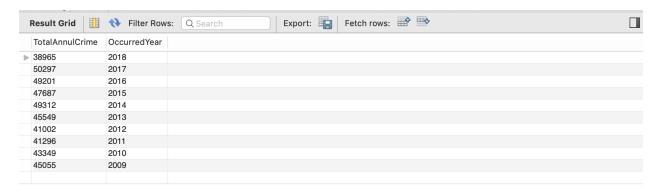
USE crimebuster;

1. How many total crimes were reported each year happened for the past decade?

SELECT COUNT(*) AS TotalAnnulCrime, Year(crimerecords.OccurredTimeStamp) AS OccurredYear FROM crimerecords
GROUP BY OccurredYear
ORDER BY OccurredYear DESC
LIMIT 10;



2. What is the most reported crime subcategory in each year for the past decade?

 ${\tt SELECT\ CrimeSubCategoryName,\ MaxCrimeTypeCount,\ OccurredYear} \\ {\tt FROM\ (}$

 ${\tt SELECT~c1.CrimeSubCategoryId,~MaxCrimeTypeCount,~c1.OccurredYear} \\ {\tt FROM~(}$

SELECT crimerecords.CrimeSubCategoryId, COUNT(IF(CrimeSubCategoryId IS NULL, 1, 1)) AS

CrimeTypeCount, Year(OccurredTimeStamp) AS OccurredYear

FROM crimerecords

GROUP BY OccurredYear, CrimeSubCategoryId

HAVING OccurredYear >= 2008

ORDER BY CrimeTypeCount DESC

) AS c1

INNER JOIN (

 ${\tt SELECT\ MAX(tmp.CrimeTypeCount)\ AS\ MaxCrimeTypeCount,\ OccurredYear}$

FROM (

SELECT crimerecords.CrimeSubCategoryId, COUNT(IF(CrimeSubCategoryId IS NULL, 1,

1)) AS CrimeTypeCount, Year(OccurredTimeStamp) AS OccurredYear

FROM crimerecords

GROUP BY OccurredYear, CrimeSubCategoryId

HAVING OccurredYear >= 2008

ORDER BY CrimeTypeCount DESC) AS tmp

GROUP BY OccurredYear

ORDER BY OccurredYear DESC

LIMIT 10) AS c2

 $\label{eq:cont_solution} ON \ c1. CrimeTypeCount = c2. MaxCrimeTypeCount \ AND \ c1. OccurredYear = c2. OccurredYear) \ AS \ c \\ INNER \ JOIN \ CrimeSubCategory$

ON c.CrimeSubCategoryId = CrimeSubCategory.CrimeSubCategoryId;



3. What are the top ten reported crime subcategories since 2015-01-01?

SELECT CrimeSubCategoryName

FROM (

SELECT CrimeSubCategoryId, COUNT(crimerecords.RecordId) AS TotalAnnualCrime, Year(OccurredTimeStamp) AS OccurredYear

FROM crimerecords

GROUP BY CrimeSubCategoryId

HAVING OccurredYear >= '2015'

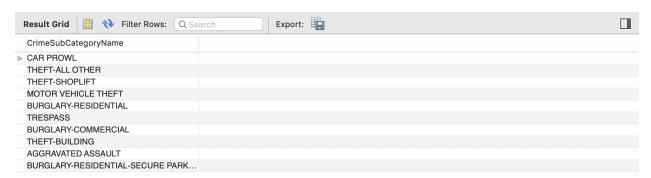
ORDER BY TotalAnnualCrime DESC

LIMIT 10

) AS c

LEFT JOIN crimesubcategory

ON c.crimeSubCategoryId = crimesubcategory.CrimeSubCategoryId;



4. What are the ten least-safe neighborhoods (with most reported crimes) for the year 2018 (since 2018-01-01)?

```
SELECT NeighborhoodName, TotalAnnualCrime
FROM
(

SELECT NeighborhoodId, COUNT(*) AS TotalAnnualCrime
FROM crimerecords
WHERE OccurredTimeStamp >= '2018-01-01'
GROUP BY NeighborhoodId
ORDER BY TotalAnnualCrime DESC
LIMIT 10
) as n
LEFT JOIN neighborhood
ON n.NeighborhoodId = neighborhood.NeighborhoodId;
```

2018-10-25



#5. For the five least-safe neighborhoods for the year 2018, what are the top 3 most reported crime subcategory for each of them?

