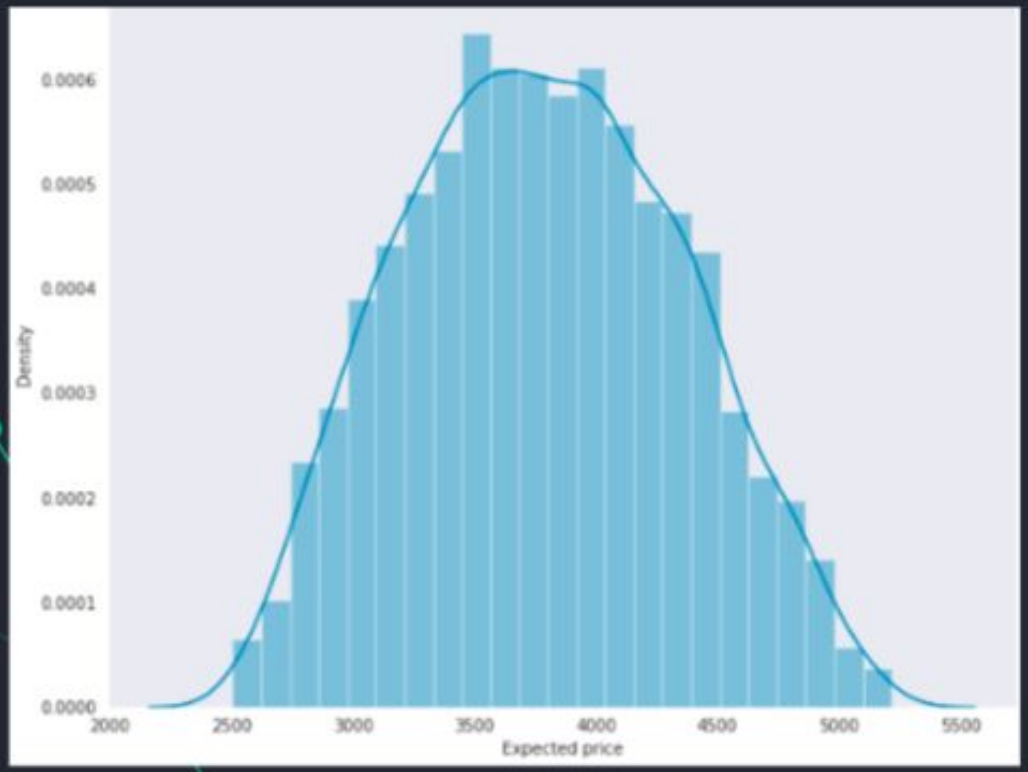
House Grade Prediction

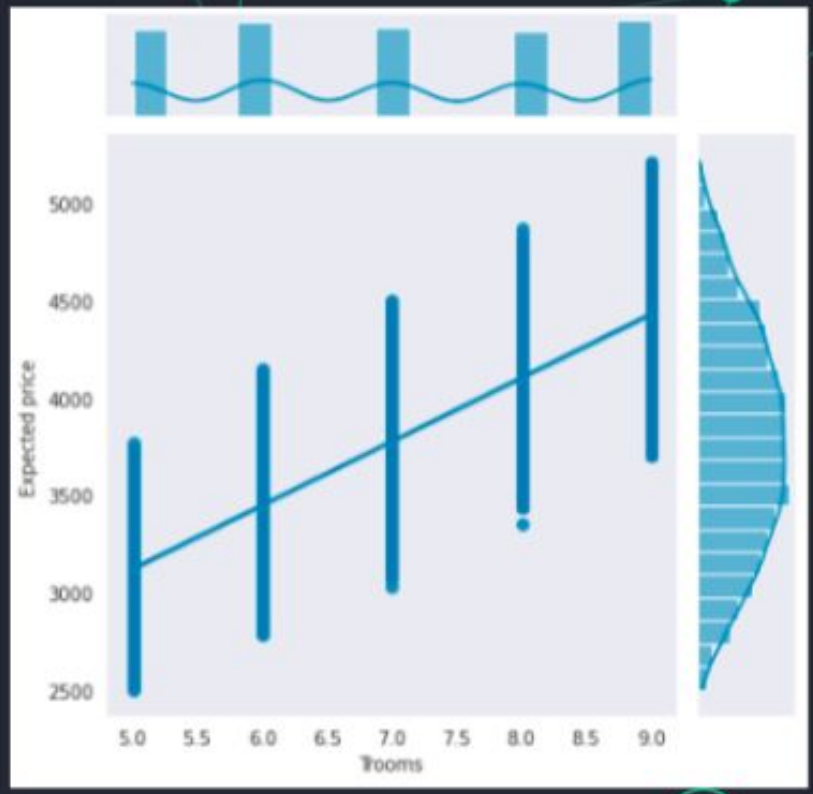
Classification Approach towards House Grade Database

