

PM3 Submission
Team: Red Cats

1. What are the top 5 most affordable (in terms of price per square foot), safest (in terms of number of crime report), and youngest (in terms of median age) areas by zip code with weight of 50% towards rental price, 30% towards crime counts, and 20% towards median age?

```
SELECT T.ZipCode, CAST(T.AvgPrice_2018 AS DECIMAL(4,3)) AS AvgPrice_2018,  
       CAST(T.Age AS DECIMAL(4,2)) AS AvgAge, T.CNT AS CrimeCount  
FROM (  
    SELECT HistoricalRental.ZipCode, AVG(HistoricalRental.Price_2018) AS AvgPrice_2018,  
          SUM(IF(CrimesData.ZipCode IS NULL, 0, CrimesData.CrimeCnt)) AS CNT,  
          AVG(IF(ResidentsAge.ZipCode IS NULL, 100, ResidentsAge.MedianAge)) AS Age  
    FROM HistoricalRental  
    LEFT OUTER JOIN (  
        SELECT COUNT(*) AS CrimeCnt, Beat.ZipCode  
        FROM Crimes  
        LEFT JOIN Beat  
        ON Crimes.Beat = Beat.Beat  
        GROUP BY Beat.ZipCode) AS CrimesData  
    ON CrimesData.ZipCode = HistoricalRental.ZipCode  
    LEFT OUTER JOIN (  
        SELECT ZipCode, MedianAge  
        FROM Residents) AS ResidentsAge  
    ON ResidentsAge.ZipCode = HistoricalRental.ZipCode  
    GROUP BY HistoricalRental.ZipCode) AS T  
ORDER BY ((T.AvgPrice_2018 * 0.5+ T.CNT * 0.3 + T.Age * 0.2)/(T.AvgPrice_2018 + T.CNT + T.Age))  
LIMIT 5;
```

Result:

ZipCode	AvgPrice_2018	AvgAge	CrimeCount
98122	2.545	32.60	42301
98118	1.669	40.90	26645
98101	3.215	49.00	33106
98109	2.670	35.40	24187
98121	3.169	40.90	27409

2. What is the most affordable rental neighborhood in 2018 YTD with average price per square foot:

```
SELECT CompleteTable.Neighborhood, CAST(AVG(CompleteTable.Price_2018) AS DECIMAL(4,3)) AS AveragePrice
FROM (
    SELECT HistoricalRental.Price_2018, ZipCodesToNeighborhood.ZipCode, ZipCodesToNeighborhood.Neighborhood
    FROM (
        SELECT Beat.ZipCode AS ZipCode, Crimes.Neighborhood AS Neighborhood
        FROM Beat
        INNER JOIN Crimes
            ON Beat.Beat = Crimes.Beat) AS ZipCodesToNeighborhood
    INNER JOIN HistoricalRental
        ON HistoricalRental.ZipCode = ZipCodesToNeighborhood.ZipCode) AS CompleteTable
GROUP BY CompleteTable.Neighborhood
ORDER BY AveragePrice ASC
LIMIT 1;
```

Result:

Neighborhood	AveragePrice
SOUTH BEACON HILL	1.669

3. Rank crime category by number of reports in each neighborhood.

```
SELECT CrimeSubCat, Neighborhood, CNT,
    @CrimeSubCat:=CASE WHEN @Neighborhood <> Neighborhood THEN 0 ELSE @CrimeSubCat+1 END AS rn,
    @Neighborhood:=Neighborhood AS clset
FROM
    (SELECT @CrimeSubCat:= -1) s,
    (SELECT @Neighborhood:= -1) c,
    (SELECT *
    FROM
        (SELECT CrimeSubCat, COUNT(CrimeSubCat) AS CNT, Neighborhood
        FROM Crimes
        GROUP BY CrimeSubCat, Neighborhood) AS CrimeSubCategories
    ORDER BY Neighborhood, CNT DESC
    ) t;
```

Result:

CrimeSubCat	CNT	rn	Neighborhood
THEFT-SHOPLIFT	732	1	ALASKA JUNCTION
MOTOR VEHICLE THEFT	698	2	ALASKA JUNCTION
THEFT-ALL OTHER	691	3	ALASKA JUNCTION
BURGLARY-RESIDENTIAL	632	4	ALASKA JUNCTION
BURGLARY-COMMERCIAL	347	5	ALASKA JUNCTION
THEFT-BUILDING	314	6	ALASKA JUNCTION
BURGLARY-RESIDENTIAL-SEC...	208	7	ALASKA JUNCTION
DUI	192	8	ALASKA JUNCTION
TRESPASS	146	9	ALASKA JUNCTION
AGGRAVATED ASSAULT	135	10	ALASKA JUNCTION

