

Assignment

Group 7

By : Razan Al mousa

Rana Abdullah

Yasir Alhejaili

Hypothesis

— Does Chicago safe ?



Dataset “BigQuery”

Chicago Crime

< **crime** (6.99m rows)

Detail Compact Column

# unique_key	date	✓ arrest	# year
Unique identifier for the record.	Date when the incident occurred. this is sometimes a best estimate.	Indicates whether an arrest was made.	Year the incident occurred.
7922533	10/01/2008 08:00:00	False	2008
10586590	11/01/2008 08:14:00	False	2008
7845861	01/01/2004 01:00:00	False	2004
10460850	12/31/2015 09:00:00	False	2015
11631411	12/20/2018 09:00:00	False	2018
11712471	06/05/2019 20:03:00	True	2019
11692229	05/19/2019 03:00:00	False	2019
11791520	08/11/2019 12:15:00	False	2019
11790091	08/11/2019 00:02:00	True	2019
11752819	07/10/2019 12:23:00	True	2019
11757985	07/14/2019 22:54:00	True	2019
11763341	07/19/2019 10:43:00	False	2019
11769262	07/16/2019 14:00:00	False	2019
11769660	07/15/2019 09:00:00	False	2019
11774672	07/29/2019 02:15:00	False	2019
11822054	09/09/2019 08:05:00	True	2019
11828868	09/15/2019 02:42:00	False	2019

Implementation

```
first_query = """
    SELECT EXTRACT(YEAR FROM date) AS year,
           COUNT(1) AS num_crime
      FROM `bigquery-public-data.chicago_crime.crime`
     GROUP BY year
    ORDER BY year
"""

# Set up the query (cancel the query if it would use too much of
# your quota)
safe_config = bigquery.QueryJobConfig(maximum_bytes_billed=10**10)
first_query_job = client.query(first_query, job_config=safe_config)

# API request - run the query, and return a pandas DataFrame
first_year_result = first_query_job.to_dataframe()

print(first_year_result)
```

	year	num_crime
0	2001	485782
1	2002	486764
2	2003	475961
3	2004	469396
4	2005	453732
5	2006	448137
6	2007	437040
7	2008	427097
8	2009	392764
9	2010	370395
10	2011	351875
11	2012	336129
12	2013	307283
13	2014	275527
14	2015	264432
15	2016	269414
16	2017	268646
17	2018	268190
18	2019	260022
19	2020	139391

Implementation Arrested

```
t_query = """
    SELECT year, sum(CASE WHEN arrest = True THEN 1 ELSE 0 END) as arrest_True
        FROM `bigquery-public-data.chicago_crime.crime`
    where year between 2000 and 2020
        GROUP BY year
        order by year
"""

safe_config = bigquery.QueryJobConfig(maximum_bytes_billed=10**10)
t_query_job = client.query(t_query, job_config=safe_config)

t_query_result = t_query_job.to_dataframe()

print(t_query_result)
```

	year	arrest_True
0	2001	141910
1	2002	141555
2	2003	141577
3	2004	144690
4	2005	140903
5	2006	135395
6	2007	131862
7	2008	109974
8	2009	110786
9	2010	100503
10	2011	96259
11	2012	90615
12	2013	86490
13	2014	79580
14	2015	69972
15	2016	52942
16	2017	52551
17	2018	53728
18	2019	55660
19	2020	22655

Implementation Unarrested

```
f_query = """
    SELECT year, sum(CASE WHEN arrest = False THEN 1 ELSE 0 END) as arrest_False
        FROM `bigquery-public-data.chicago_crime.crime`
    where year between 2000 and 2020
    GROUP BY year
    order by year

"""
safe_config = bigquery.QueryJobConfig(maximum_bytes_billed=10**10)
f_query_job = client.query(f_query, job_config=safe_config)

f_query_result = f_query_job.to_dataframe()

print(f_query_result)
```

	year	arrest_False
0	2001	343872
1	2002	345209
2	2003	334384
3	2004	324706
4	2005	312829
5	2006	312742
6	2007	305178
7	2008	317123
8	2009	281978
9	2010	269892
10	2011	255616
11	2012	245514
12	2013	220793
13	2014	195947
14	2015	194460
15	2016	216472
16	2017	216095
17	2018	214462
18	2019	204362
19	2020	116736

Prediction

Does Chicago police will arrest criminals ?