Business Objective

To perform classification and to determine the grade of the houses.

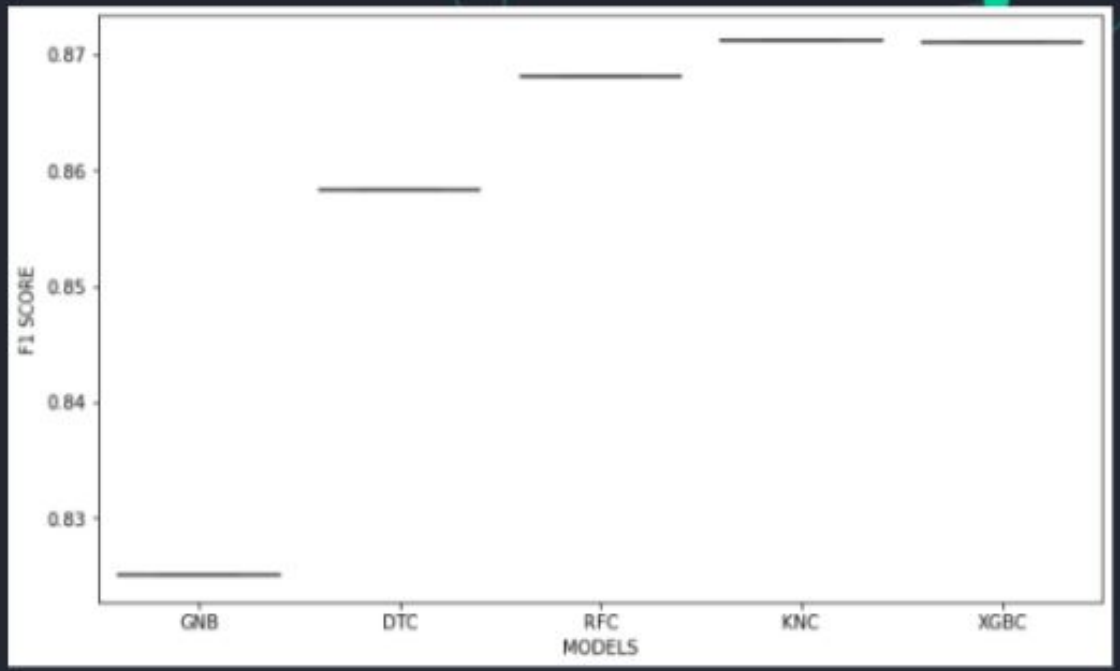
Understanding Cleaned Data





MODEL SELECTION & ALGORITHM COMPARISION

