HOUSIE

MariBisnis

Capstone Project

Nafisan Nauroti Salsa Bila
DAI-005
Data and Artificial Intelligence
Microsoft

About this Project

MariBisnis ingin mengetahui trend bisnis dari penjualan rumah yang ada di Amerika Serikat. Harapannya, MariBisnis dapat untuk memprediksi harga suatu rumah dan melalukan pemetaan terhadap sebaran data yang ada.

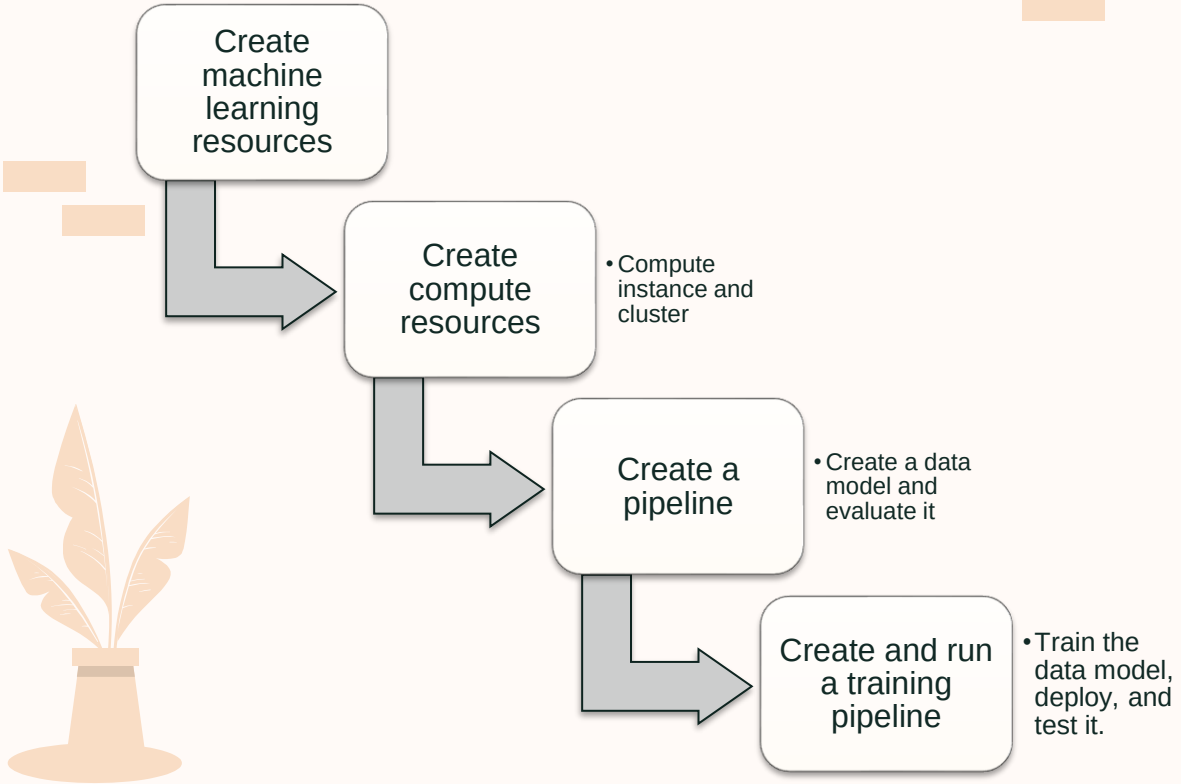
Dataset

21 features that need to be explained and processed:

