Distance To Nearest Airport
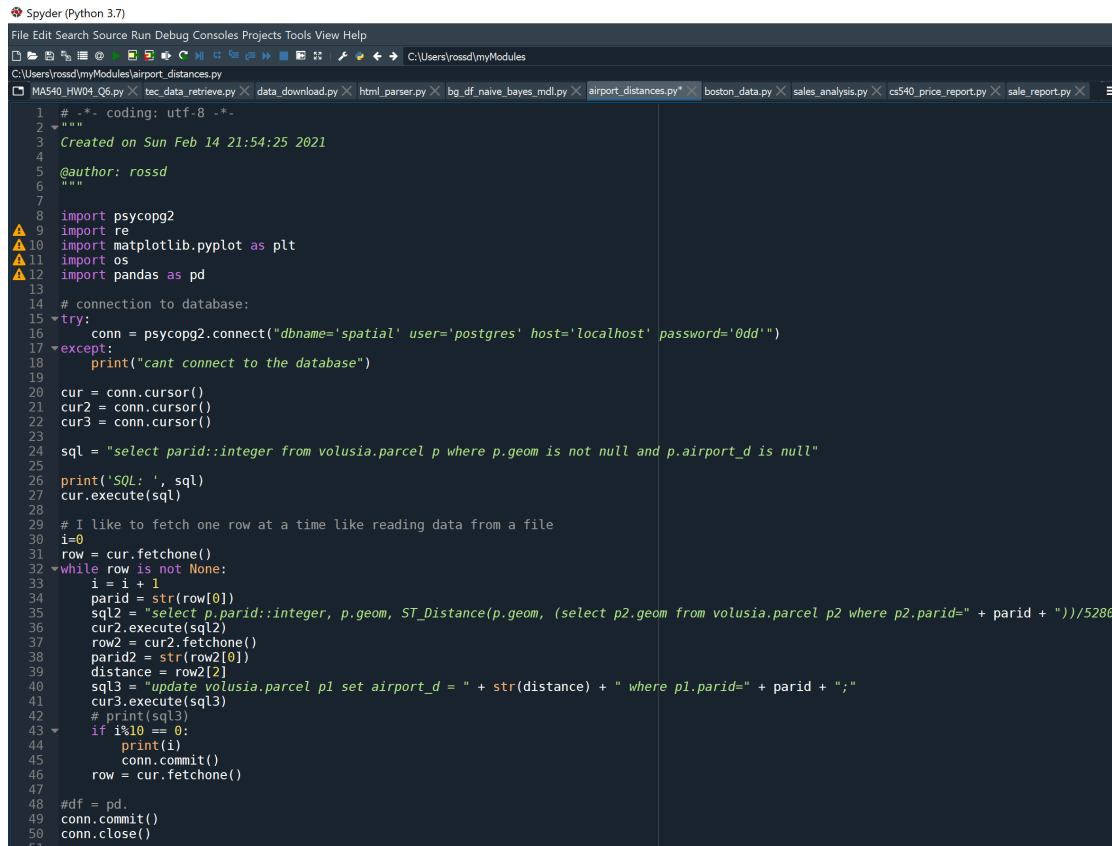
Ross Dickinson

Methodology

- Code was developed with the purpose of calculating the distance to the nearest airport from each individual parcel.

- Overall objective was to determine whether distance to an airport effects the price of a home.

- Airports have a LUC='2000' which was used to identify the airports in the volusia.parcel table.

- Using KNN (limit 1) it was possible to calculate the distance from each parcel in the volusia.parcel table to the nearest airport using ST_distance(); similar to the nearest golf course code.

Code

- Python file available in Github: https://github.com/RossDickinson/CS540_Project_Airport.git

Airport Distance Output

- SQL: *select parid, luc, luc_desc, airport_d from volusia.parcel where airport_d is not null limit 10;*

- Either run the Python code or the data can be accessed through the Github file: *dataset_arpt_dst.txt* (which has tab delimiter)

Data Output   Explain   Messages   Geometry Viewer

	parid double precision	luc text	luc_desc text	airport_d numeric
1	3658299	0100	Single Family	9170319370435
2	3658451	0100	Single Family	5417587665973
3	3658736	0100	Single Family	7125597641192
4	3658761	0100	Single Family	7641253046948
5	3659236	0100	Single Family	5471341093439
6	3659261	0100	Single Family	8586582738313
7	3659821	0100	Single Family	0585465221575
8	4981411	0100	Single Family	7019367307593
9	3660102	0100	Single Family	9498376817604

Property Price and Airport Distance

- Three airports were selected to evaluate the price of a single-family home (SFH) as the distance from the airport increases.

