USED CAR PRICE PREDICTION

USING MACHINE LEARNING

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Grid Search (Best Model)

MODEL

- [ ] decision_tree
- [ ] lasso
- [ ] linear_regression
- [ ] Random_forest

Median Best Score (Train Data)

decision_tree
0.81
Best_score

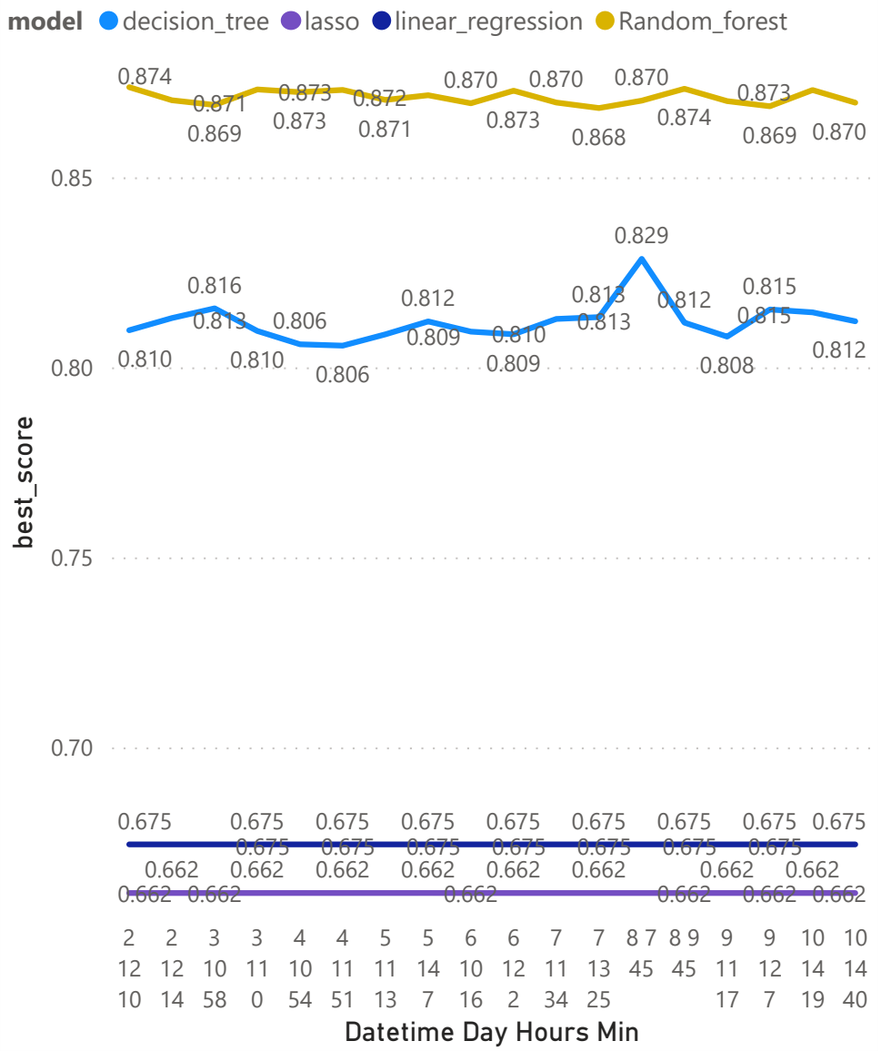
lasso
0.66
Best_score

linear_regression
0.67
Best_score

Random_forest
0.87
Best_score

best_params	best_score	model	Date
{'alpha': 1, 'selection': 'cyclic'}	0.66	lasso	5/2/20
{'criterion': 'friedman_mse', 'max_depth': 10, 'splitter': 'best'}	0.81	decision_tree	5/2/20
{'max_features': 'sqrt', 'n_estimators': 50}	0.87	Random_forest	5/2/20
{'normalize': True}	0.67	linear_regression	5/2/20
{'alpha': 1, 'selection': 'random'}	0.66	lasso	5/2/20
{'criterion': 'mse', 'max_depth': 10, 'splitter': 'random'}	0.81	decision_tree	5/2/20
{'max_features': 'sqrt', 'n_estimators': 50}	0.87	Random_forest	5/2/20
{'normalize': True}	0.67	linear_regression	5/2/20
{'alpha': 1, 'selection': 'cyclic'}	0.66	lasso	5/3/20
{'criterion': 'friedman_mse', 'max_depth': 10, 'splitter': 'best'}	0.82	decision_tree	5/3/20