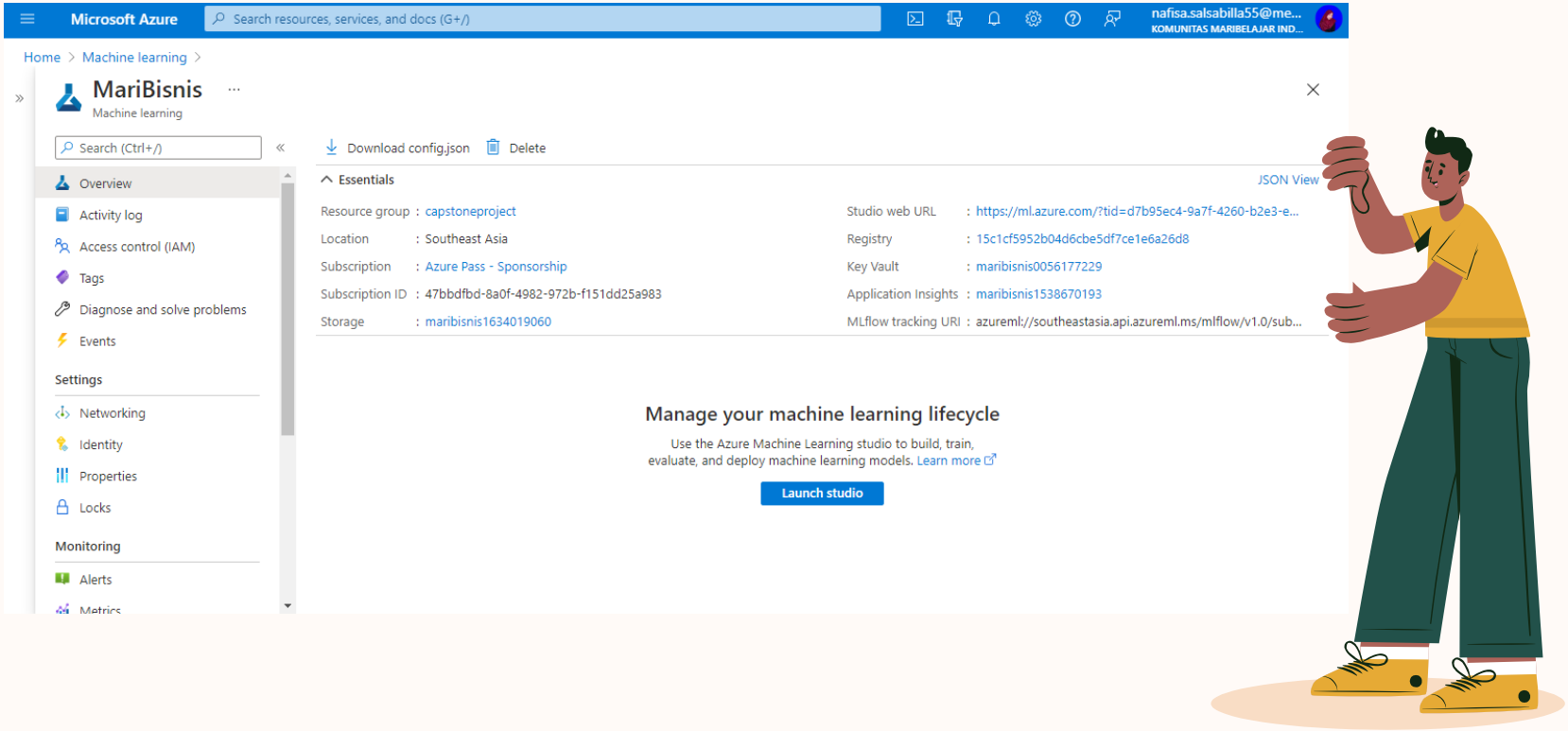
Column name	Description	Column name	Description
id	A notation for a house	grade	The overall grade is given to the housing unit, based on the King County
date	Date house was sold		
price	Price in the prediction target	sqft_above	Sqft of house apart from the basement
bedrooms	Number of bedrooms/house	sqft_basement	Sqft of the basement
bathrooms	Number of bathrooms/bedrooms	yr_built	The year when the house was built
sqft_living	Square footage of the house	yr_renovated	The year when the house was renovated
sqft_lot	Square footage of the lot	zipcode	Zip code
floors	Total floors (levels) in the house	lat	Latitude coordinate
waterfront	House which has a view to a waterfront	long	Longitude coordinate
view	Has been viewed	sqft_living15	Square footage living in 2015
condition	How good the condition is overall	sqft_lot15	Square footage lot in 2015

Link download:
https://onedrive.live.com/?authkey=%21AKqjhQKiqhcKPho&id=1A1C328B89C1FDC0%21455863&cid=1A1C328B89C1FDC0

