Project cover sheet

Project title: **Irish Residential Property Price Register Analysis**

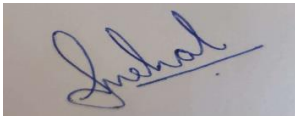**Group members: Snehal Deshmukh**

Akanksha Raut

Madhusudan Panwar

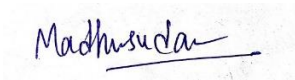**All group members have read and agreed to the final version of all documents.**

Signatures

1.

2.

3.

Introduction:

The aim of this project is to analyze the rate of change in house prices from 2010 to 2020 for a range of Irish towns. In 2010, Ireland set up a residential property house price register for its citizens which will help them to have a look at the list of address of houses sold and the price for which they were sold starting from year 2010 and onwards. After data cleaning, using various variety of packages, we came across various counts, prices and trends for the towns and counties that we decided upon for comparison.

Method:

The data processing is based on the values of variables from the dataset: address of the house, the date when it was sold, selling price and description of property. After eliminating duplicate entries and dividing price by 100,000 to make it readable, data for town names and month, year were collected from address and date of sale. The concept of IQR is implemented to get the quartiles for the prices of house and to analyze on the outliers if any.

Results and Discussion:

Starting the analysis on the basis of comparing counties the plot was made for all the prices for each year for two counties – Kildare and Kerry.

Year wise price for KILDARE COUNTY

Overall KERRY COUNTY PPR
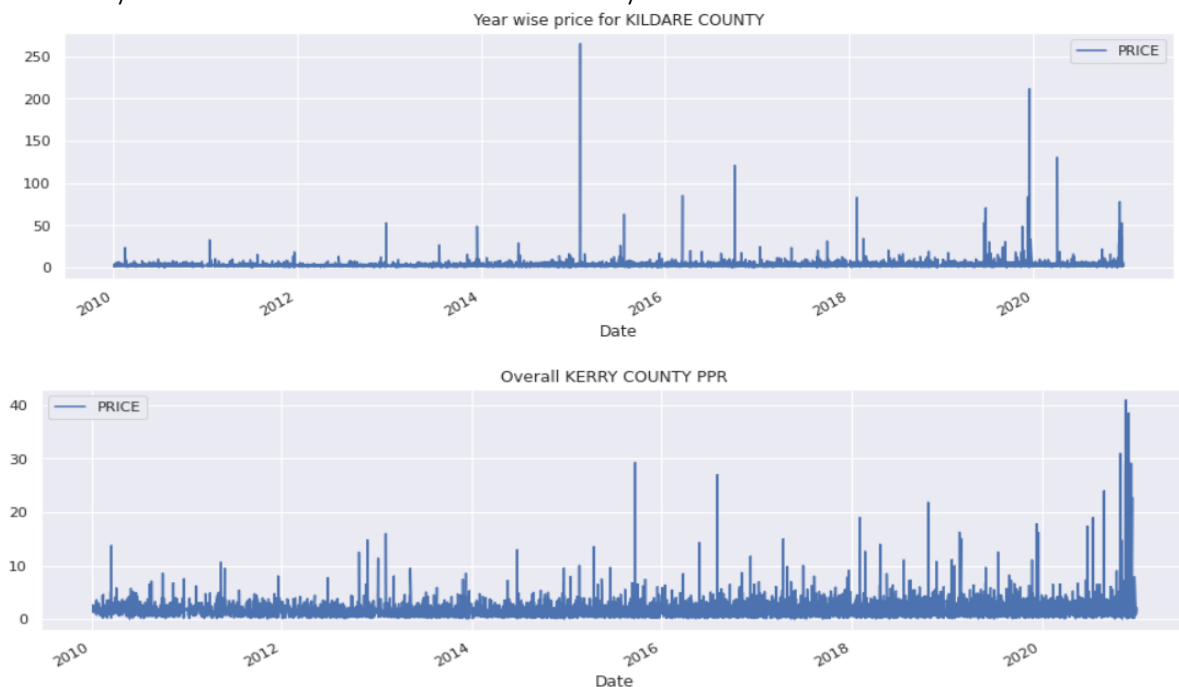
Property Price Register is the source of data which is used to process and find pattern of houses of two locations at various time frame. There are few spikes in County Kildare at long yearly time differences however the prices do not have a high price range. When we consider County Kerry data, the price varies in a long range over the years where we can find some seasonal price patterns. We can figure out that there are major houses which are in affordable range but some houses have high rates which are considered to be expensive.