SELECT NeighborhoodName, TotalAnnualCrime, CrimeSubCategoryName, CNT AS NumOfCrimeSubCategory FROM (

 ${\tt SELECT\ CrimeRecords.NeighborhoodId,\ NeighborhoodName,\ COUNT(*)\ AS\ TotalAnnualCrime}$

FROM CrimeRecords

INNER JOIN Neighborhood

ON CrimeRecords.NeighborhoodId = Neighborhood.NeighborhoodId

WHERE OccurredTimeStamp >= '2018-01-01'

GROUP BY NeighborhoodId

ORDER BY TotalAnnualCrime DESC

LIMIT 5) AS Top5Neighborhood

INNER JOIN (

CS5200

SELECT NeighborhoodId, CrimeSubCategoryName, COUNT(*) AS CNT

FROM CrimeRecords

INNER JOIN CrimeSubCategory

ON CrimeRecords.CrimeSubCategoryId = CrimeSubCategory.CrimeSubCategoryId

GROUP BY NeighborhoodId, CrimeRecords.CrimeSubCategoryId) AS CntPerNeighborPerCrime1

 $ON\ Top 5 Neighborhood. Neighborhood Id = CntPer NeighborPer Crime 1. Neighborhood Id$

WHERE 3 > (

 ${\tt SELECT\ COUNT} (CntPerNeighborPerCrime 2.CNT)$

FROM (

SELECT NeighborhoodId, CrimeSubCategoryName, COUNT(*) AS CNT

FROM CrimeRecords

INNER JOIN CrimeSubCategory

 ${\tt ON\ CrimeRecords.CrimeSubCategoryId = CrimeSubCategory.CrimeSubCategoryId}$

GROUP BY NeighborhoodId, CrimeRecords.CrimeSubCategoryId) AS

CntPerNeighborPerCrime2

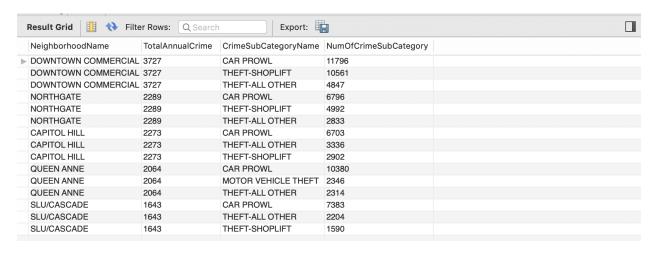
WHERE

CntPerNeighborPerCrime2.CNT > CntPerNeighborPerCrime1.CNT

AND CntPerNeighborPerCrime1.NeighborhoodId =

CntPerNeighborPerCrime 2. Neighborhood Id)

ORDER BY TotalAnnualCrime DESC, NeighborhoodName, NumOfCrimeSubCategory DESC;



#6. What are the ten safest neighborhoods (with least reported crimes) for the year 2018 (since 2018-01-01)?

