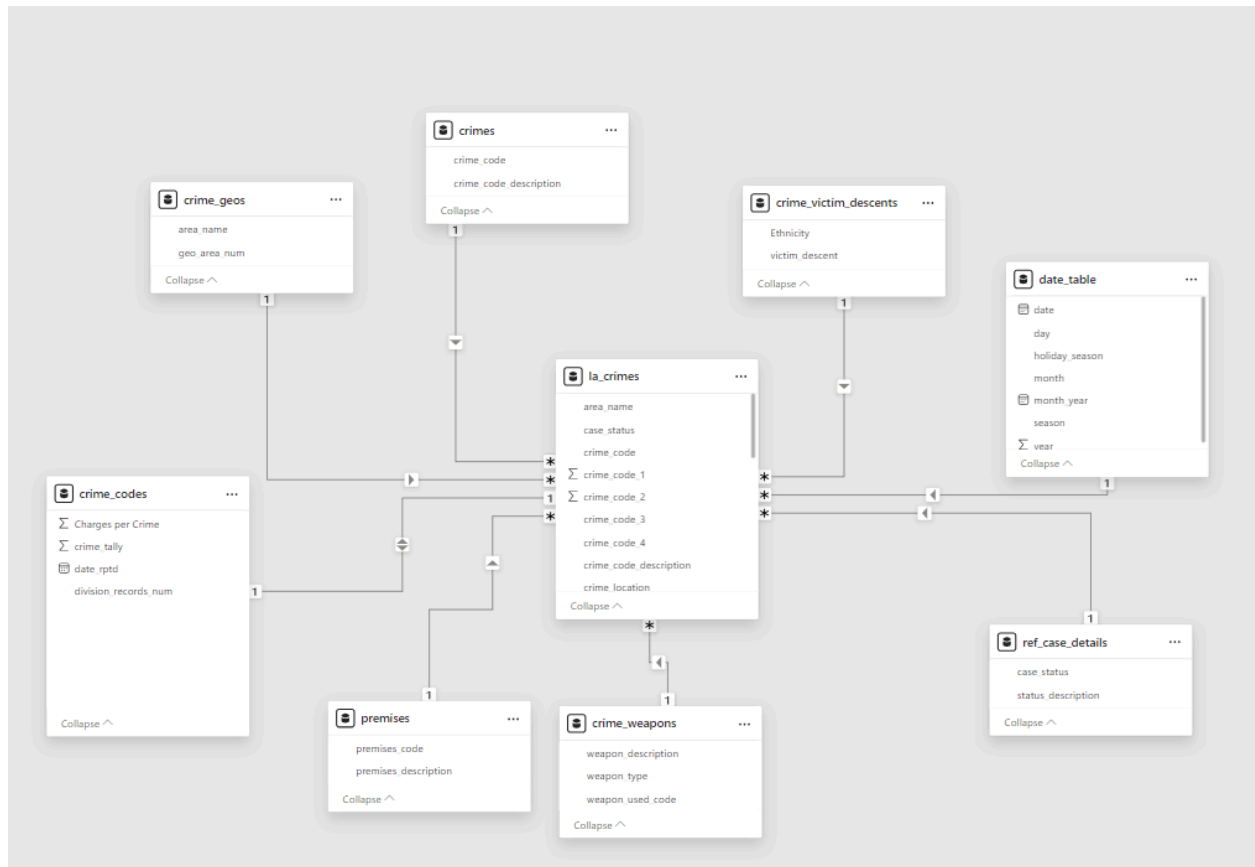
Victim Gender Pie Chart

Legend: victim_sex from la_crimes

Values: crime_tally from crime_codes

Purpose: To show the gender percentage and totals of the victims for a given drill through value.

Data Model



Tables layout

- All tables reference la_crimes. Below is the list of tables and the field used to connect to la_crimes.

crimes

- crime_code

crime_geos

- geo_area_num

crime_codes

- division_records_num

crime_victim_descents

- victim_descent

date_table

- date to date_occ on la_crimes

ref_case_details

- case_status

crime_weapons

- weapon_used_code

premises

- premises_code

DAX Measures

- The following section is not meant to teach how the DAX works but what functions it serves.

Arrest Charges Filter:

Arrest Charges filter =

```
CALCULATE(  
    AVERAGE(crime_codes[Charges per Crime]),  
    FILTER(  
        ref_case_details,  
        ref_case_details[status_description] <> "UNK"  
        && ref_case_details[status_description] <> "Invest Cont"  
    )  
)
```

- The Arrest Charges Filter includes only the data that shows specific description of either an arrest being made or no arrest being made and sums them into total charges.

Arrest Crime Tally Adult Filter:

Arrest crime tally Adult filter =

```
CALCULATE(  
    SUM(crime_codes[crime_tally]),  
    FILTER(  
        ref_case_details,  
        ref_case_details[status_description] IN {"Adult Arrest", "Adult  
Other"}  
    )  
)
```


- The Arrest Charges Filter includes only the data that shows specific description of either an arrest being made or no arrest being made relating to adults and sums them into total crimes..

Arrest crime tally Juv Filter:

Arrest crime tally Juv filter =

```
CALCULATE(
    SUM(crime_codes[crime_tally]),
    FILTER(
        ref_case_details,
        ref_case_details[status_description] IN {"Juv Arrest", "Juv Other"}
    )
)
```

- The Arrest Charges Filter includes only the data that shows specific description of either an arrest being made or no arrest being made relating to juveniles and sums them into total crimes.

Arrest Crime Tally filter:

Arrest crime tally filter =

```
CALCULATE(
    SUM(crime_codes[crime_tally]),
    FILTER(
        ref_case_details,
        ref_case_details[status_description] <> "UNK"
        && ref_case_details[status_description] <> "Invest Cont"
    )
)
```

- The Arrest Charges Filter includes only the data that shows specific description of either an arrest being made or no arrest being made and sums them into total crimes.

Crime Total by Ethnicity

Crime total by Ethnicity =

```
CALCULATE(  
    SUM(crime_codes[crime_tally]),  
    FILTER(  
        crime_victim_descents,  
        crime_victim_descents[Ethnicity] <> "Unknown"  
    )  
)
```

- The Crime total by Ethnicity generated the total of crimes from only data that includes an ethnicity value.

Ethnicity Charges

Ethnicity Charges =

```
CALCULATE(  
    SUM(crime_codes[Charges per Crime]),  
    FILTER(  
        crime_victim_descents,  
        crime_victim_descents[Ethnicity] <> "Unknown"  
    )  
)
```

- The Ethnicity Charges calculates a total of charges from only data that includes an ethnicity value.

Total Charges with Weapon

Total Charges with Weapon =

```
CALCULATE(  
    SUM(crime_codes[Charges per Crime]),  
    FILTER(  
        crime_weapons,  
        crime_weapons[weapon_type] <> "unkown"  
    )  
)
```

)

- The total of charges with weapons is calculated from only data that includes a weapon type value.

Total Crimes with Weapon

Total Crimes with Weapon =

```
CALCULATE(  
    SUM(crime_codes[crime_tally]),  
    FILTER(  
        crime_weapons,  
        crime_weapons[weapon_type] <> "unknown"  
    )  
)
```

)

- The total of crimes with weapons is calculated from only data that includes a weapon type value.