4. What are the top five safe areas in terms of number of crime reports with low rental price by zip code?

```
SELECT CompleteTable.Neighborhood, CompleteTable.ZipCode,
       CompleteTable.CrimeCNT, CAST(AVG(CompleteTable.Price) AS DECIMAL (4,3)) AS AveragePrice
FROM (
    SELECT ZipCodesToNeighborhood.ZipCode, ZipCodesToNeighborhood.Neighborhood,
           ZipCodesToNeighborhood.CrimeCnt AS CrimeCNT, HistoricalRental.Price_2018 AS Price
    FROM (
        SELECT Beat.ZipCode AS ZipCode, Crimes.Neighborhood AS Neighborhood, COUNT(*) AS CrimeCnt
        FROM Crimes
        LEFT JOIN Beat
            ON Beat.Beat = Crimes.Beat
        GROUP BY Beat.ZipCode, Crimes.Neighborhood) AS ZipCodesToNeighborhood
    INNER JOIN HistoricalRental
        ON HistoricalRental.ZipCode = ZipCodesToNeighborhood.ZipCode) AS CompleteTable
WHERE CompleteTable.Neighborhood <> 'UNKNOWN'
GROUP BY CompleteTable.Neighborhood, ZipCode
ORDER BY CrimeCNT ASC, AveragePrice ASC
LIMIT 5;
```

Result:

Neighborhood	ZipCode	CrimeCNT	AveragePrice
SANDPOINT	98118	1	1.669
UNIVERSITY	98125	1	1.714
MAGNOLIA	98125	1	1.714
UNKNOWN	98133	1	1.751
MOUNT BAKER	98106	1	1.770

5. What are the top five affordable area in terms of median rental price per square foot in 2017?

```
SELECT ZipCodes.ZipCode, ZipCodes.City, CAST(Price_2017 AS DECIMAL(4,3)) AS '2017 $/sqft'
FROM HistoricalRental
INNER JOIN ZipCodes
    ON Zipcodes.ZipCode = HistoricalRental.ZipCode
ORDER BY Price_2017
LIMIT 5;
```

Result:

ZipCode	City	2017 \$/sqft
98837	Moses Lake	0.878
98375	Puyallup	0.897
98513	Olympia	0.926
98387	Spanaway	0.933
98374	Puyallup	0.941

6. Which zip codes have the rental price in the range of \$2/sqft – \$2.5/sqft in 2018?

```
SELECT ZipCode, CAST(Price_2018 AS DECIMAL(4,3)) AS '2018 Price/Sqft'
FROM HistoricalRental
WHERE Price_2018 < 2.5
AND Price_2018 > 2
ORDER BY Price_2018 ASC;
```

Result:

ZipCode	2018 Price/Sqft
98199	2.010
98136	2.060
98116	2.074
98117	2.091
98004	2.096
98144	2.099
98103	2.240
98119	2.263
98112	2.305
98107	2.317

7. Which are the top 5 area (zip code) that have the cheapest median rental price in terms of price / sqft in 2018 ordered by number of car crisis in ascending order?

```
SELECT ZipCode, CAST(AVG(FINAL.Price_2018 ) AS DECIMAL(4,3)) AS Price, CrimeSubCat, COUNT(*) AS CRIMECNT
FROM (
  SELECT Price_2018, CrimeSubCat, ZipNeighbors.ZipCode
  FROM (
    SELECT Beat.ZipCode AS ZipCode, Crimes.CrimeSubCat
    FROM Crimes
    INNER JOIN Beat
      ON Crimes.Beat = Beat.Beat
    WHERE Crimes.CrimeSubCat = 'CAR PROWL') AS ZipNeighbors
    INNER JOIN HistoricalRental
      ON HistoricalRental.ZipCode = ZipNeighbors.ZipCode) AS FINAL
GROUP BY ZipCode, CrimeSubCat
ORDER BY Price, CRIMECNT
LIMIT 5;
```

Result:

ZipCode	Price	CrimeSubCat	CRIMECNT
98118	1.669	CAR PROWL	6115
98125	1.714	CAR PROWL	5248
98133	1.751	CAR PROWL	4746
98106	1.770	CAR PROWL	4810
98115	1.978	CAR PROWL	5760

8. What is the estimated rental price per square foot for the area with zip code 98004?

```
SELECT RF.ZipCode, CAST(HR.Price_2018 * (YoY + 1) AS DECIMAL(4,3)) AS Price_2019
FROM RentalForecast RF
INNER JOIN HistoricalRental HR
ON RF.ZipCode = HR.ZipCode
WHERE RF.ZipCode = 98004;
```

Result:

ZipCode	Price_2019
98004	2.006

9. What is the youngest community in Seattle Metro area by zip code with the name of the city and median age?

```
SELECT City, ZipCodes.ZipCode, MedianAge
FROM Residents
INNER JOIN ZipCodes
ON ZipCodes.ZipCode = Residents.ZipCode
ORDER BY MedianAge
LIMIT 1;
```

Result:

ZipCode	City	Median...
98170	Seattle	29.30

10. What is the safest neighborhood in terms of number of crimes to live in?

```
SELECT COUNT(*) AS CrimeCount, Neighborhood
FROM Crimes
WHERE Neighborhood <> 'UNKNOWN'
GROUP BY Neighborhood
ORDER BY CrimeCount ASC
LIMIT 1;
```

Result:

CrimeCount	Neighborhood
160	COMMERCIAL HARBOR ISLAND