SELECT

CS5200

NeighborhoodName, COUNT(*) AS Report_CNT

FROM

(SELECT crimerecords.NeighborhoodId, NeighborhoodName, RecordId, OccurredTimeStamp

FROM CrimeRecords

LEFT JOIN Neighborhood

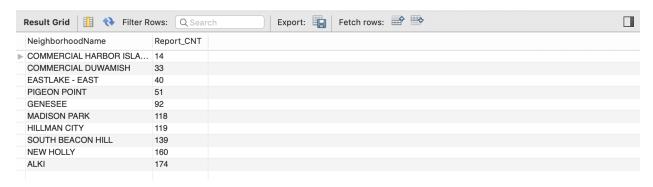
ON CrimeRecords.NeighborhoodId = Neighborhood.NeighborhoodId

WHERE OccurredTimeStamp >= '2018-01-01') AS T

GROUP BY NeighborhoodName

ORDER BY Report_CNT ASC

LIMIT 10;



#7. For the five safest neighborhoods for the year 2018, what are the top 3 most reported crime subcategory for each of them?

SELECT NeighborhoodId, Count(*)

FROM CrimeBuster.CrimeRecords

Group By NeighborhoodId

Order By Count(*) Asc

Limit 5;

(Select NeighborhoodId, CrimeSubCategoryId, Count(*) As NumOfRecords

From CrimeBuster.CrimeRecords

Where NeighborhoodId = 14

Group By CrimeSubCategoryId

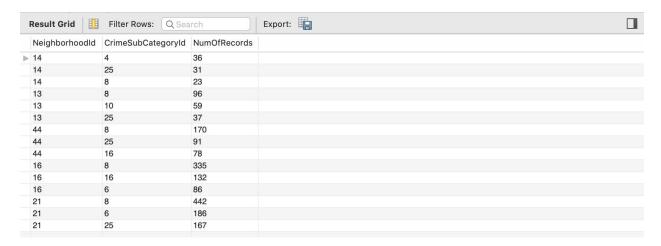
Order By Count(*) Desc

Limit 3)

Union all

```
(Select NeighborhoodId, CrimeSubCategoryId, Count(*) As NumOfRecords
        From CrimeBuster.CrimeRecords
        Where NeighborhoodId = 13
        Group By CrimeSubCategoryId
        Order By Count(*) Desc
        Limit 3)
Union all
(Select NeighborhoodId, CrimeSubCategoryId, Count(*) As NumOfRecords
        From CrimeBuster.CrimeRecords
        Where NeighborhoodId = 44
        Group By CrimeSubCategoryId
        Order By Count(*) Desc
        Limit 3)
Union all
(Select NeighborhoodId, CrimeSubCategoryId, Count(*) As NumOfRecords
        From CrimeBuster.CrimeRecords
        Where NeighborhoodId = 16
        Group By CrimeSubCategoryId
        Order By Count(*) Desc
        Limit 3)
Union all
        Select NeighborhoodId, CrimeSubCategoryId, Count(*) As NumOfRecords
        From CrimeBuster.CrimeRecords
        Where NeighborhoodId = 21
        Group By CrimeSubCategoryId
        Order By Count(*) Desc
        Limit 3);
```

PM3 - Select Statement



#8. Comparing year 2015 against 2017, what are the top 10 crime subcategories with the most declining number of reports?

 ${\tt SELECT\ YEAR_2017.CrimeSubCategoryName,\ (YEAR_2015.CNT\ -\ YEAR_2017.CNT)\ AS\ NumOfDecline\ FROM\ (NumOfDecline\ NumOfDecline\ NumOfDec$

SELECT CrimeRecords.CrimeSubCategoryId, CrimeSubCategoryName, COUNT(*) AS CNT FROM CrimeRecords

INNER JOIN CrimeSubCategory

ON CrimeRecords.CrimeSubCategoryId = CrimeSubCategory.CrimeSubCategoryId WHERE YEAR(OccurredTimeStamp) = 2015

GROUP BY CrimeRecords. CrimeSubCategoryId, CrimeSubCategoryName) AS YEAR $_2015$ INNER JOIN (