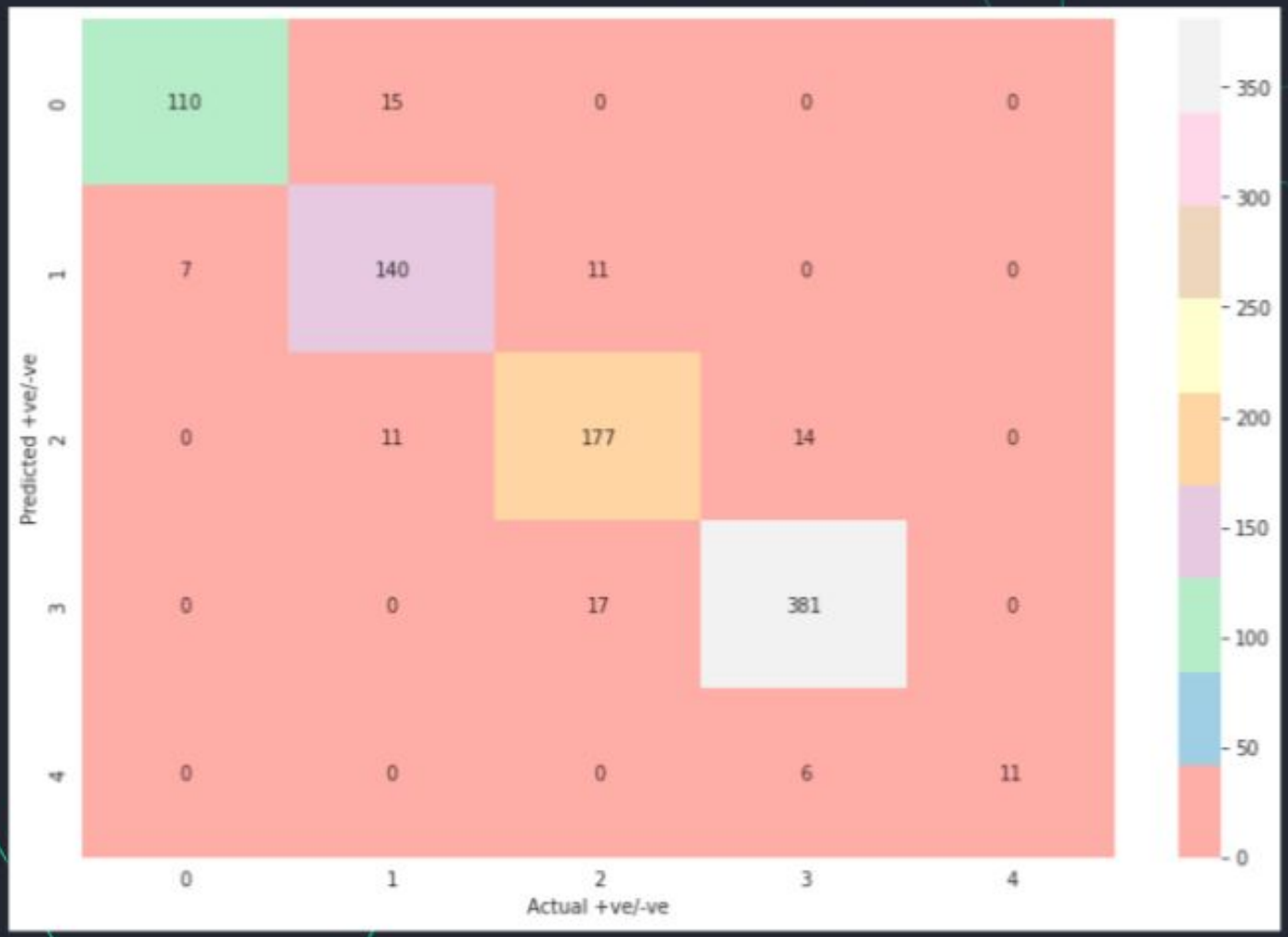
	MODELS	F1 SCORE	PRECISION SCORE
0	GNB	0.825090	0.834403
1	DTC	0.858360	0.860794
2	RFC	0.868137	0.876698
3	KNC	0.871122	0.880199
4	XGBC	0.871101	0.880552