Pre-processing and Processing



Create Machine Learning Resources



Create Compute Resources

Compute instances

Resource properties

Status
Stopped

Last operation
Stopped at Dec 2, 2021 5:02 PM: Succeeded

Virtual machine size
Standard_DS11_v2 (2 cores, 14 GB RAM, 28 GB disk)

Processing unit
CPU - Memory optimized

Additional data storage
--

Applications
JupyterLab Jupyter VS Code RStudio Terminal

Created on
11/24/2021, 10:08:35 AM

SSH access
Disabled

Attributes

Compute name
Project

Compute type
Compute instance

Subscription ID
47bbdfbd-8a0f-4982-972b-f151dd25a983

Resource group
capstoneproject

Workspace
MariBisnis

Region
southeastasia

Created by
NAFISAN NAUROTI SALSA BILA

Compute clusters

Resource properties

Virtual machine size
Standard_DS11_v2 (2 cores, 14 GB RAM, 28 GB disk)

Processing unit
CPU - Memory optimized

OS Type
Linux

Virtual machine priority
Dedicated

Minimum number of nodes
0

Maximum number of nodes
2

Idle seconds before scale down
120

Virtual network/subnet
--

Attributes

Compute name
Capstone

Resource ID
--

Compute type
Machine Learning compute

Subscription ID
47bbdfbd-8a0f-4982-972b-f151dd25a983

Resource group
capstoneproject

Workspace
MariBisnis

Region
southeastasia

Create a Pipeline

Create and Run a Training Pipeline

Evaluate Model

Mean Absolute Error	90077.066624
Root Mean Squared Error	161582.656996
Relative Squared Error	0.202203
Relative Absolute Error	0.386073
Coefficient of Determination (r^2)	0.797797

- represents the mean absolute error between the predicted result and the original result.
- represents that the variation in the value produced by a forecast model is close to the variation in the observed value.
- a relative metric between 0 and 1 based on the square of the differences between predicted and true values.
- a relative metric between 0 and 1 based on the absolute differences between predicted and true values.
- represents summarizes how much of the variance between predicted and true values is explained by the model.

Create
Visualization

Correlation

By grade

Condition

Price by grade

Price by bathroom

Price by sqft

```
corr_matrix = df_housing.corr()
corr_matrix['price'].sort_values(ascending=False)
```

```
price            1.000000
sqft_living      0.702035
grade            0.667434
sqft_above       0.605567
sqft_living15    0.585379
bathrooms        0.525138
view             0.397293
sqft_basement    0.323816
bedrooms         0.308350
lat              0.307003
waterfront       0.266369
floors           0.256794
yr_renovated     0.126434
sqft_lot         0.089661
sqft_lot15       0.082447
yr_built         0.054012
condition        0.036362
long             0.021626
id              -0.016762
zipcode         -0.053203
Name: price, dtype: float64
```