- Key finding was that for large airports, such as Daytona International Airport, the house price increases when the property is further away from the airport. Alternatively, for smaller airports/private airfields, such as Spruce Creek Airport, the house price increases the closer the property is to the airport.

- Large airports cause room for concern for property owners in terms of noise pollution.

- Smaller airports have less noise pollution and attract more affluent homeowners.

QGIS – Daytona Beach Airport
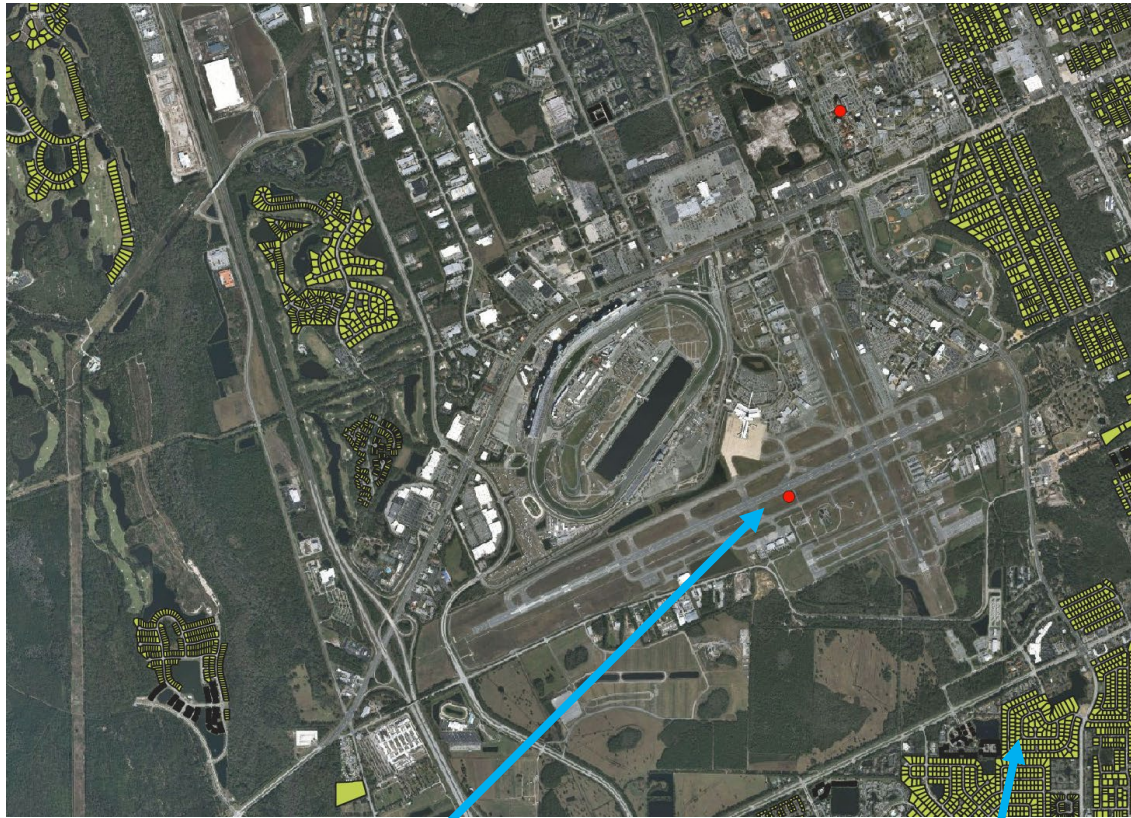
Airport

Single-family homes

Comments:
- Low concentration of homes within vicinity of the airport.
- Average house price is lower than homes close to smaller airports.
- Address: 700 Catalina Dr, Daytona Beach, FL 32114.
- Parid: 3307062.

QGIS – Spruce Creek Airport

Comments:
- High concentration of homes within vicinity of the airport.
- Average house price is higher than homes close to larger airports.
- Address: 1-212 CESSNA BLVD, PORT ORANGE 32128 .
- Parid: 6024065.