SELECT CrimeRecords.CrimeSubCategoryId, CrimeSubCategoryName, COUNT(*) AS CNT

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FROM CrimeRecords

INNER JOIN CrimeSubCategory

ON CrimeRecords.CrimeSubCategoryId = CrimeSubCategory.CrimeSubCategoryId

WHERE YEAR(OccurredTimeStamp) = 2017

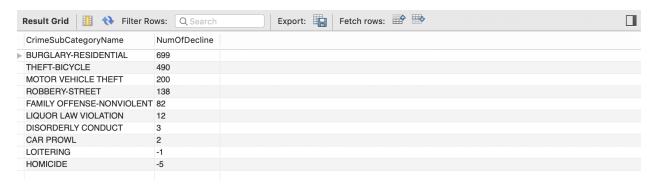
GROUP BY CrimeRecords.CrimeSubCategoryId, CrimeSubCategoryName) AS YEAR_2017

 ${\tt ON\ YEAR_2015.CrimeSubCategoryId = YEAR_2017.CrimeSubCategoryId}$

ORDER BY NumOfDecline DESC

LIMIT 10;

CS5200



#9. Comparing year 2015 against 2017, what are the top 10 crime subcategories with the most growing number of reports?

SELECT YEAR_2017.CrimeSubCategoryName, (YEAR_2017.CNT - YEAR_2015.CNT) AS NumOfGrowth FROM (

 ${\tt SELECT\ CrimeRecords.CrimeSubCategoryId,\ CrimeSubCategoryName,\ COUNT(*)\ AS\ CNTFROM\ CrimeRecords}$

INNER JOIN CrimeSubCategory

ON CrimeRecords.CrimeSubCategoryId = CrimeSubCategory.CrimeSubCategoryId WHERE YEAR(OccurredTimeStamp) = 2015

GROUP BY CrimeRecords. CrimeSubCategoryId, CrimeSubCategoryName) AS YEAR $_$ 2015 INNER JOIN (

SELECT CrimeRecords.CrimeSubCategoryId, CrimeSubCategoryName, COUNT(*) AS CNT FROM CrimeRecords

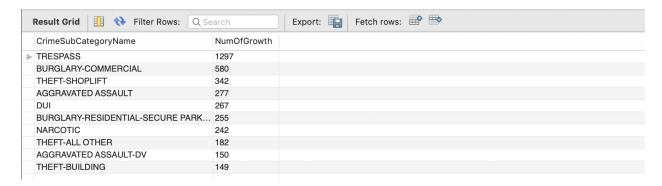
INNER JOIN CrimeSubCategory

ON CrimeRecords.CrimeSubCategoryId = CrimeSubCategory.CrimeSubCategoryId WHERE YEAR(OccurredTimeStamp) = 2017

GROUP BY CrimeRecords.CrimeSubCategoryId, CrimeSubCategoryName) AS YEAR_2017

ON YEAR_2015.CrimeSubCategoryId = YEAR_2017.CrimeSubCategoryId ORDER BY NumOfGrowth DESC

LIMIT 10;



#10. Comparing year 2015 against 2017, what are the top five neighborhoods that are becoming less safe? (with the most increase in number of crime reports)

SELECT NeighborhoodId, Count(*)

```
FROM CrimeBuster.CrimeRecords
Group By NeighborhoodId
Order By Count(*) Asc
Limit 5;
Select Rec17.NeighborhoodId, (Rec17.Rec2017 - Rec15.Rec2015) As Difference
From
(
        Select NeighborhoodId, Count(*) As Rec2017
        From CrimeBuster.CrimeRecords
        Where Year(OccurredTimeStamp) = 2017
        Group by NeighborhoodId
        Order By NeighborhoodId Asc) As Rec17
        Inner Join
(
        Select NeighborhoodId, Count(*) As Rec2015
        From CrimeBuster.CrimeRecords
        Where Year(OccurredTimeStamp) = 2015
        Group by NeighborhoodId
        Order By NeighborhoodId Asc) As Rec15
        On Rec17.NeighborhoodId = Rec15.NeighborhoodId
        Order By Difference Desc
        Limit 5;
```