Correlation

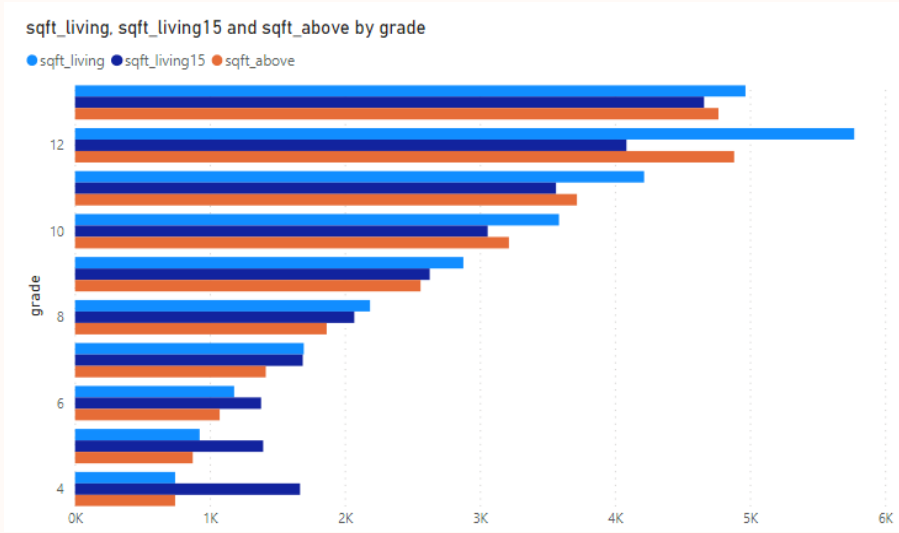
By grade

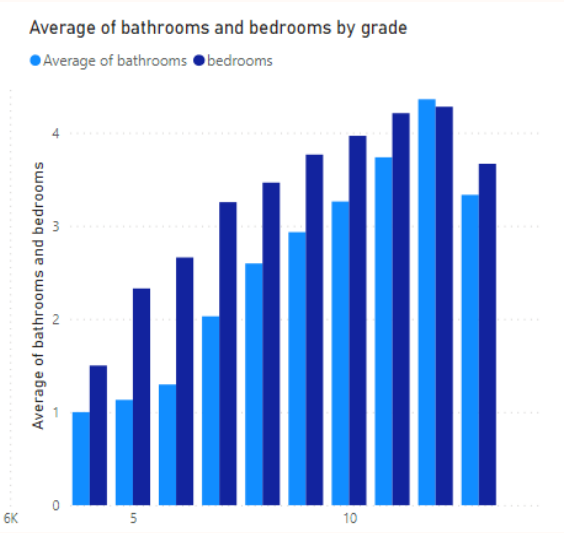
Condition

Price by grade

Price by bathroom

Price by sqft





Correlation

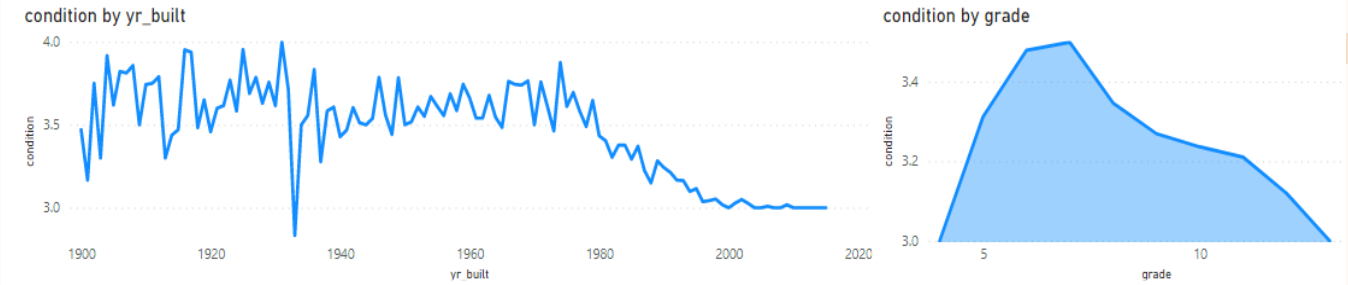