Airport

Single-family homes
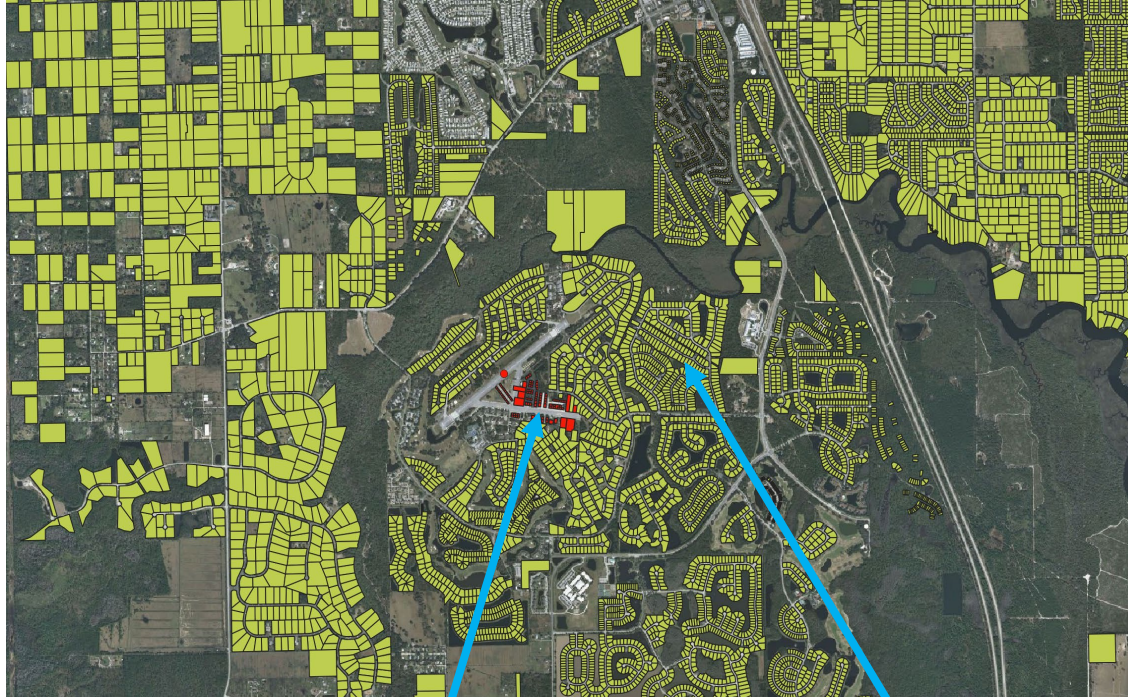
QGIS – New Smyrna Airport
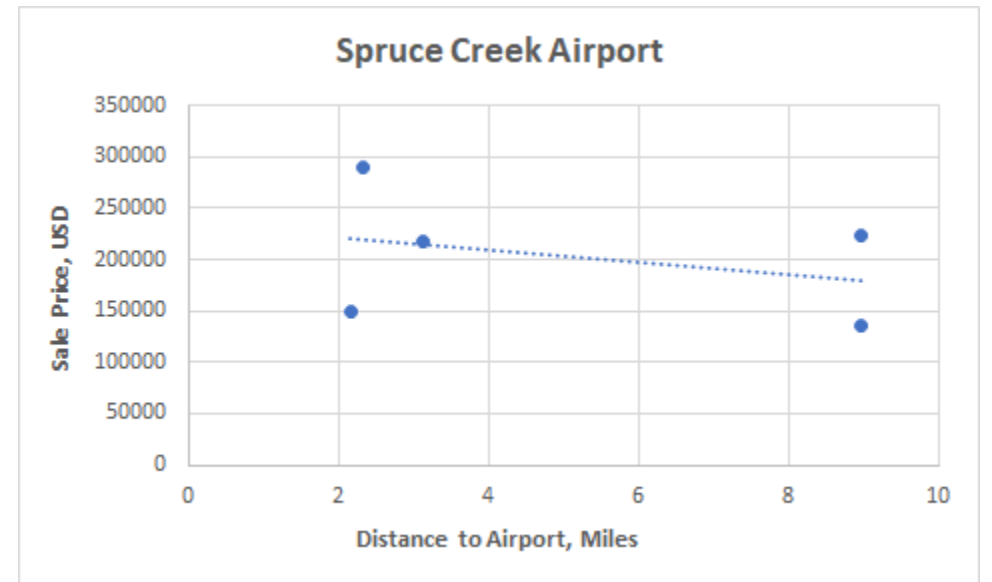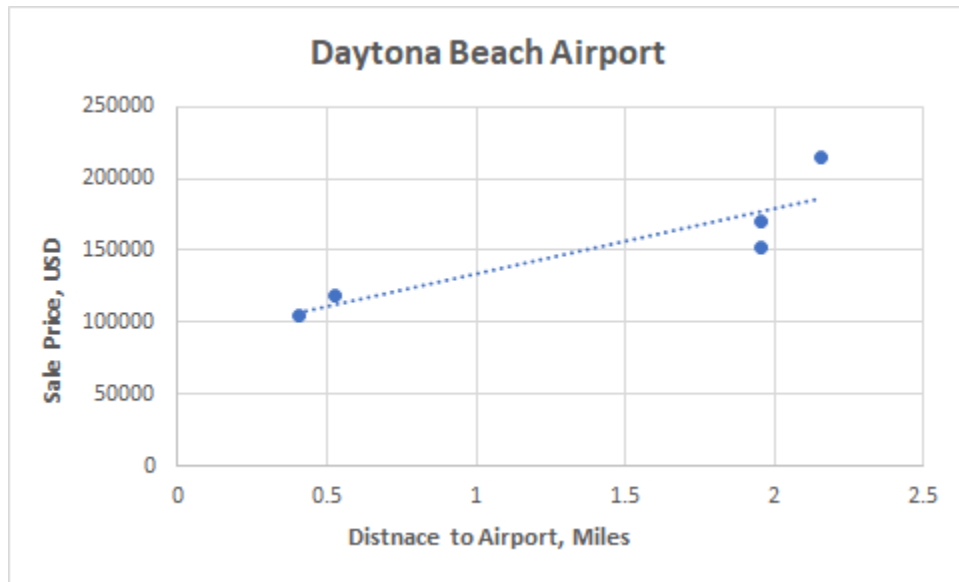