	MODELS	F1 SCORE
0	KNC	0.871122
1	KNC-TUNED	0.909779

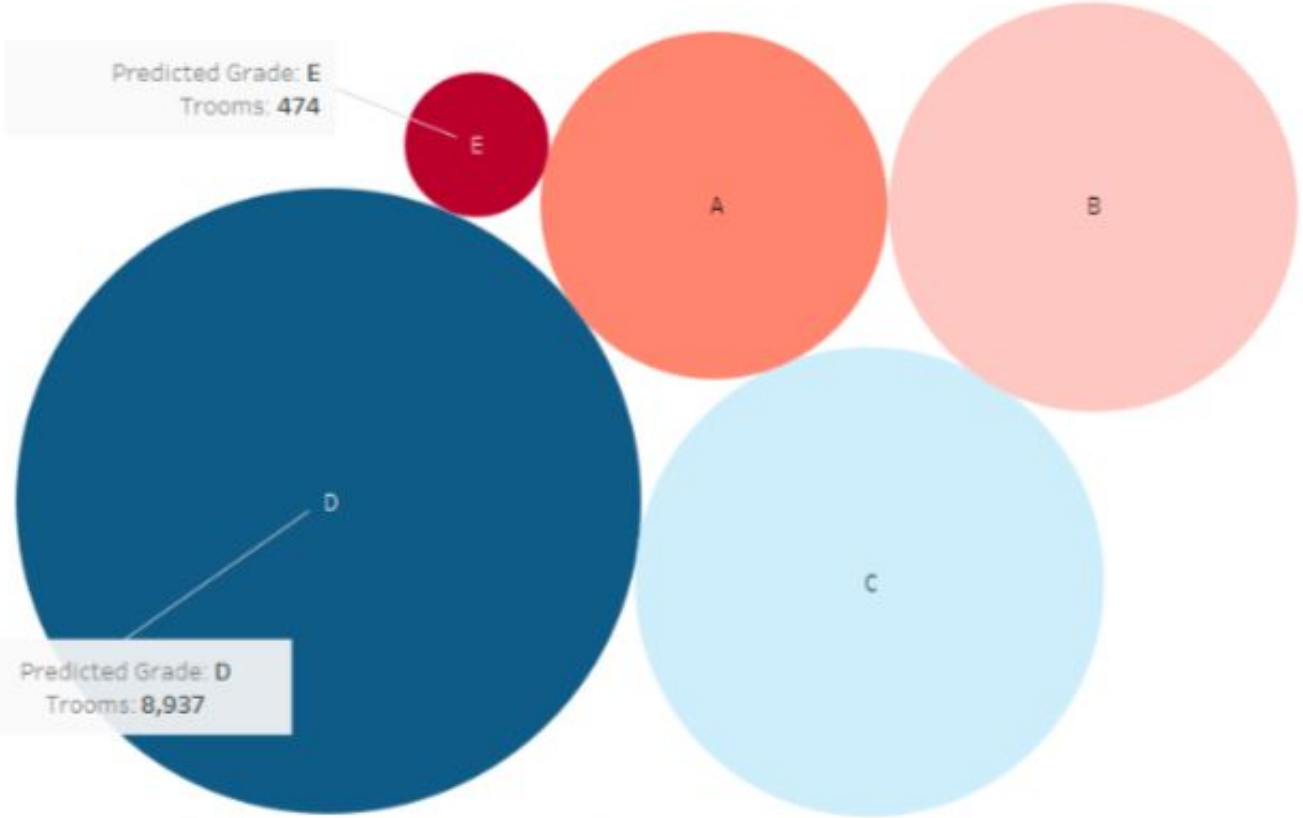
KNeighors Classifiers takes the first spot with F1 score 0f 0.8711, so we choose this model and performed hyperparameter tuning using GridSearchCV. There is a 3.44% increase in model performance after hyperparameter tuning.

