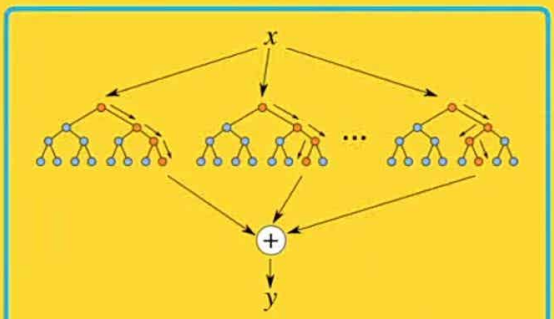
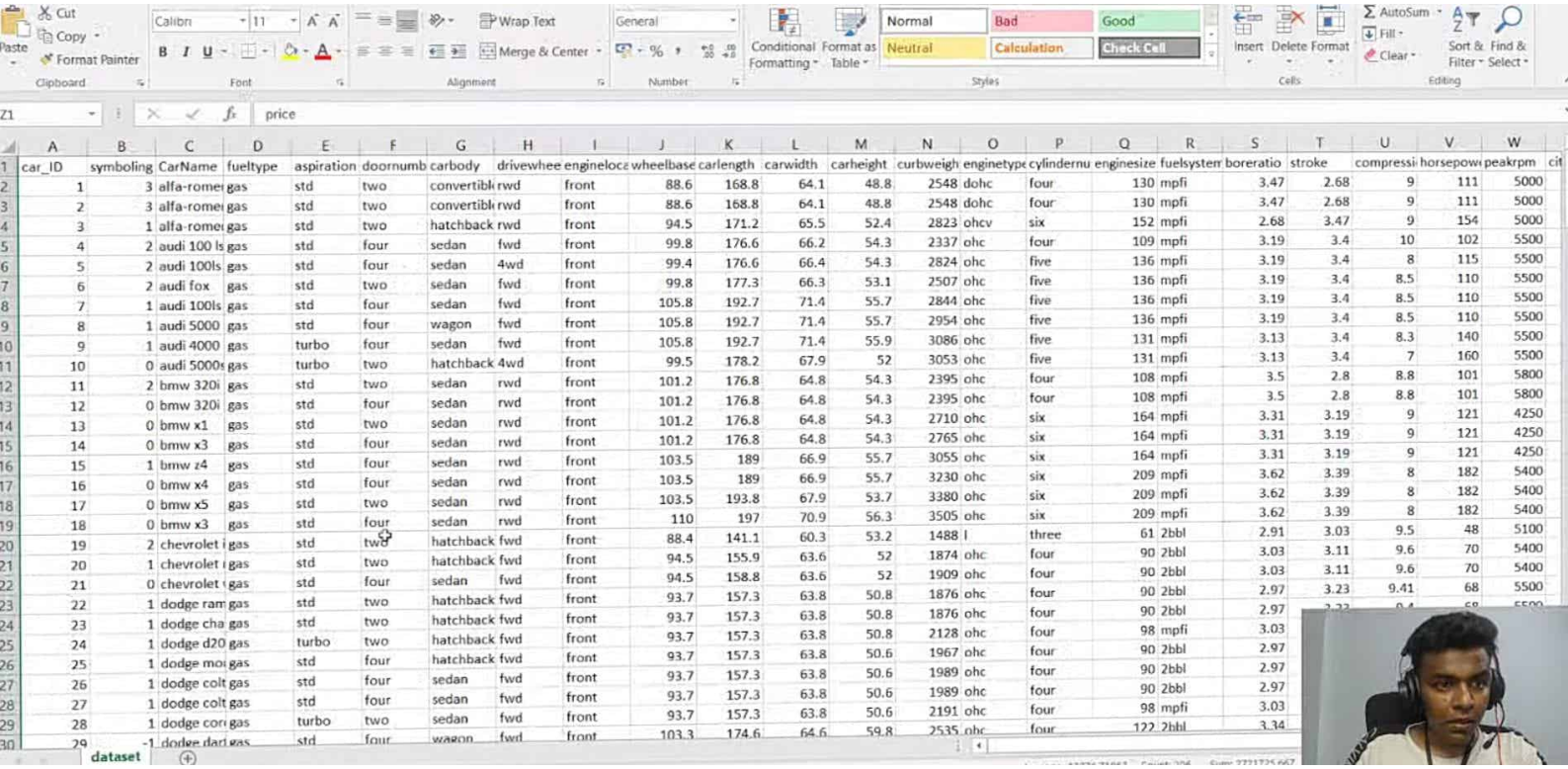
Mind Map Outliner

