# ACME REAL ESTATE AGENCY

## HOUSING MODEL PROJECT

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# MISSION STATEMENT

- To develop a model that will predict the value of house.
- This will help our clients , either buy or sell a house at a fair price.
- To identify sellers on possible renovations that can be made to increase their profit.

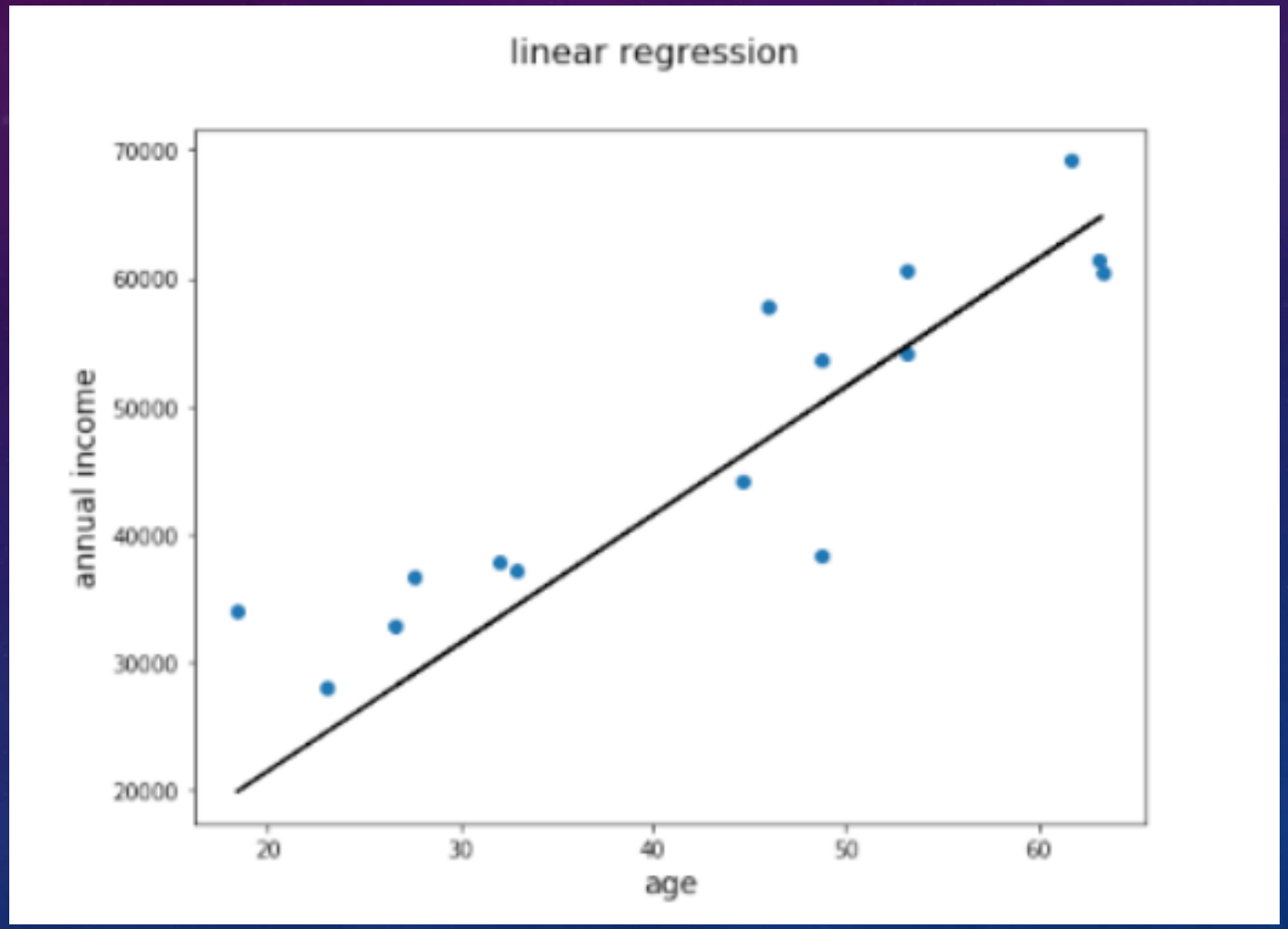
# METHODOLOGY

- **Develop a model using Linear Regression to predict the value of a house based on aforementioned data available.**

- **What is Linear Regression?**

  **An approach to modelling relationship between variables.**

# LINEAR REGRESSION



# LINEAR REGRESSION – PROCESS FLOW

**Dataset**
- Obtain data
- Perform EDA

**Variables**
- Dependent
- Independent

**Linearity**
- Check for existing r'ships between the variables

**Model**
- Build baseline model
- Iterate models to increase efficiency - Employ methods like transformation, scaling etc.

**Validate**
- Metric to define model efficiency

**Conclusions**
- What renovations can be made to improve re-sale value?

# DATASET

- King's County Dataset
- Some of the information available is: price, sqft_living, sqft_lot, condition, grade, yr_renovated etc.

