
Melbourne Housing Price Prediction

Team 2

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Agenda

- Dataset
- Interesting figures
- Anticipated results & Practical use

Melbourne Housing Price Prediction

- Kaggle: <https://www.kaggle.com/anthonypino/melbourne-housing-market>
- 21 columns / 34,009 rows
- Goals:
 - Trying different models to make accurate price prediction
 - Finding important variables influence price the most
 - Giving advice to buyers and sellers
- Variables:
 - 8 characters: Address, Regionname, Type...
 - 7 integers: Rooms, Landsize, YearBuilt...
 - 6 numeric: BuildingArea, Distance...

Loading Dataset

```
> str(dt_housing)
Classes 'data.table' and 'data.frame': 34857 obs. of 21 variables:
 $ Suburb      : chr  "Abbotsford" "Abbotsford" "Abbotsford" "Abbotsfo
rd" ....
 $ Address      : chr  "68 studley St" "85 Turner St" "25 Bloomberg St"
"18/659 Victoria St" ...
 $ Rooms        : num   2 2 2 3 3 3 4 4 2 2 ...
 $ Type         : chr   "h" "h" "h" "u" ...
 $ Price        : num   NA 1480000 1035000 NA 1465000 ...
 $ Method       : chr   "SS" "S" "S" "VB" ...
 $ SellerG      : chr   "Jellis" "Biggin" "Biggin" "Rounds" ...
 $ Date         : chr   "3/09/2016" "3/12/2016" "4/02/2016" "4/02/2016"
...
 $ Distance     : num   2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 ...
 $ Postcode     : num   3067 3067 3067 3067 3067 ...
 $ Bedroom2     : num   2 2 2 3 3 3 3 4 3 ...
 $ Bathroom     : num   1 1 1 2 2 2 1 2 1 ...
 $ Car          : num   1 1 0 1 0 1 2 2 2 1 ...
 $ Landsize     : num   126 202 156 0 134 94 120 400 201 202 ...
 $ BuildingArea : num   NA NA 79 NA 150 NA 142 220 NA NA ...
 $ YearBuilt    : num   NA NA 1900 NA 1900 ...
 $ CouncilArea  : chr   "Yarra City Council" "Yarra City Council" "Yarra
City Council" "Yarra City Council" ...
 $ Latitude     : num   -37.8 -37.8 -37.8 -37.8 -37.8 ...
 $ Longitude    : num   145 145 145 145 145 ...
 $ Regionname   : chr   "Northern Metropolitan" "Northern Metropolitan"
"Northern Metropolitan" "Northern Metropolitan" ...
 $ Propertycount: num   4019 4019 4019 4019 4019 ...
- attr(*, ".internal.selfref")=<externalptr>
```

RStudio Source Editor

```
library(readr)

housing <- read_csv(
  "C:\\Users\\chieb\\Downloads\\Melbourne_housing_FULL.csv")

view(housing)
```