Airport

Single-family homes

Comments:
- High concentration of homes within vicinity of the airport.
- Average house price is higher than homes close to larger airports.
- Address: 210 SAMS AVE
  NEW SMYRNA BEACH FL 32168.
- Parid: 3865278.

Cleaning Up The Data

- Only single-family home (SFH) prices were evaluated where LUC='0100'.

- LUC of '2000' also encompasses seaports and terminals. These were removed from the dataset such that only airports were evaluated.

- The five nearest SFHs were found to each airport and the sale price and distance were recorded.

- It turns out there is a linear relationship between distance and house price.
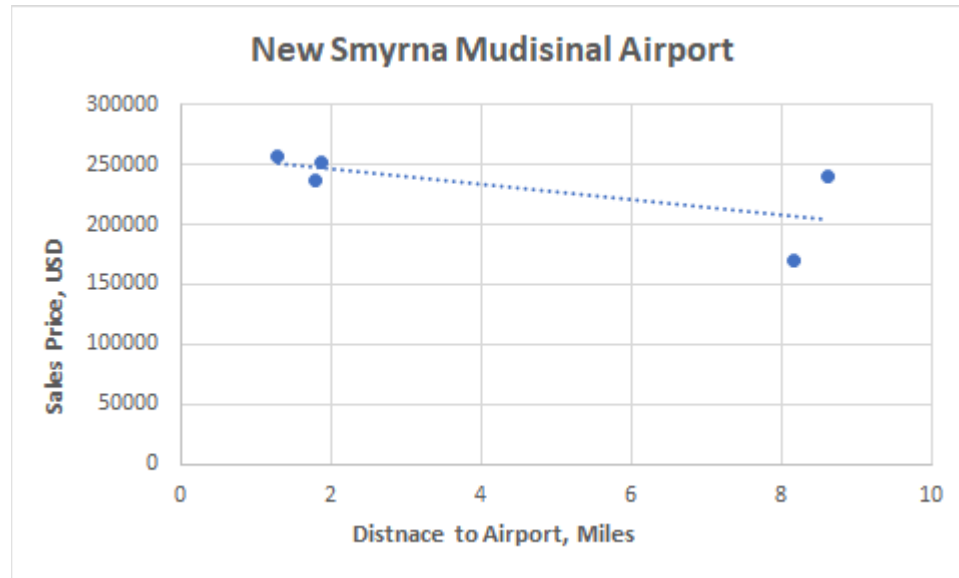
Property Price Behavior

- The mean house price is higher for properties closer to smaller airports.

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- The mean house price is higher for properties closer to smaller airports.

New Smyrna Mudisinal Airport

Learning Outcomes

- The mean house price is higher for properties closer to smaller airports.

- When analyzing the influence of airport distance on a SFH's house price, it would suggest that the size of the airport is the most important factor rather than distance to the airport itself. With larger airports, such as Daytona Beach International Airport, the value of a home decreases as the property gets closer to the airport.

- Conversely, for smaller private airfields, the value of a home increases as the distance from a property to the airport is reduced. This is most likely because some affluent property owners will hold their private aircraft at smaller airfields.

- In addition, there is less impact from noise pollution in smaller airports than larger more commercial ones.