By grade

Condition

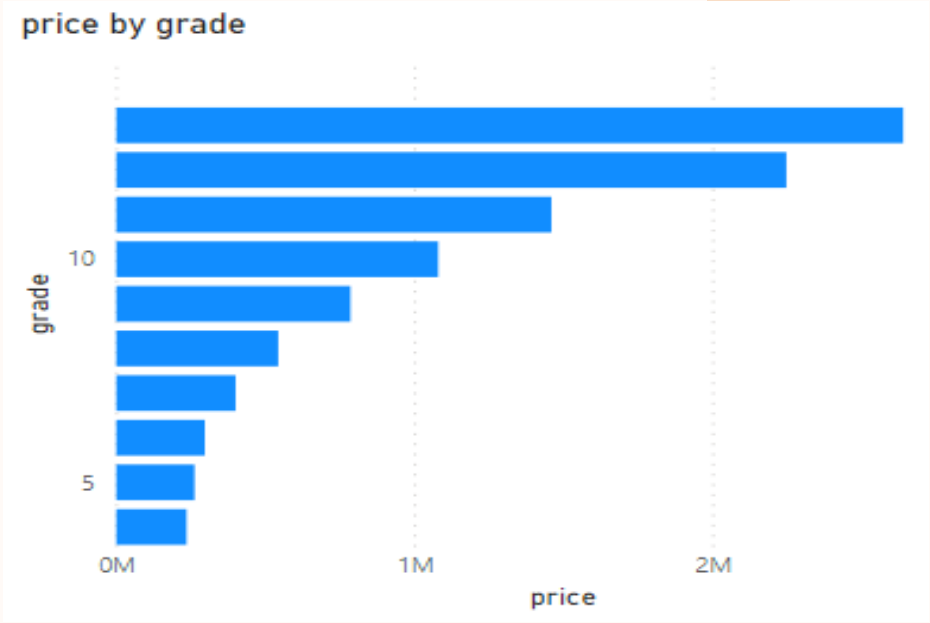
Price by grade

Price by bathroom

Price by sqft

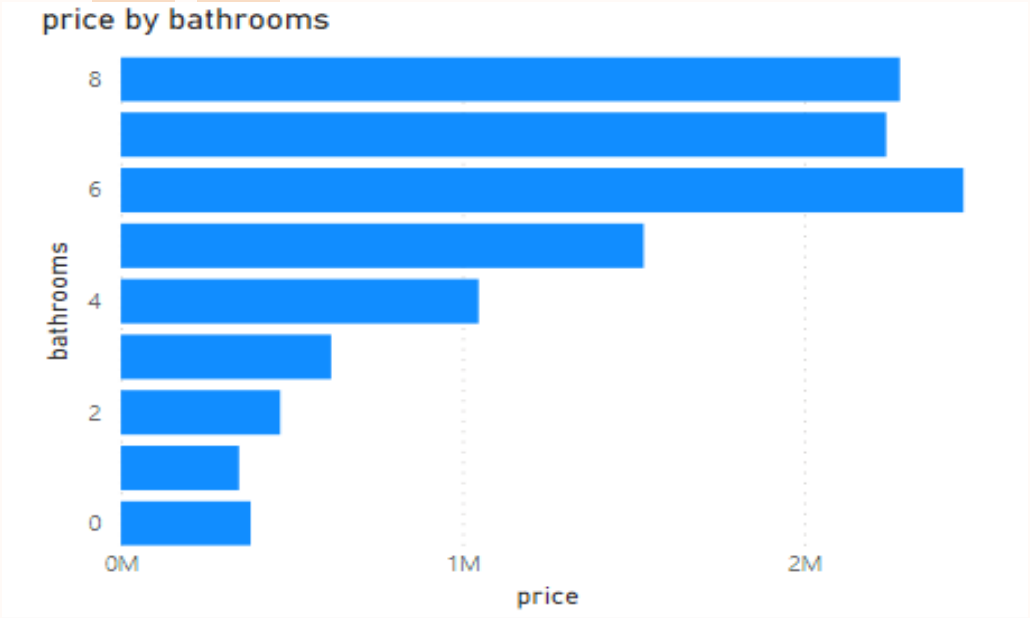


Price by grade



Correlation
By grade
Condition
Price by grade