{'max_features': 'sqrt', 'n_estimators': 50}	0.87	Random_forest	5/3/20
{'normalize': True}	0.67	linear_regression	5/3/20
{'alpha': 1, 'selection': 'cyclic'}	0.66	lasso	5/3/20
{'criterion': 'friedman_mse', 'max_depth': 10, 'splitter': 'best'}	0.81	decision_tree	5/3/20
{'max_features': 'sqrt', 'n_estimators': 50}	0.87	Random_forest	5/3/20
{'normalize': True}	0.67	linear_regression	5/3/20
{'alpha': 1, 'selection': 'random'}	0.66	lasso	5/4/20
{'criterion': 'friedman_mse', 'max_depth': 15, 'splitter': 'random'}	0.81	decision_tree	5/4/20
{'max_features': 'sqrt', 'n_estimators': 60}	0.87	Random_forest	5/4/20
{'normalize': True}	0.67	linear_regression	5/4/20
{'alpha': 1, 'selection': 'cyclic'}	0.66	lasso	5/4/20
{'criterion': 'mse', 'max_depth': 15, 'splitter': 'best'}	0.81	decision_tree	5/4/20
{'max_features': 'sqrt', 'n_estimators': 50}	0.87	Random_forest	5/4/20
{'normalize': True}	0.67	linear_regression	5/4/20
{'alpha': 1, 'selection': 'random'}	0.66	lasso	5/5/20
{'criterion': 'friedman_mse', 'max_depth': 10, 'splitter': 'best'}	0.81	decision_tree	5/5/20

Best Score by Model



Median R Square (Test Data)