Topic Subtopic Relationship Summary Boundary Insert ZEN Pitch Panel



Algorithm

RANDOM FOREST



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Bad
Good
Neutral
Calculation
Check Cell
Styles
Insert
Delete
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Cells
AutoSum
Fill
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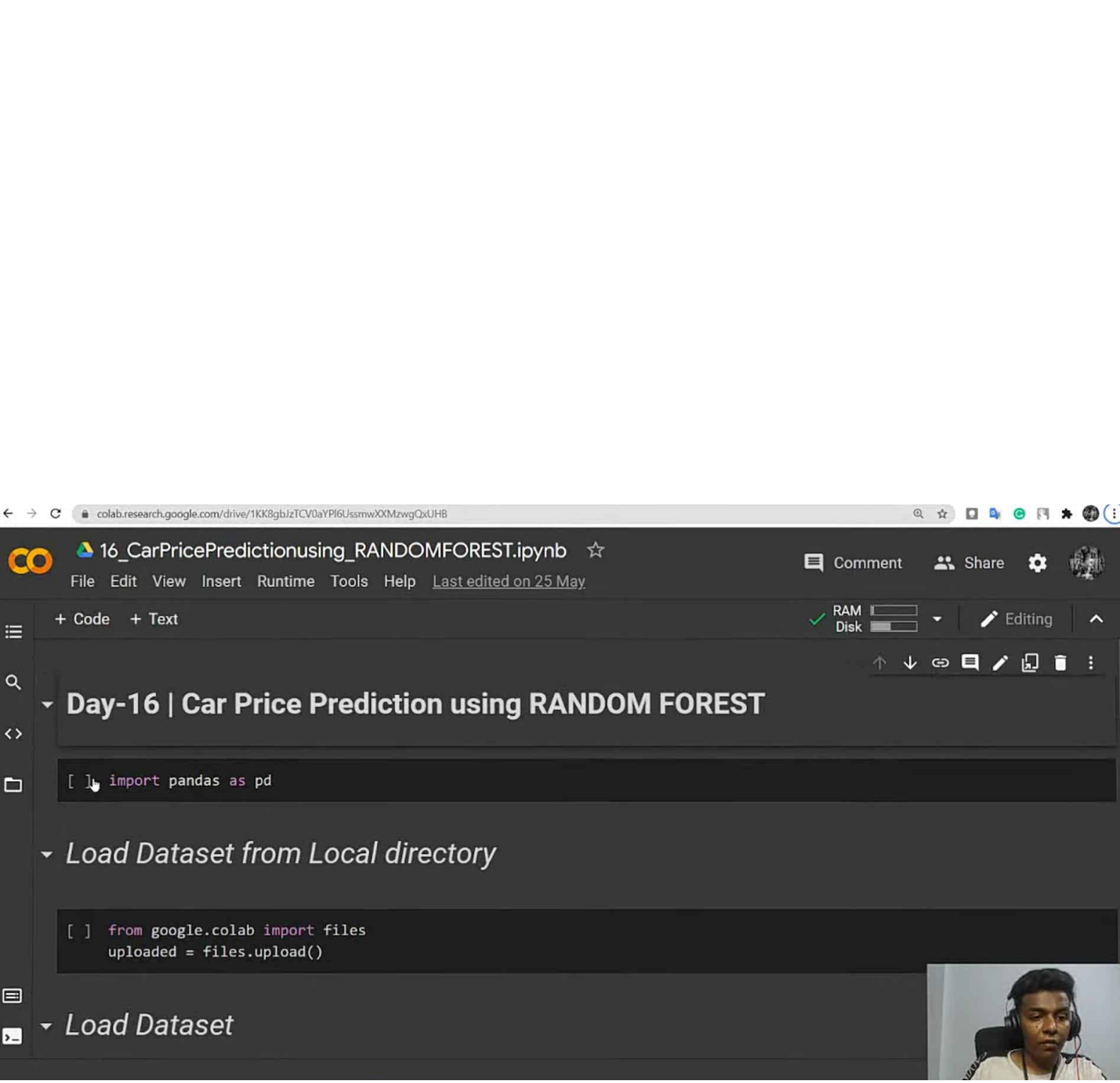
Sort & Filter
Find & Select
Editing
Z1
price