Price by bathrooms
Price by sqft

Price by bathrooms



Correlation

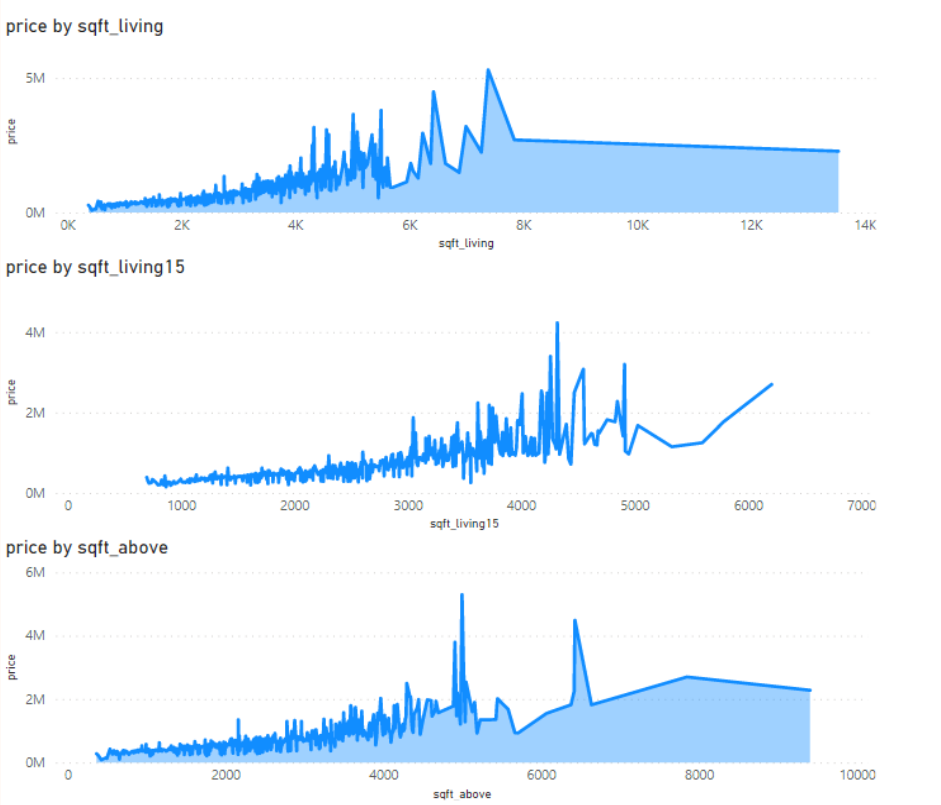
By grade

Condition

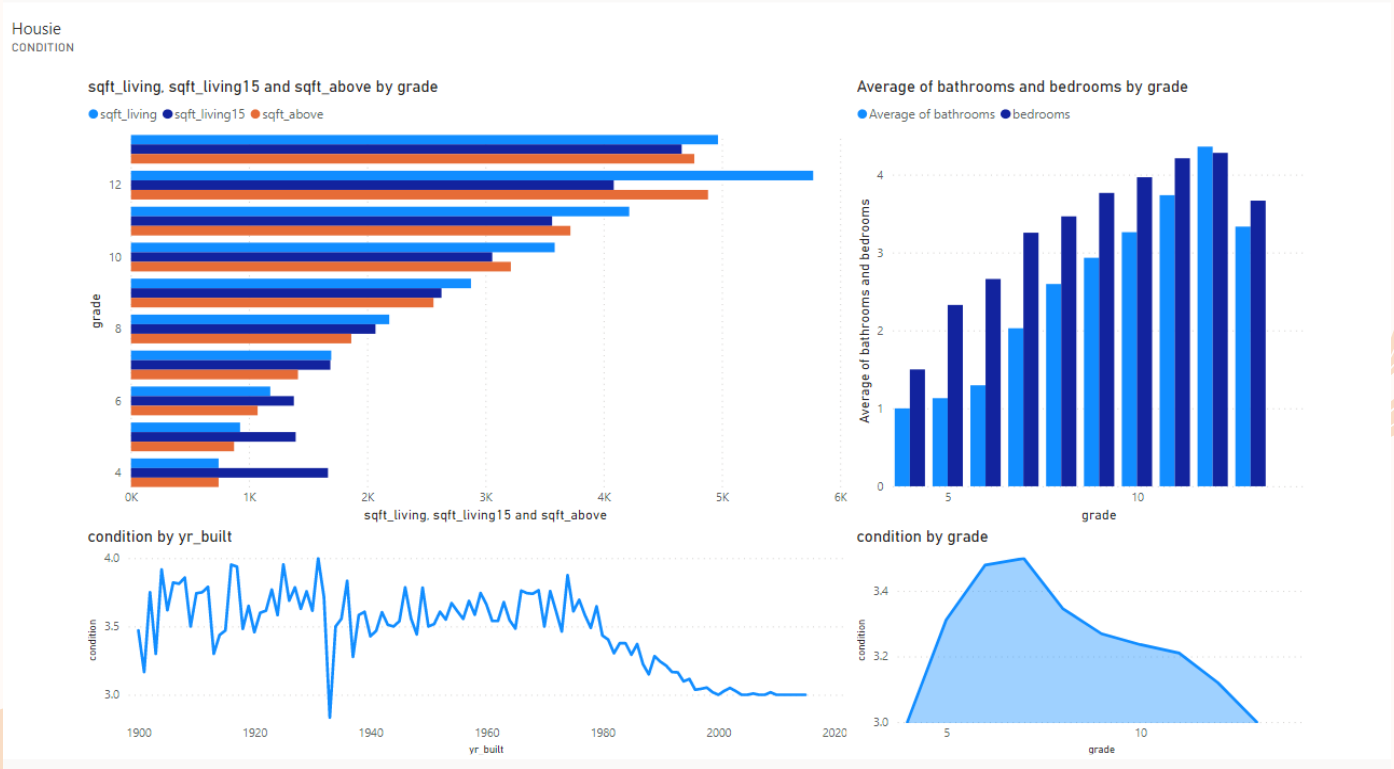
Price by grade

Price by bathroom