Following pie chart will help us to get to know the percentage of houses that are costly in the county out of all the houses that were sold.

Kildare
Kerry

In Between
>75%
<= 25%
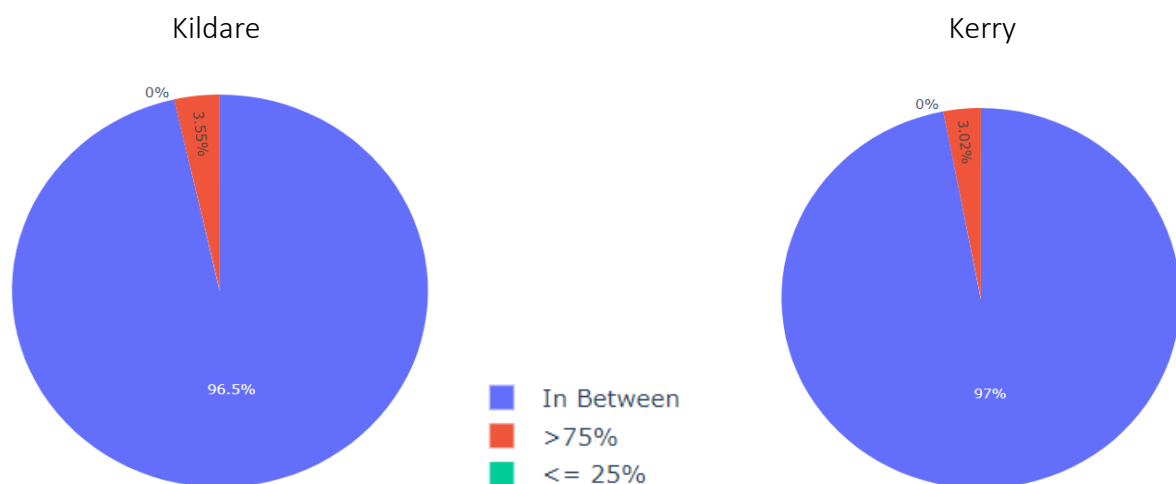
Three major findings were to be highlighted in the above pie chart, where one result is not visible as there are no houses which falls under 25% range. Majority of the houses are in affordable range. For county Kildare, the percentage of costly houses were 3.55% whereas for Kerry it is 3.02%. On getting a look at the minimum, maximum and average prices for few towns in both the counties we come across following numbers.

	Town	County	Minimum Price	Maximum Price	Average Price
0	Dingle	Kerry	16000.00	2925000.00	212274.097933
1	Tralee	Kerry	7000.00	2273127.75	138156.559981
2	Killarney	Kerry	6338.69	4096916.28	202068.811652
3	Kenmare	Kerry	12336.00	2700000.00	186476.068591
4	Maynooth	Kildare	17834.03	21155144.72	331031.371907
5	Naas	Kildare	10000.00	12073334.00	285108.824669
6	Leixlip	Kildare	12000.00	7040000.00	311419.546821

Maynooth, Kildare has one of the widest ranges of price houses out of all the counties considered as the minimum price, maximum and average prices have good high values. Minimum starting price of houses are in town Killarney and Tralee which are both under the border of County Kerry.

The Irish house price register contains houses which are either sold newly or are second hand.

Description of Property=Second-Hand Dwelling house /Apartment
Description of Property=New Dwelling house /Apartment

Boxplot of Price for KILDARE grouped by Description of Property

Boxplot of Price for KERRY grouped by Description of Property

Based on the boxplot above, we can see that there are barely any houses with expensive house rates in County Kildare whereas in Count Kerry the range goes up in a consistent manner. On conducting the comparative study of prices for all the towns we come across following graph.
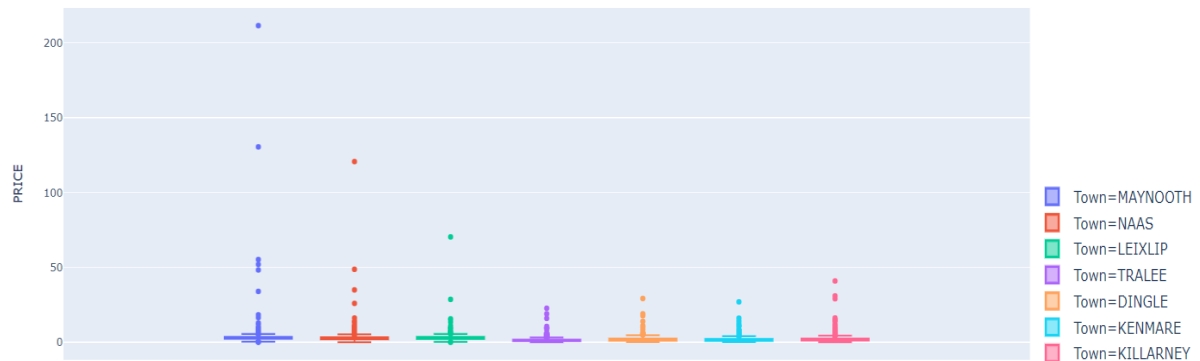