0.72
Decision Tree

0.69
Lasso

0.71
Linear Regression

0.91
Random Forest

Parameters -MAE,MSE, R Square and Train Time

MAE -Median

1.48 RFor	2.00 DTree
3.55 Linear	3.71 Lasso

MSE - Median

8.92 RFor	28.64 DTree
29.66 Linear	32.47 Lasso

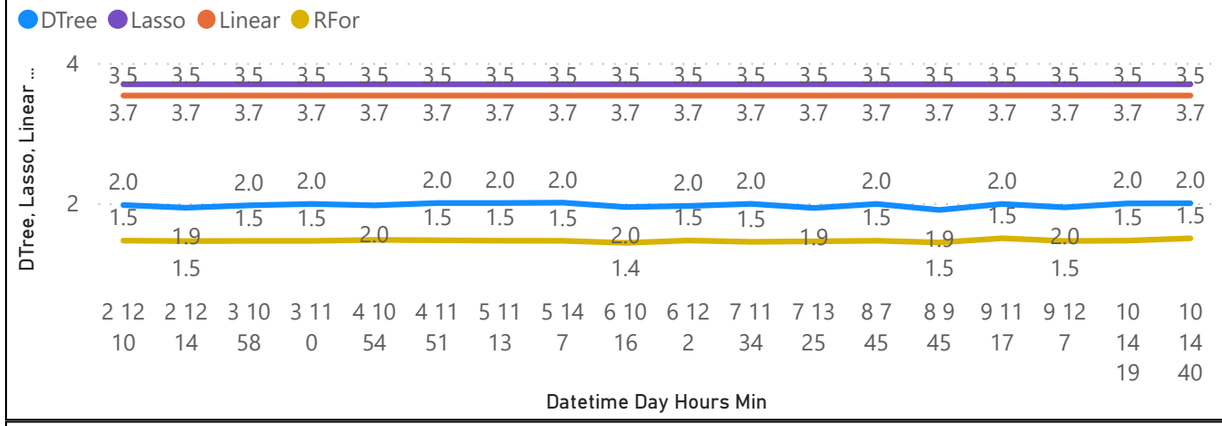
R Square - Median

0.91 RFor	0.72 DTree
0.71 Linear	0.69 Lasso

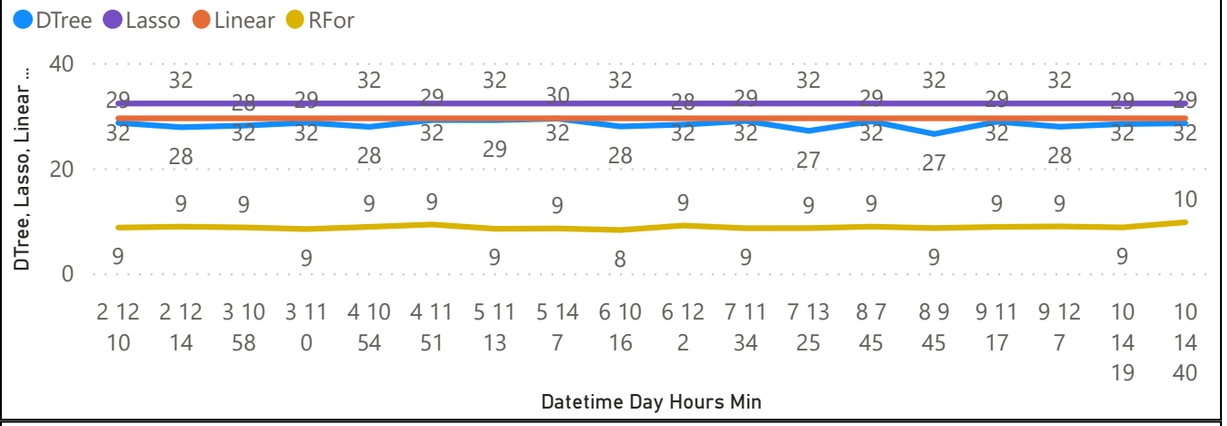
Train Time - Median

0.41 RFor	0.04 DTree
