

Xiaoting(Theresa) Liu  
Chicago Crime Data

Q1: What are the top 3 seen types of crimes (Crimes that are mostly common)?

The top 3 seen types of crimes is Theft, Battery and Criminal Damage.

```
1 SELECT `primary type` as Common_Crimes, count(*) as Total_Crimes
2 FROM crimes_2001_to_present
3 GROUP BY `primary type`
4 ORDER BY Total_Crimes
5 DESC LIMIT 3;
```

```
INFO : Map 1: 25/25 Reducer 2: 7/7 Reducer 3: 1/1
INFO : Map 1: 25/25 Reducer 2: 7/7 Reducer 3: 1/1
INFO : Completed executing command(queryId=hive_20190813155302_53652941-cc03-445e-a956-dd9dbfb3828
a); Time taken: 44.322 seconds
INFO : OK
```

Query History

Saved Queries

Query Builder

Results (3)

	common_crimes	total_crimes
1	THEFT	1450019
2	BATTERY	1257663
3	CRIMINAL DAMAGE	785088

Q2: What are the least seen types of crimes (Crimes that are the least common)?

The least seen types of crimes are Domestic Violence, Non-Criminal and Ritualism.

```
1 SELECT `primary type` as Common_Crimes, count(*) as Total_Crimes
2 FROM crimes_2001_to_present
3 GROUP BY `primary type`
4 ORDER BY Total_Crimes
5 ASC LIMIT 3;
```

```
INFO : Map 1: 25/25 Reducer 2: 7/7 Reducer 3: 1/1
INFO : Map 1: 25/25 Reducer 2: 7/7 Reducer 3: 1/1
INFO : Completed executing command(queryId=hive_20190813155718_e6db74c2-c189-4347-ac9e-98932ed5409
b); Time taken: 36.998 seconds
INFO : OK
```

Query History

Saved Queries

Query Builder

Results (3)

	common_crimes	total_crimes
1	DOMESTIC VIOLENCE	1
2	NON-CRIMINAL (SUBJECT SPECIFIED)	9
3	RITUALISM	23

Q3. What are the top 3 safest and riskiest neighborhoods?

### Safest

```
1 SELECT block as Neighborhood, count(*) as Total_Crimes
2 FROM crimes_2001_to_present
3 WHERE `location description` = 'RESIDENCE'
4 GROUP BY block
5 ORDER BY Total_Crimes
6 ASC LIMIT 3;
```

```
INFO : Session is already open
INFO : Dag name: SELECT block as Neighborhood, count(*) a...3(Stage-1)
INFO : Status: Running (Executing on YARN cluster with App id application_1557354199340_1695)

INFO : Map 1: 0/23   Reducer 2: 0/4   Reducer 3: 0/1
```

	neighborhood	total_crimes
1	0000X E 117 ST	1
2	173XX LORENZ	1
3	0000X E 35 ST	1

### Riskiest

```
1 SELECT block as Neighborhood, count(*) as Total_Crimes
2 FROM crimes_2001_to_present
3 WHERE `location description` = 'RESIDENCE'
4 GROUP BY block
5 ORDER BY Total_Crimes
6 DESC LIMIT 3;
```

```
WHERE `location description` = 'RESIDENCE'
GROUP BY block
ORDER BY Total_Crimes
DESC LIMIT 3
```

	neighborhood	total_crimes
1	035XX S RHODES AVE	509
2	078XX S SOUTH SHORE DR	478
3	014XX N SEDGWICK ST	451

Location description has to be set as “residence” since we only concern about neighborhood.

Q4. Which were the safest 3 years, and riskier 3 years?