RStudio Source editor

	Suburb	Address	Rooms	Type	Price	Method	SellerG	Date	Distance	Postcode	Bedroom2	Bathroom	Car	Landsize	BuildingArea	YearBuilt
1	Abbotsford	68 Studley St	2	h	NA	SS	Jellis	3/09/2016	2.5	3067	2	1	1	126	NA	
2	Abbotsford	85 Turner St	2	h	1480000	S	Biggin	3/12/2016	2.5	3067	2	1	1	202	NA	
3	Abbotsford	25 Bloomberg St	2	h	1035000	S	Biggin	4/02/2016	2.5	3067	2	1	0	156	79	19
4	Abbotsford	18/659 Victoria St	3	u	NA	VB	Rounds	4/02/2016	2.5	3067	3	2	1	0	NA	
5	Abbotsford	5 Charles St	3	h	1465000	SP	Biggin	4/03/2017	2.5	3067	3	2	0	134	150	19
6	Abbotsford	40 Federation La	3	h	850000	PI	Biggin	4/03/2017	2.5	3067	3	2	1	94	NA	
7	Abbotsford	55a Park St	4	h	1600000	VB	Nelson	4/06/2016	2.5	3067	3	1	2	120	142	20
8	Abbotsford	16 Maugie St	4	h	NA	SN	Nelson	6/08/2016	2.5	3067	3	2	2	400	220	20
9	Abbotsford	53 Turner St	2	h	NA	S	Biggin	6/08/2016	2.5	3067	4	1	2	201	NA	
10	Abbotsford	99 Turner St	2	h	NA	S	Collins	6/08/2016	2.5	3067	3	2	1	202	NA	19
11	Abbotsford	129 Charles St	2	h	941000	S	Jellis	7/05/2016	2.5	3067	2	1	0	181	NA	
12	Abbotsford	124 Yarra St	3	h	1876000	S	Nelson	7/05/2016	2.5	3067	4	2	0	245	210	19
13	Abbotsford	121/56 Nicholson St	2	u	NA	PI	Biggin	7/11/2016	2.5	3067	2	2	1	4292	82	20
14	Abbotsford	17 Raphael St	4	h	NA	W	Biggin	7/11/2016	2.5	3067	6	2	0	230	147	19
15	Abbotsford	98 Charles St	2	h	1636000	S	Nelson	8/10/2016	2.5	3067	2	1	2	256	107	19
16	Abbotsford	217 Langridge St	3	h	1000000	S	Jellis	8/10/2016	2.5	3067	NA	NA	NA	NA	NA	
17	Abbotsford	18a Mollison St	2	t	745000	S	Jellis	8/10/2016	2.5	3067	NA	NA	NA	NA	NA	
18	Abbotsford	6/241 Nicholson St	1	u	300000	S	Biggin	8/10/2016	2.5	3067	1	1	1	0	NA	
19	Abbotsford	10 Vallant St	2	h	1097000	S	Biggin	8/10/2016	2.5	3067	3	1	2	220	75	19
20	Abbotsford	403/609 Victoria St	2	u	542000	S	Dingle	8/10/2016	2.5	3067	NA	NA	NA	NA	NA	
21	Abbotsford	2 Rich St	2	h	NA	SP	Biggin	10/12/2016	2.5	3067	2	1	1	176	80	19
22	Abbotsford	25/84 Trenerry Cr	2	u	760000	SP	Biggin	10/12/2016	2.5	3067	NA	NA	NA	NA	NA	
23	Abbotsford	106/119 Turner St	1	u	481000	SP	Purplebricks	10/12/2016	2.5	3067	NA	NA	NA	NA	NA	
24	Abbotsford	411/8 Grosvenor St	2	u	700000	VB	Jellis	12/11/2016	2.5	3067	2	2	1	0	NA	
25	Abbotsford	40 Nicholson St	3	h	1350000	VB	Nelson	12/11/2016	2.5	3067	3	2	2	214	190	20
26	Abbotsford	123/56 Nicholson St	2	u	750000	S	Biggin	12/11/2016	2.5	3067	2	2	1	0	94	20
27	Abbotsford	22 Park St	4	h	1985000	S	Biggin	12/11/2016	2.5	3067	NA	NA	NA	NA	NA	
28	Abbotsford	13/84 Trenerry Cr	1	u	500000	S	Biggin	12/11/2016	2.5	3067	NA	NA	NA	NA	NA	
29	Abbotsford	45 William St	2	h	1172500	S	Biggin	13/08/2016	2.5	3067	2	1	1	195	NA	

Showing 1 to 29 of 34,857 entries, 21 total columns

Variable Descriptions

Price: Price in Australian dollars

Type:

br - bedroom(s);

h - house,cottage,villa, semi,terrace;

u - unit, duplex;

t - townhouse;

dev site - development site;

o res - other residential.

Address: Address

Distance: Distance from Major City(km)

Latitude: Self explanatory

Longitude: Self explanatory

SellerG: Real Estate Agent

Method:

S - property sold;

SP - property sold prior;

PI - property passed in;

PN - sold prior not disclosed;

SN - sold not disclosed;

NB - no bid;

VB - vendor bid;

W - withdrawn prior to auction;

SA - sold after auction;

SS - sold after auction price not disclosed.

N/A - price or highest bid not available.

Date: Date sold

Regionname: General Region (West, North, etc)

Suburb: Suburb

Propertycount: Number of properties in the suburb.