Out of all the towns Maynooth seems to be the costliest followed by Naas and Leixlip whereas Tralee is the cheapest.

Later on, according to the data available on the Irish property price register, the study for sales were performed to get the town which was most popular amongst citizens to buy the houses.
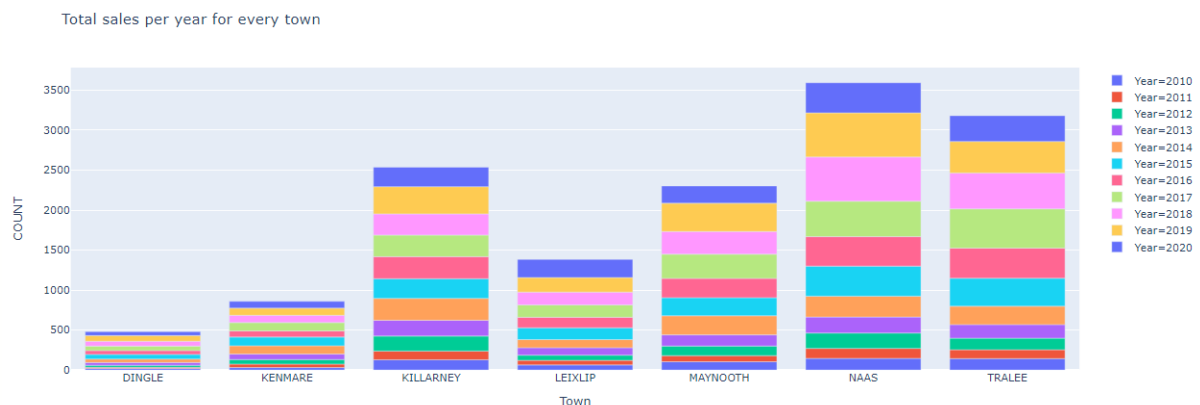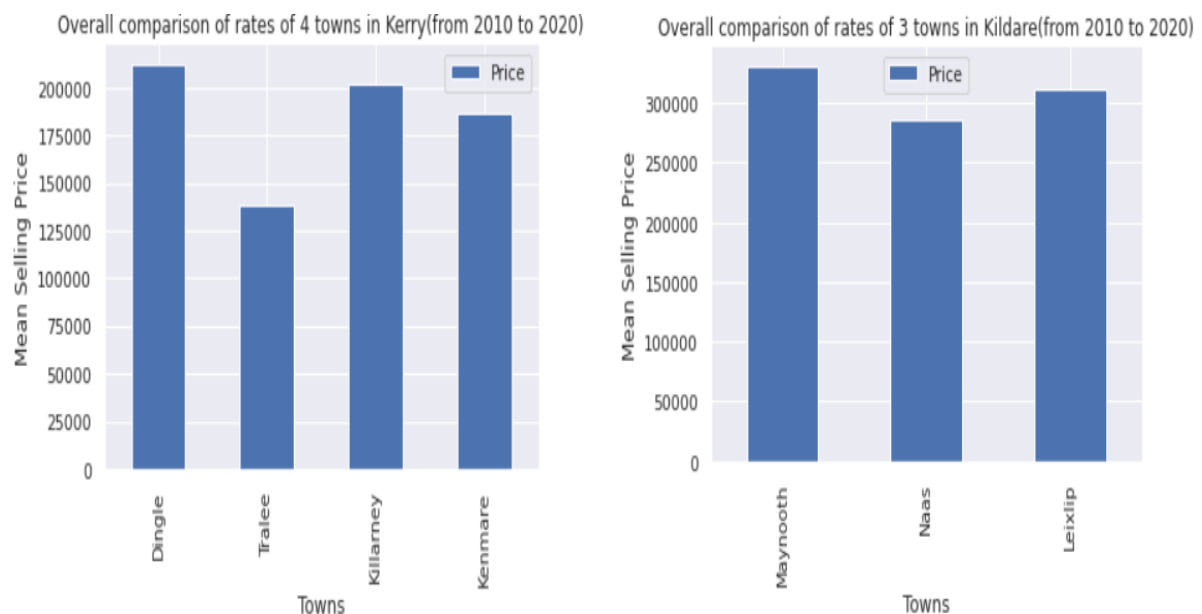