### Safest 3 years

```
1 SELECT year as `Safest Year`, count(*) as Total_Crimes
2 FROM crimes_2001_to_present
3 GROUP BY year
4 ORDER BY Total_Crimes
5 ASC LIMIT 3;
```

```
INFO : Map 1: 25/25 Reducer 2: 7/7 Reducer 3: 1/1
INFO : Map 1: 25/25 Reducer 2: 7/7 Reducer 3: 1/1
INFO : Completed executing command(queryId=hive_20190813163851_8807e6d3-e926-4dd6-9d79-41d9cf63ed7
0); Time taken: 36.962 seconds
INFO : OK
```

Query History Saved Queries Query Builder Results (3)

	safest year	total_crimes
	1 2019	98989
	2 2015	264143
	3 2018	266849

### Riskier 3 years

```
1 SELECT year as `Safest Year`, count(*) as Total_Crimes
2 FROM crimes_2001_to_present
3 GROUP BY year
4 ORDER BY Total_Crimes
5 DESC LIMIT 3;
```

```
INFO : Map 1: 25/25 Reducer 2: 7/7 Reducer 3: 1/1
INFO : Map 1: 25/25 Reducer 2: 7/7 Reducer 3: 1/1
INFO : Completed executing command(queryId=hive_20190813164103_51111f87-3f2e-48ac-98e3-403ff75ce5c
5); Time taken: 36.068 seconds
INFO : OK
```

Query History Saved Queries Query Builder Results (3)

	safest year	total_crimes
	1 2002	486757
	2 2001	485754
	3 2003	475946

Q5: Which where the safest and riskier consecutive 3 years? (ex: 1996-1997- 1998)

## Safest Consecutive 3 years

1 SELECT

2 Crime\_Year,

3 Total\_Crimes,

4 sum(Total\_Crimes) OVER(

5 | ORDER BY Crime\_Year ROWS BETWEEN CURRENT ROW AND 2 FOLLOWING

6 ) AS Crimes

7 FROM (

8 SELECT year as Crime\_Year, count(\*) as Total\_Crimes

9 FROM crimes\_2001\_to\_present

10 GROUP BY year

11 ORDER BY year

12 ) as Year

13 ORDER BY Crimes

14 ASC LIMIT 3;

15

16

17

INFO : Session is already open

INFO : Dag name: SELECT

Crime\_Year,

Total\_Crime...3(Stage-1)

INFO : Tez session was closed. Reopening...

Query History

Saved Queries

Query Builder

Results (3)

	crime_year	total_crimes	crimes
1	2019	98989	98989
2	2018	266849	365838
3	2017	268215	634053

## Riskier Consecutive 3 years

1 SELECT

2 Crime\_Year,

3 Total\_Crimes,

4 sum(Total\_Crimes) OVER(

5 | ORDER BY Crime\_Year ROWS BETWEEN CURRENT ROW AND 2 FOLLOWING

6 ) AS Crimes

7 FROM (

8 SELECT year as Crime\_Year, count(\*) as Total\_Crimes

9 FROM crimes\_2001\_to\_present

10 GROUP BY year

11 ORDER BY year

12 ) as Year

13 ORDER BY Crimes

14 DESC LIMIT 3;

15

Crime\_Year,

Total\_Crime...3(Stage-1)

INFO : Status: Running (Executing on YARN cluster with App id application\_1557354199340\_1612)

INFO : Map 1: 0/23 Reducer 2: 0/7 Reducer 3: 0/4 Reducer 4: 0/1

Query History

Saved Queries

Query Builder

Results (3)

	crime_year	total_crimes	crimes
1	2001	485754	1448457
2	2002	486757	1432087
3	2003	475946	1399047

Bonus Question: for all the above data points, how has it been evolving over time?

According Nancy, to stay the course with crime reduction, CPD is gearing up with policing changes, including a shift in the command staff and a new safety strategy for the upcoming summer months which will target high priority areas with additional patrols.

Chicago Police Department also indicated that Chicago saw an 8-percent decline in criminal complaints in 2018, compared to 2017. This reduction is part of an ongoing trend, as crime is down 10 percent citywide since 2016. Chicago saw nearly 100 fewer murders in 2018, compared to 2017

#### Reference

Gallup. (October 31, 2018). Is there more crime in the U.S. than there was a year ago, or less? [Graph]. In Statista. Retrieved August 13, 2019, from <https://www.statista.com/statistics/205525/public-perception-of-trend-in-crime-problem-in-the-usa/>

Nancy Loo (MAY 1, 2019). Chicago April crime numbers show steady decline in murders, shootings. Retrieved August 13, 2019, from <https://wgntv.com/2019/05/01/chicago-april-crime-numbers-show-steady-decline-in-murders-shootings/>