Rooms: Number of rooms

Bedroom2 : Scraped # of Bedrooms

Bathroom: Number of Bathrooms

Car: Number of carspots

Landsize: Land Size in Metres

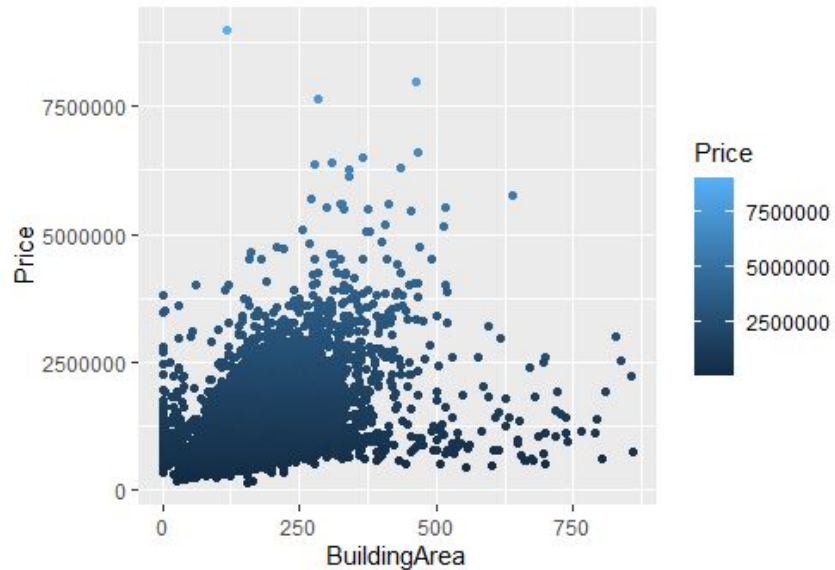
BuildingArea: Building Size in Metres

YearBuilt: Year the house was built

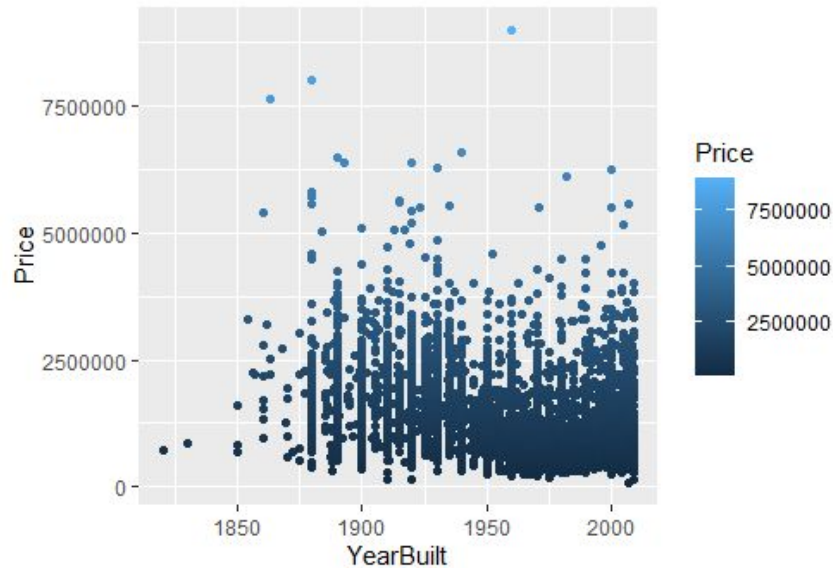
CouncilArea: Governing council for the area

Example Graphs

Building Area v. Price



Year Built v. Price



Anticipated results & Practical uses

- Predicting housing prices in Melbourne
 - The price VS year and season
 - Which season has the highest number of home sales?
 - Which month should sellers and buyers put their homes up for sale?
 - The price VS year and region
 - Which area's housing prices are rising fast?
 - Where do homebuyers prefer to move to?
 - The price VS rooms, car and bathrooms
 - Which house type is the most popular?

Anticipated results & Practical uses

- Identifying features with strong influence
 - Which one is most important influences on rising home prices?
 - With limited land area, how developers build their houses to make the selling price higher?
- Visualizing the relationship between price and features
- Understanding trends in the Melbourne housing market
 - For sellers/developers:
 - Pricing the houses
 - Proposing selling strategies based on consumers' ideal house type
 - For buyers:
 - Negotiating house prices

Q&A
