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


```r
library(readr)

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

View(housing)
```

```
> 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 Bloomburg 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 3 4 3 ...
 $ Bathroom     : num  1 1 1 2 2 2 1 2 1 2 ...
 $ 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 NA ...
 $ CouncilArea  : chr  "Yarra City Council" "Yarra City Council" "Yarra
 City Council" "Yarra City Council" ...
 $ Lattitude    : num  -37.8 -37.8 -37.8 -37.8 -37.8 ...
 $ Longtitude   : 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>
```

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
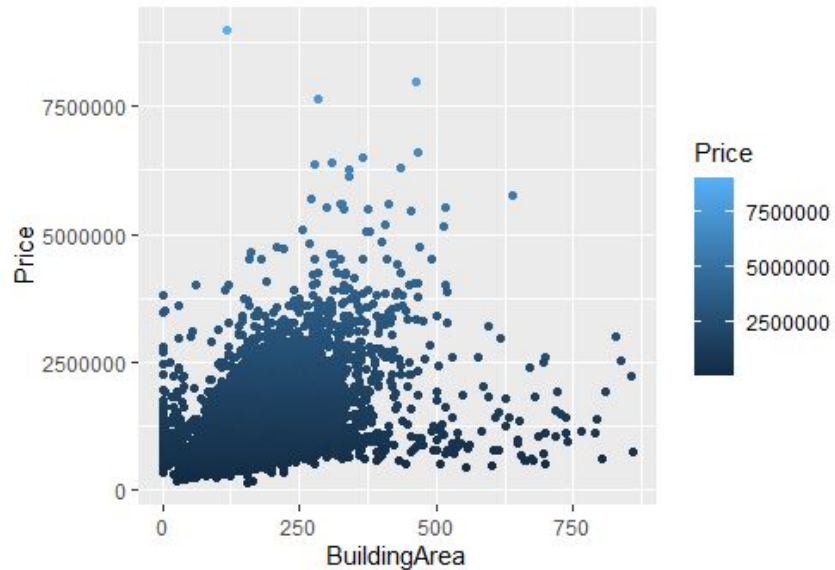
Landsize: Land Size in Metres

BuildingArea: Building Size in Metres
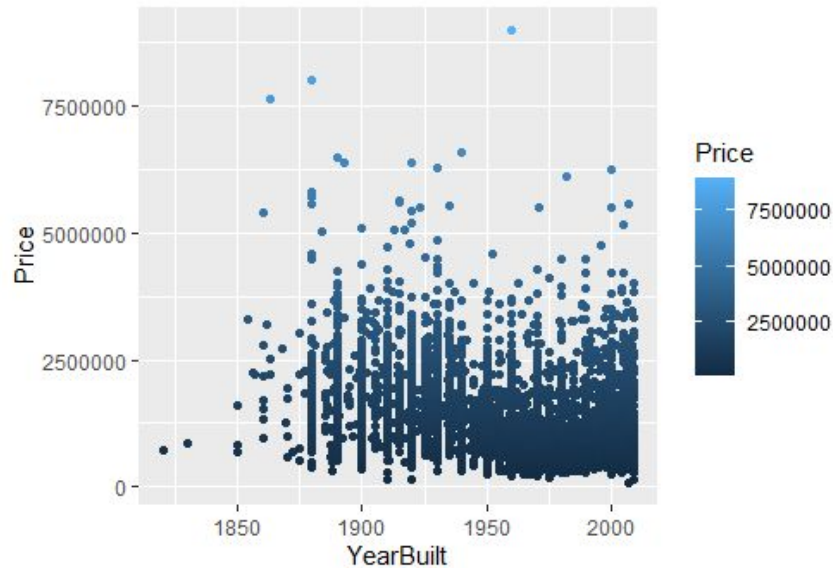
YearBuilt: Year the house was built

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