In the above graph of count of sales for each year mentioning all towns, illustrates that Naas recorded more sales amongst all the towns where Dingle had least sales. Similar can been verified from the comparative study for sum of sales per year for each town. The following lines graph from the year 2010 to 2020 depicts that Naas has highest sum of sales and Dingle observed the least.
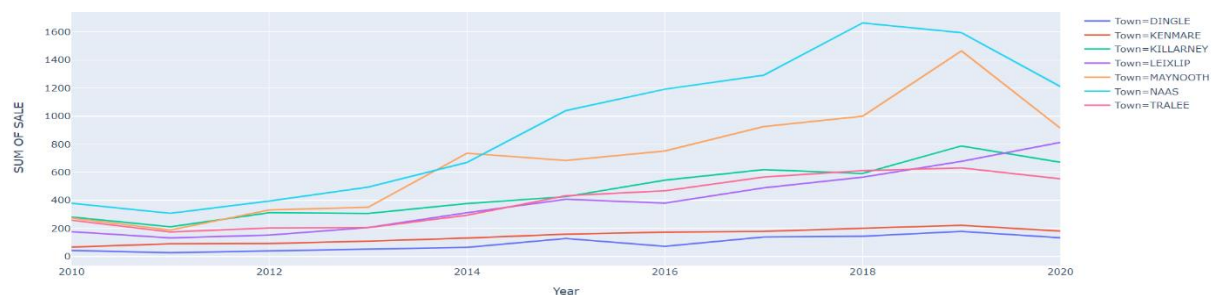
On finding the mean of sales per year for every town, the mean is higher for town Maynooth which had second highest sum of sales in the above graph. Followed by Maynooth, Leixlip-Naas and Dingle-Killarney had almost similar mean of sales in the year 2020.
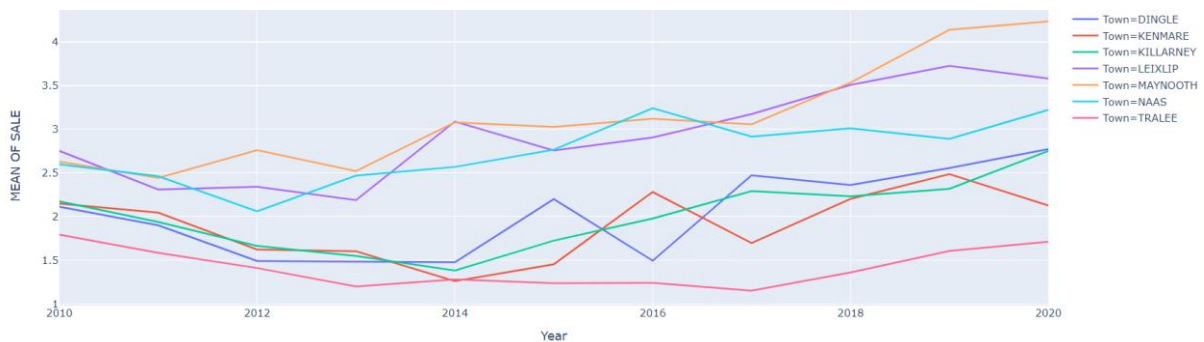
Overall comparison of rates for three towns in Kildare and four towns in Kerry from the year 2010 to 2020 can be seen in the following bar graph. It is observed that the mean selling price is higher for Dingle in Kerry whereas in Kildare it is for Maynooth. For Kerry, we observed that Tralee had the maximum number of houses sold but mean price being the lowest for the same. This made us research into this deeper and come to a conclusion that Dingle and Killarney are popular tourist places followed by Kenmare, which made the house rates there very high as compared to Tralee.

References

- https://plotly.com/python/
- https://matplotlib.org/
- https://www.wikipedia.org/
- https://www.askpython.com/
- https://www.justintodata.com/plotly-python-tutorial-create-graph/
- https://stackoverflow.com/
- https://www.w3schools.com/python/