CHECKING MODEL PERFORMANCE



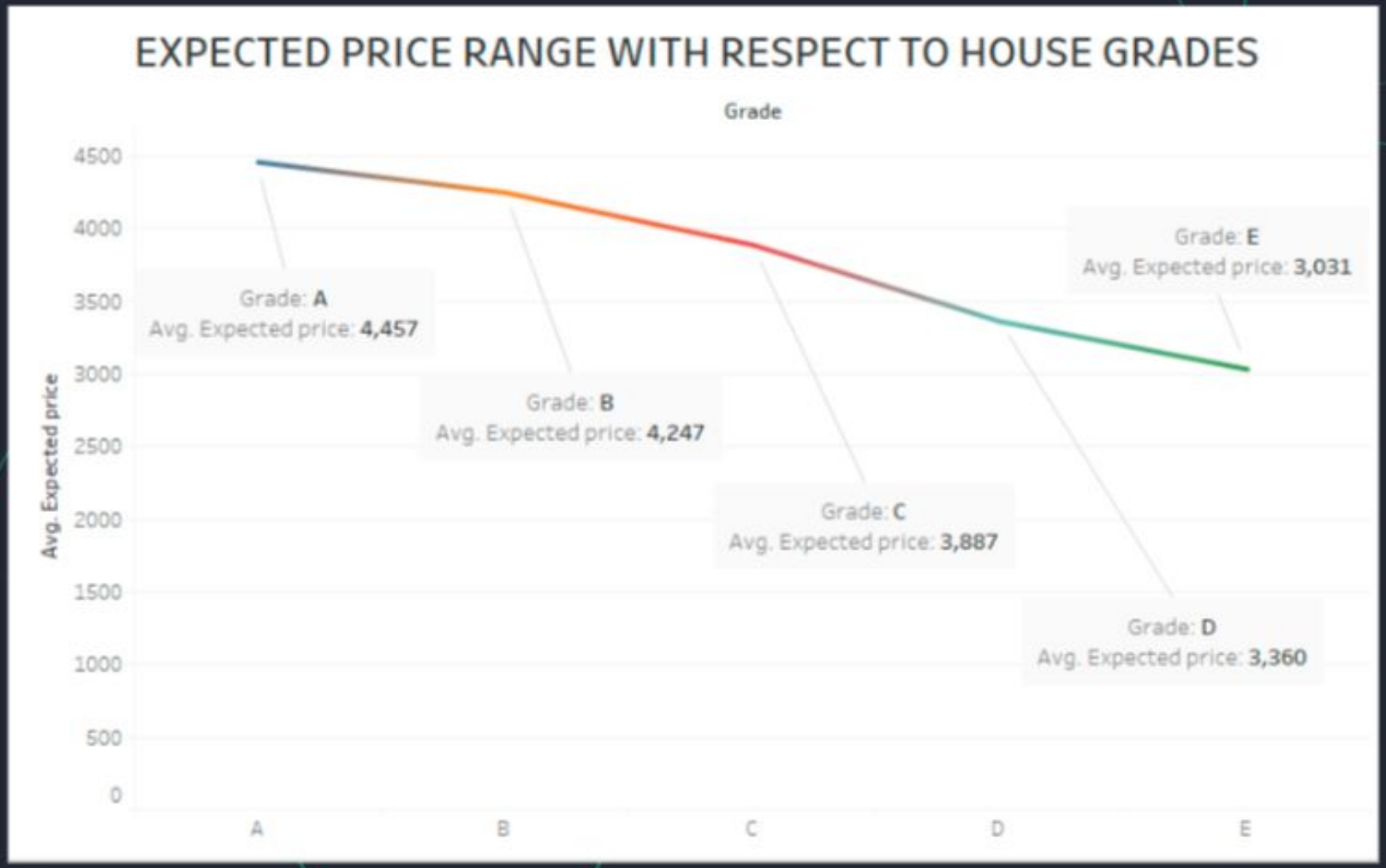
HOUSE GRADE CUSTOMER CRITERIAS

DATA DISTRIBUTION BASED ON PREDICTED HOUSE GRADES



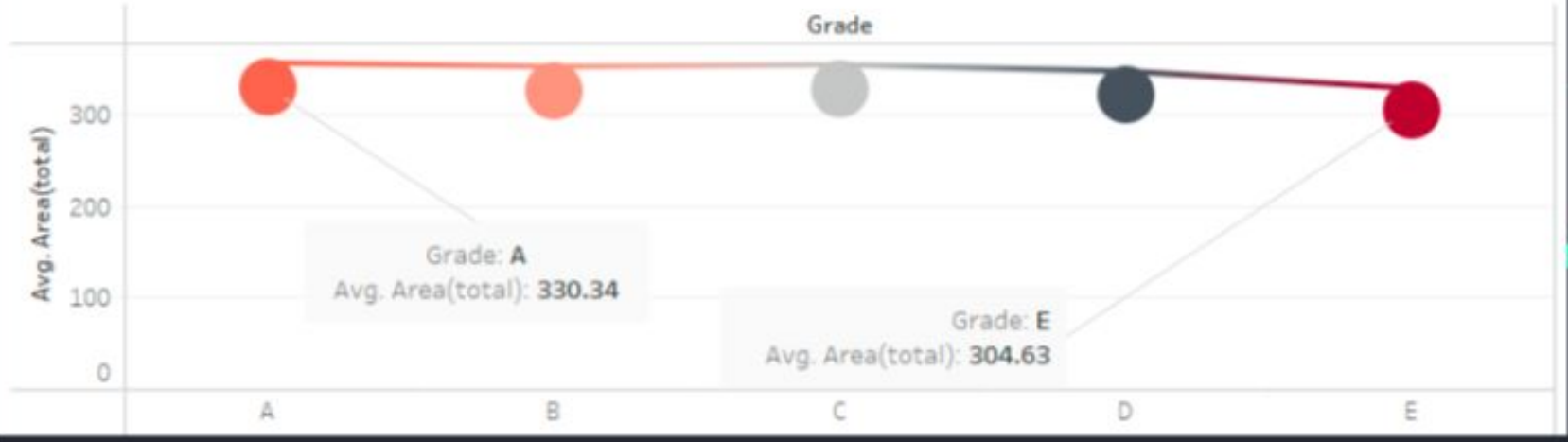
Advising sellers on how they can make their homes more attractive to buyers and get them into better conditions indirectly putting them into better grades.