0.02 Lasso	0.01 Linear

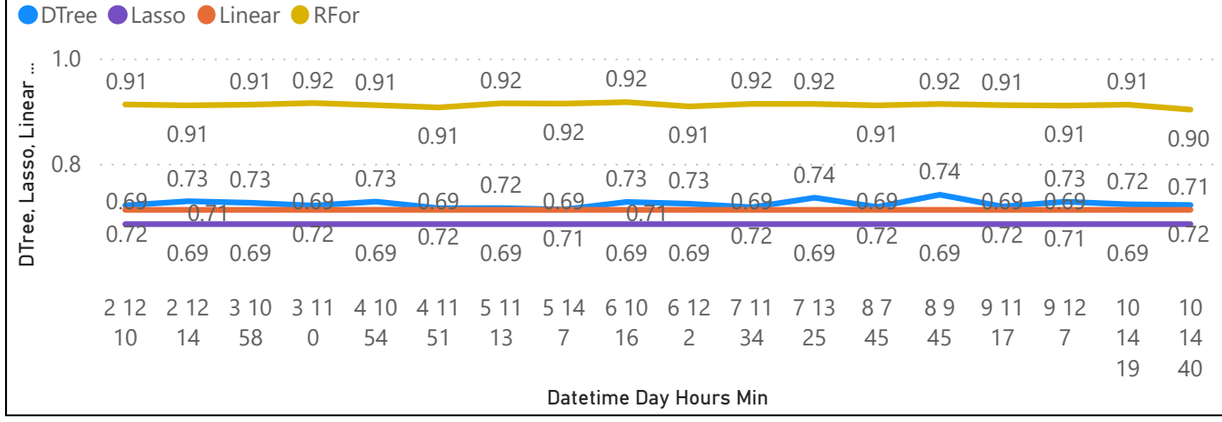
MAE



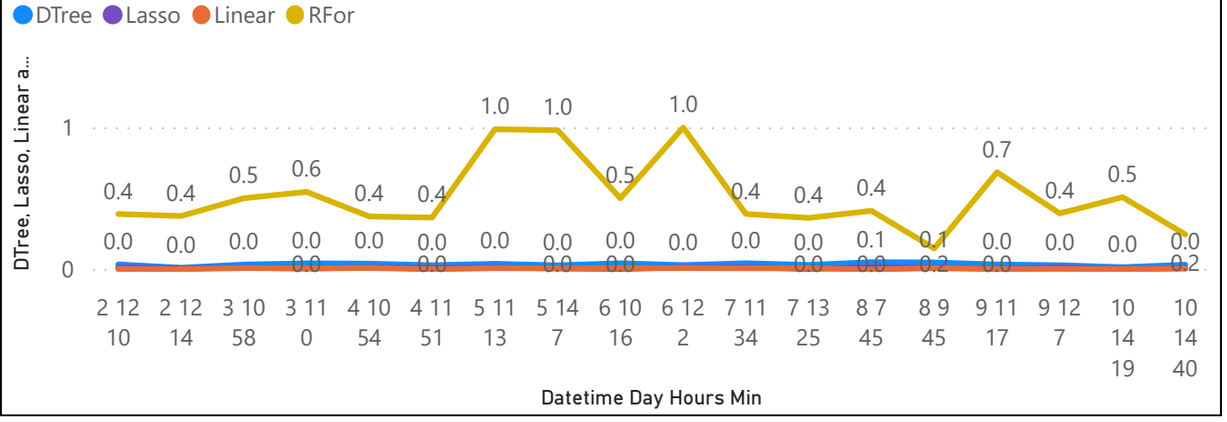
MSE



R Square



Train Time in Secs



Random Predictions

Label

- 0
- 1
- 2
- 3
- 4
- 5

Brand_Name	Label	Fuel_Type	Label	Transmission	Label	Owner_Type	Label
Ambassador	0	CNG	0	Automatic	0	First	0
Audi	1	Diesel	1	Manual	1	Fourth & Above	1
Bentley	3	LPG	3			Third	3
BMW	2	Electric	2			Second	2
Chevrolet	4	Petrol	4				