# SELECTING VARIABLES

- For our model, we will select the 'PRICE' of the house as the DEPENDENT variable
- All other variables will be our INDEPENDENT i.e. they will used to predict the price of the house.

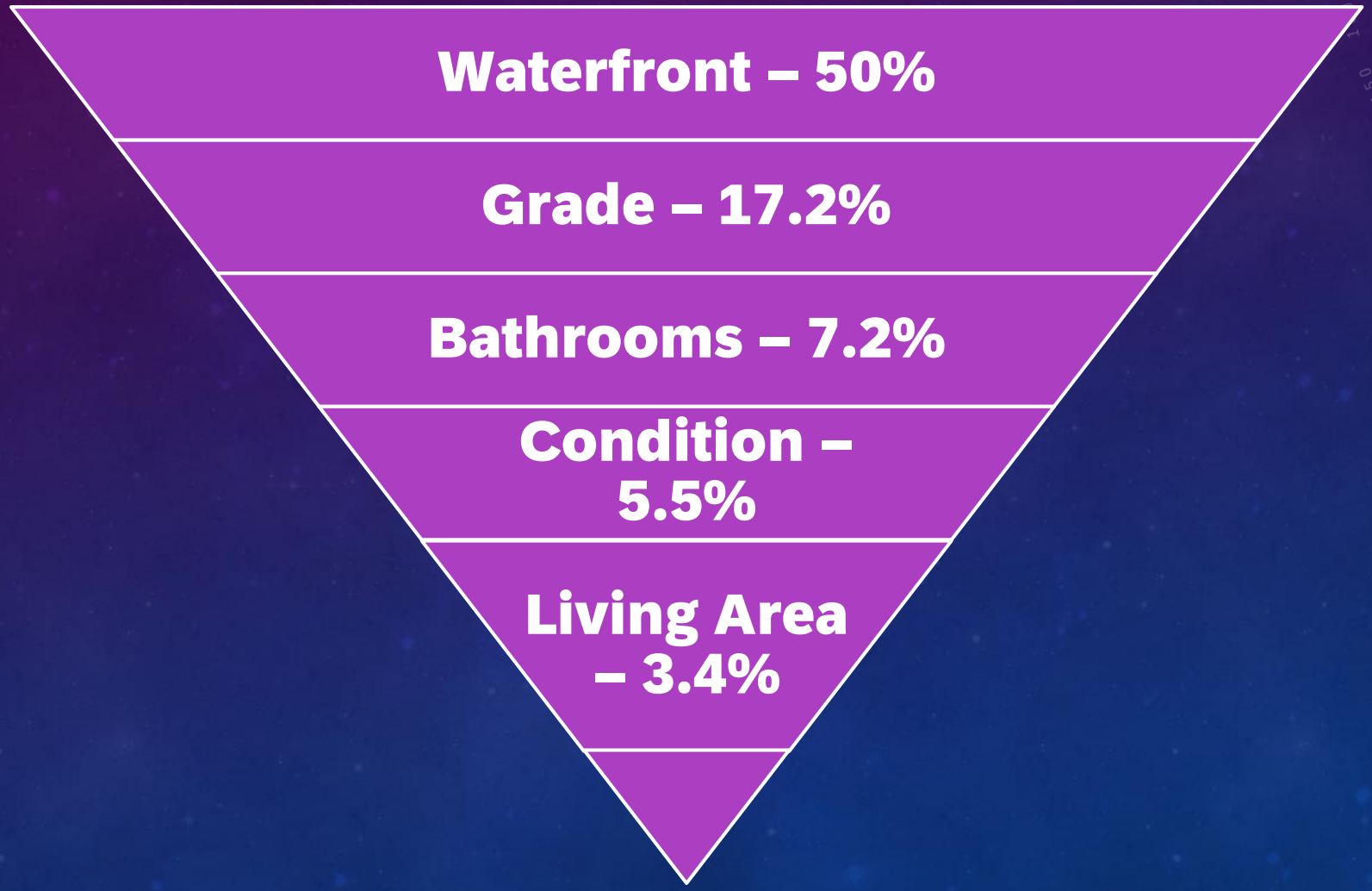
# VALIDATE

- R^2 value know as the co-relation co-efficient will be used as a metric to validate the model.
- Additionally, the Root Mean Square Error (RMSE), which calculates the average difference of the predicted values from the actual values will give us further insight into the accuracy of the model.

# MODEL RESULTS

- R^2 value = 0.77 – 77% of the deviations in the price can be explained by the model.
- RMSE = 184335.57 - The model will be off by $184,335 when predicting the price of a house.

# FACTORS THAT CAN BOOST SELLING PRICE



# CONCLUSIONS

- The model is not very accurate since the predicted values are off by approx. $185,000. Other modelling techniques may yield better results.
- Build quality, number of bathrooms and overall conditions are the biggest factors

# THANK YOU!