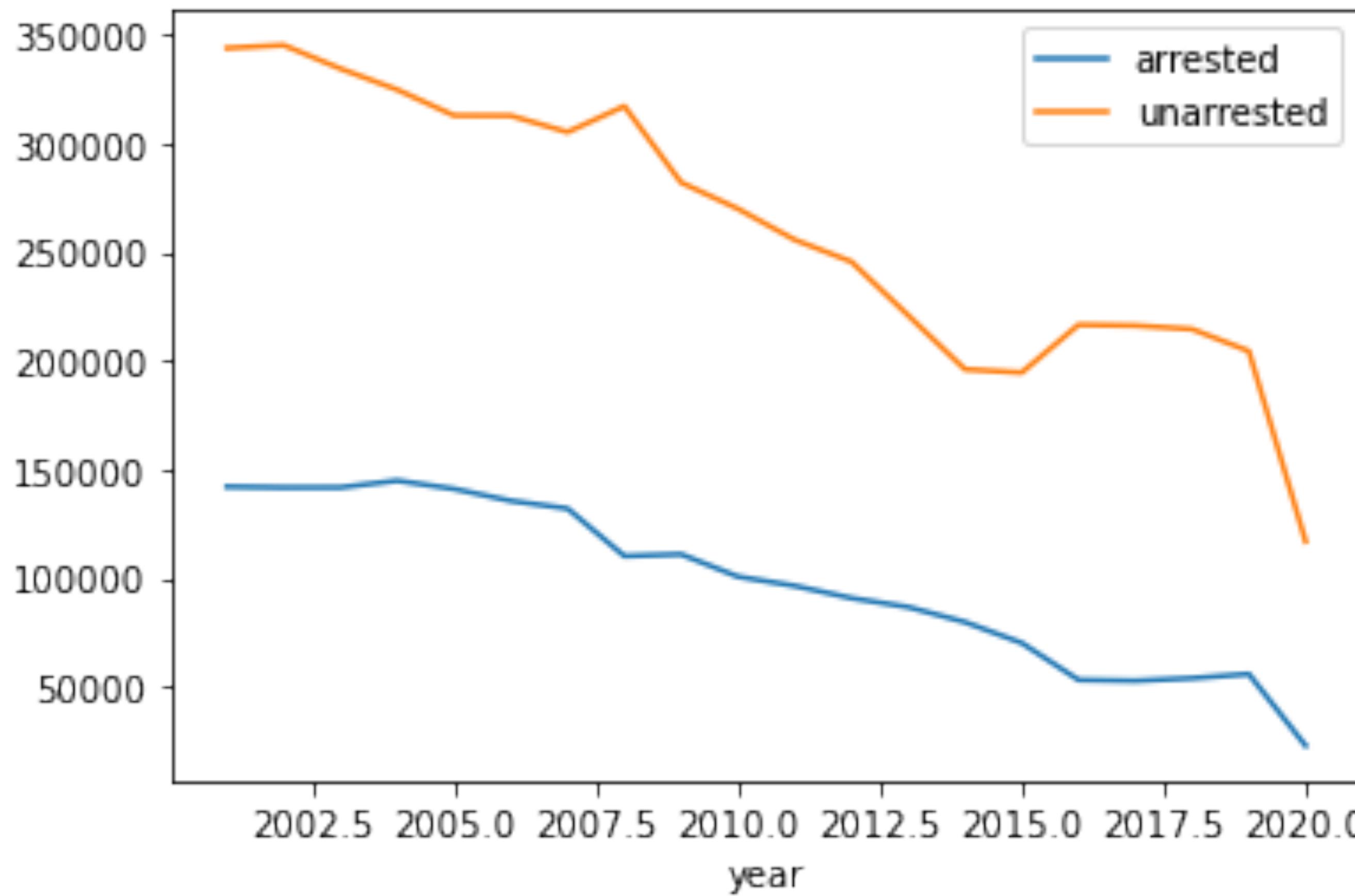


Fig : Difference between arrested and unarrested

Development

— Suggestion

Increasing security level in Chicago

Police should make more effort about catch criminals

A wide-angle photograph of a beach at sunset. The sky is filled with soft, scattered clouds, transitioning from a warm orange and yellow near the horizon to a cooler blue and grey higher up. The ocean waves are small and gentle, breaking near the shore. The sand in the foreground is a light tan color, showing some texture and small footprints. The overall atmosphere is peaceful and serene.

Thank You