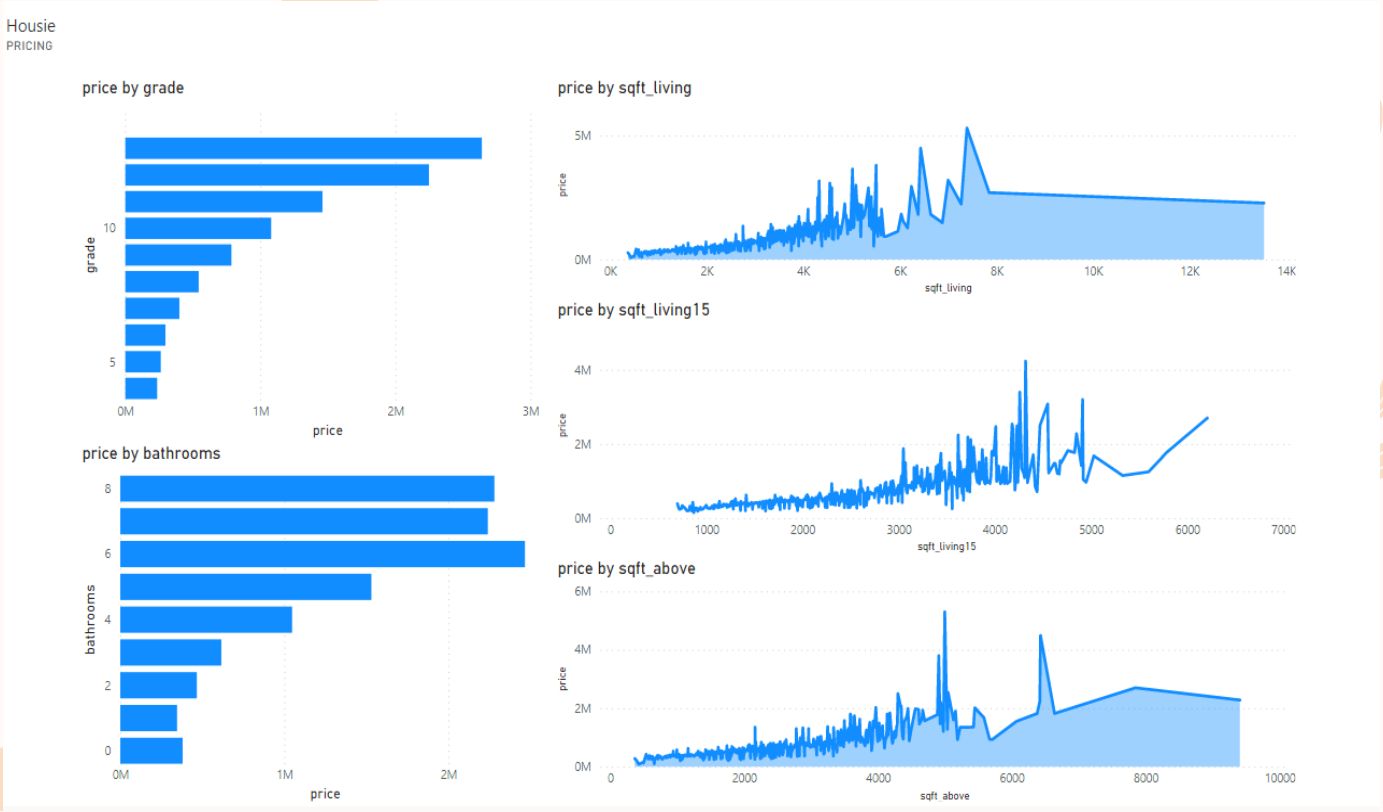
Price by sqft



House Condition



House Pricing



Thank you!

HOUSIE

MariBisnis

Capstone Project

By: Nafisan Nauroti Salsa Bila
DAI-005
Data and Artificial Intelligence
Microsoft