Median Prediction Value

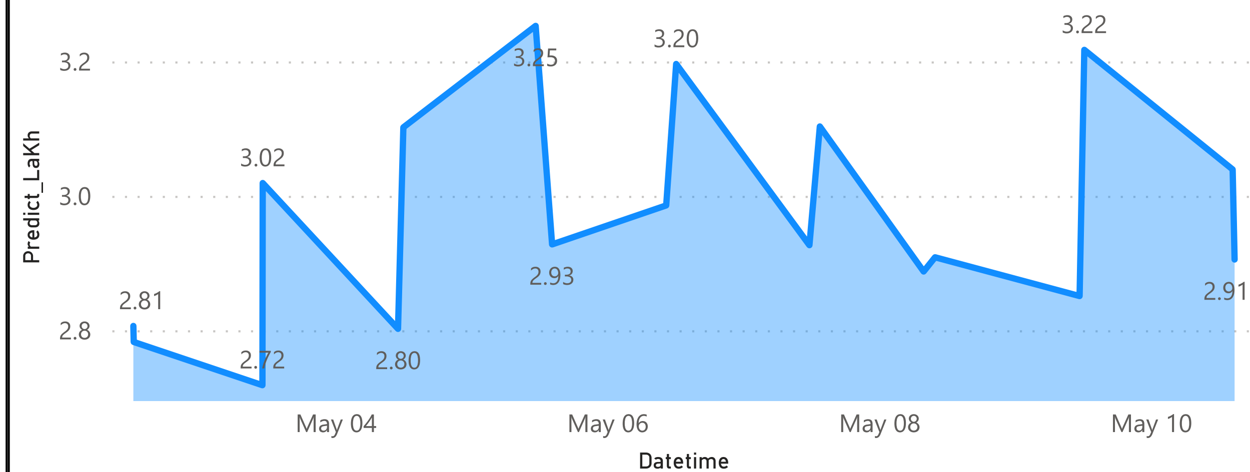
2.93
Prediction_1

2.34
Prediction_2

Prediction 1 - Using Labels

Brand_Name	Year	Engine_CC	Fuel_Type	Km_Driven	Mileage_kmkg	Owner_Type	Power_bhp	Predict_L
17	2015	1000	3	900000	15	0	40	
17	2015	1000	3	900000	15	0	40	
17	2015	1000	3	900000	15	0	40	
17	2015	1000	3	900000	15	0	40	
17	2015	1000	3	900000	15	0	40	
17	2015	1000	3	900000	15	0	40	
17	2015	1000	3	900000	15	0	40	
17	2015	1000	3	900000	15	0	40	
17	2015	1000	3	900000	15	0	40	

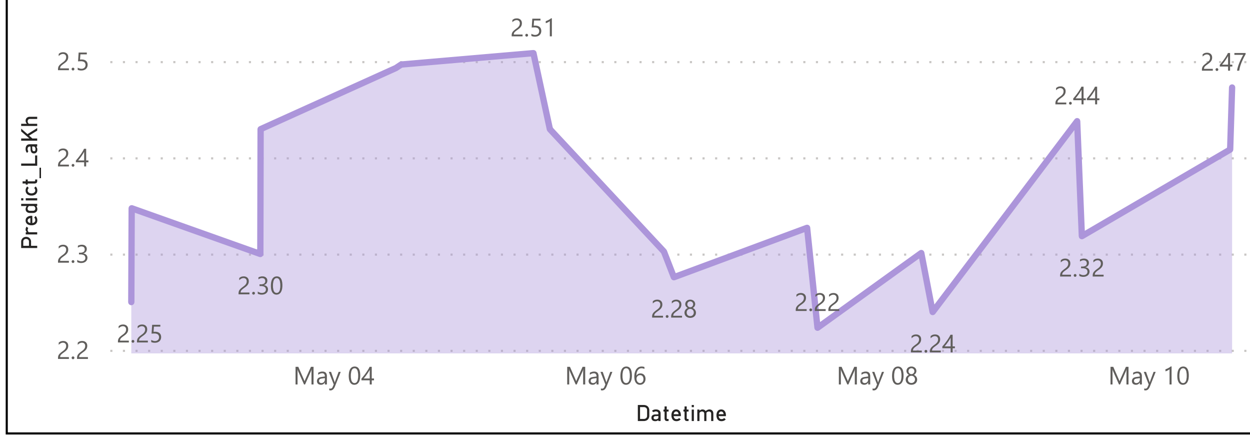
Prediction 1 - Used Car Price (LaKh)



Prediction 2 - Using Values

Brand_Name	Year	Engine_CC	Fuel_Type	Km_Driven	Mileage_kmkg	Owner_Type	Power_bhp
Maruti	2013	1000	LPG	100000	15	First	40
Maruti	2013	1000	LPG	100000	15	First	40
Maruti	2013	1000	LPG	100000	15	First	40
Maruti	2013	1000	LPG	100000	15	First	40
Maruti	2013	1000	LPG	100000	15	First	40
Maruti	2013	1000	LPG	100000	15	First	40
Maruti	2013	1000	LPG	100000	15	First	40
Maruti	2013	1000	LPG	100000	15	First	40

Prediction 2 - Used Car Price (LaKh)



Actual Vs Predicted (Random Forest)