HOUSE GRADE CUSTOMER CRITERIAS

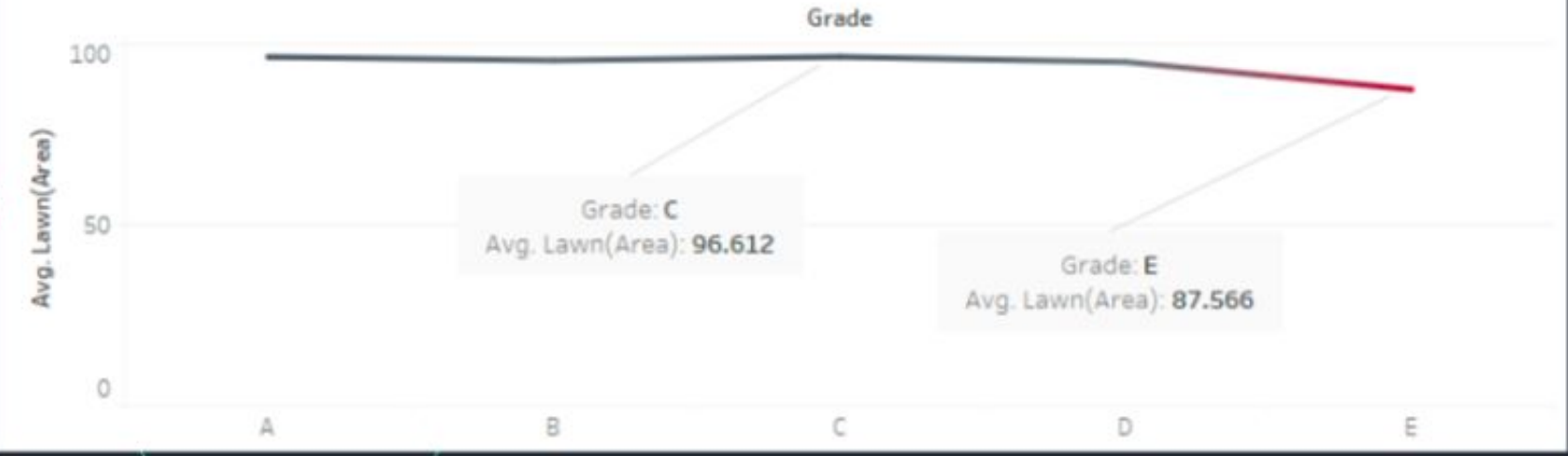


Comparing properties to determine fair and competitive market prices.

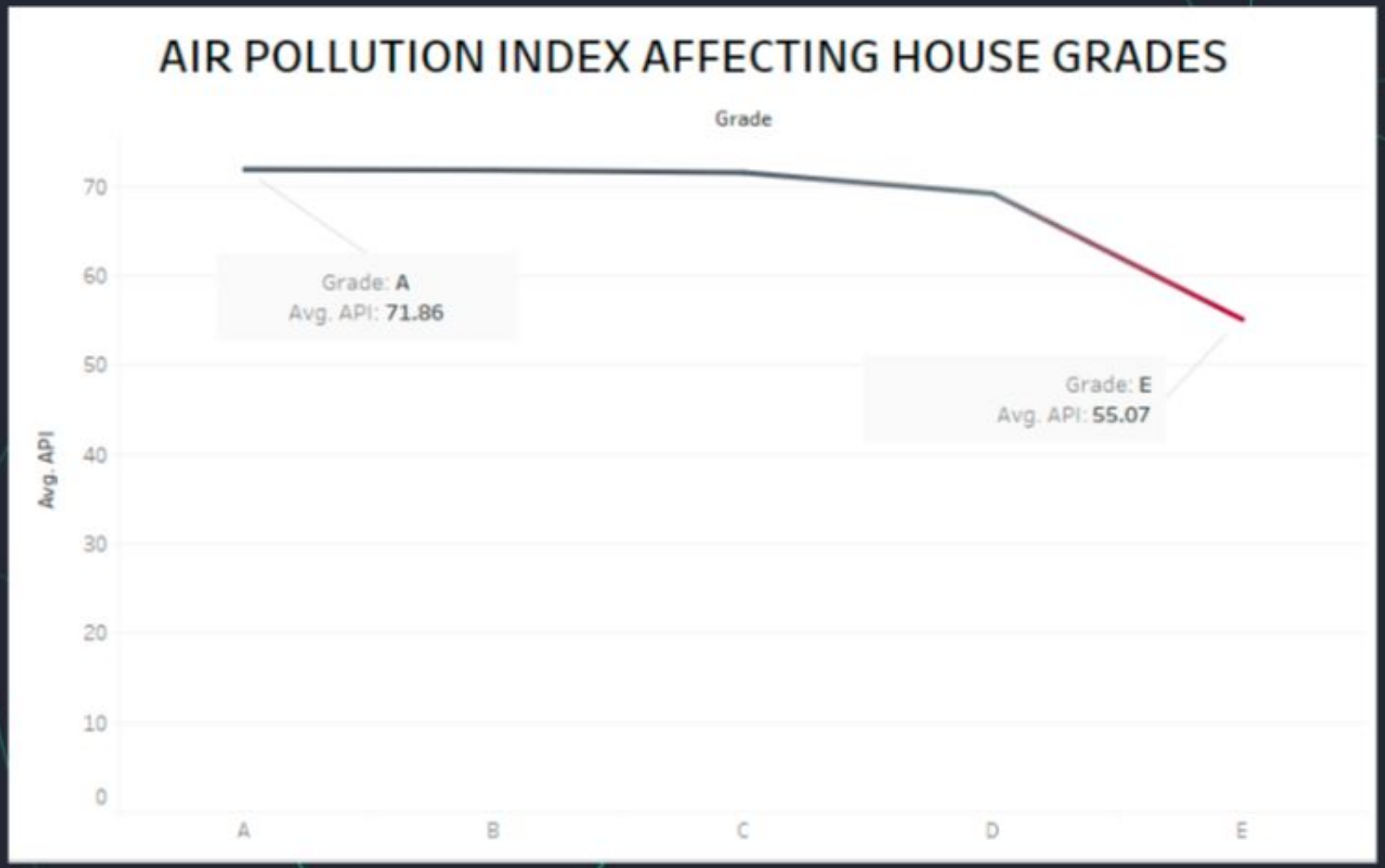
AVERAGE TOTAL AREA WITH RESPECT TO HOUSE GRADE



LAWN AREA AFFECTING HOUSE GRADING POLICIES



HOUSE GRADE CUSTOMER CRITERIAS



Data Analytics make it possible to paint more vivid pictures of a location's future risks and opportunities.

BUSINESS UNDERSTANDING AND PREDICTIONS

1. Successful real estate agents use technology platforms to expand their marketing reach and knowledge base and gather relevant data.
2. Many real estate firms have long made decisions based on a combination of intuition and traditional, retrospective data.
3.Traditional Data for ex: How many shopping complexes are there within 1Km of the house?
4.A successful data-driven approach can yield powerful insights.

	Id	Area(total)	Trooms	Nbedrooms	Nbwashrooms	Twashrooms	roof	Roof(Area)	Lawn(Area)	Nfloors	API	ANB	Expected price	Grade	Predicted_Grade
0	1	339	6	5	4	6	NO	0	76	2	79	6	3481	D	A
1	2	358	5	4	3	4	YES	71	96	3	72	4	3510	D	D
2	3	324	7	5	4	5	YES	101	117	5	64	3	3748	C	B
3	4	330	6	4	3	5	YES	101	82	2	59	2	3134	D	E
4	5	320	7	4	4	5	NO	0	75	3	40	1	3843	D	C

Thank you!

By: Neha J Kotwal