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1	car_ID	symboling	CarName	fueltype	aspiration	doornumb	carbody	drivewhee	engineloca	wheelbase	carlength	carwidth	carheight	curbweigh	enginetype	cylindernu	enginesize	fuelsystem	boreratio	stroke	compressi	horsepow	peakrpm
2	1	3	alfa-romei	gas	std	two	convertibl	rwd	front	88.6	168.8	64.1	48.8	2548	dohc	four	130	mpfi	3.47	2.68	9	111	5000
3	2	3	alfa-romei	gas	std	two	convertibl	rwd	front	88.6	168.8	64.1	48.8	2548	dohc	four	130	mpfi	3.47	2.68	9	111	5000
4	3	1	alfa-romei	gas	std	two	hatchback	rwd	front	94.5	171.2	65.5	52.4	2823	ohcv	six	152	mpfi	2.68	3.47	9	154	5000
5	4	2	audi 100 ls	gas	std	four	sedan	fwd	front	99.8	176.6	66.2	54.3	2337	ohc	four	109	mpfi	3.19	3.4	10	102	5500
6	5	2	audi 100ls	gas	std	four	sedan	4wd	front	99.4	176.6	66.4	54.3	2824	ohc	five	136	mpfi	3.19	3.4	8	115	5500
7	6	2	audi fox	gas	std	two	sedan	fwd	front	99.8	177.3	66.3	53.1	2507	ohc	five	136	mpfi	3.19	3.4	8.5	110	5500
8	7	1	audi 100ls	gas	std	four	sedan	fwd	front	105.8	192.7	71.4	55.7	2844	ohc	five	136	mpfi	3.19	3.4	8.5	110	5500
9	8	1	audi 5000	gas	std	four	wagon	fwd	front	105.8	192.7	71.4	55.7	2954	ohc	five	136	mpfi	3.19	3.4	8.5	110	5500
10	9	1	audi 4000	gas	turbo	four	sedan	fwd	front	105.8	192.7	71.4	55.9	3086	ohc	five	131	mpfi	3.13	3.4	8.3	140	5500
11	10	0	audi 5000s	gas	turbo	two	hatchback	4wd	front	99.5	178.2	67.9	52	3053	ohc	five	131	mpfi	3.13	3.4	7	160	5500
12	11	2	bmw 320i	gas	std	two	sedan	rwd	front	101.2	176.8	64.8	54.3	2395	ohc	four	108	mpfi	3.5	2.8	8.8	101	5800
13	12	0	bmw 320i	gas	std	four	sedan	rwd	front	101.2	176.8	64.8	54.3	2395	ohc	four	108	mpfi	3.5	2.8	8.8	101	5800
14	13	0	bmw x1	gas	std	two	sedan	rwd	front	101.2	176.8	64.8	54.3	2710	ohc	six	164	mpfi	3.31	3.19	9	121	4250
15	14	0	bmw x3	gas	std	four	sedan	rwd	front	101.2	176.8	64.8	54.3	2765	ohc	six	164	mpfi	3.31	3.19	9	121	4250
16	15	1	bmw z4	gas	std	four	sedan	rwd	front	103.5	189	66.9	55.7	3055	ohc	six	164	mpfi	3.31	3.19	9	121	4250
17	16	0	bmw x4	gas	std	four	sedan	rwd	front	103.5	189	66.9	55.7	3230	ohc	six	209	mpfi	3.62	3.39	8	182	5400
18	17	0	bmw x5	gas	std	two	sedan	rwd	front	103.5	193.8	67.9	53.7	3380	ohc	six	209	mpfi	3.62	3.39	8	182	5400
19	18	0	bmw x3	gas	std	four	sedan	rwd	front	110	197	70.9	56.3	3505	ohc	six	209	mpfi	3.62	3.39	8	182	5400
20	19	2	chevrolet i	gas	std	two	hatchback	fwd	front	88.4	141.1	60.3	53.2	1488	l	three	61	2bbl	2.91	3.03	9.5	48	5100
21	20	1	chevrolet i	gas	std	two	hatchback	fwd	front	94.5	155.9	63.6	52	1874	ohc	four	90	2bbl	3.03	3.11	9.6	70	5400
22	21	0	chevrolet i	gas	std	four	sedan	fwd	front	94.5	158.8	63.6	52	1909	ohc	four	90	2bbl	3.03	3.11	9.6	70	5400
23	22	1	dodge ram	gas	std	two	hatchback	fwd	front	93.7	157.3	63.8	50.8	1876	ohc	four	90	2bbl	2.97	3.23	9.41	68	5500
24	23	1	dodge cha	gas	std	two	hatchback	fwd	front	93.7	157.3	63.8	50.8	1876	ohc	four	90	2bbl	2.97	3.23	9.4	68	5500
25	24	1	dodge d20	gas	turbo	two	hatchback	fwd	front	93.7	157.3	63.8	50.8	2128	ohc	four	98	mpfi	3.03	3.39	9.6	102	5500
26	25	1	dodge mo	gas	std	four	hatchback	fwd	front	93.7	157.3	63.8	50.6	1967	ohc	four	90	2bbl	2.97	3.23	9.4	68	5500
27	26	1	dodge colt	gas	std	four	sedan	fwd	front	93.7	157.3	63.8	50.6	1989	ohc	four	90	2bbl	2.97	3.23	9.4	68	5500
28	27	1	dodge colt	gas	std	four	sedan	fwd	front	93.7	157.3	63.8	50.6	1989	ohc	four	90	2bbl	2.97	3.23	9.4	68	5500
29	28	1	dodge cor	gas	turbo	two	sedan	fwd	front	93.7	157.3	63.8	50.6	2191	ohc	four	98	mpfi	3.03	3.39	9.6	102	5500
30	29	-1	dodge dar	gas	std	four	wagon	fwd	front	103.3	174.6	64.6	59.8	2535	ohc	four	122	2bbl	3.34	3.46	8.5	88	5000

dataset


colab.research.google.com/drive/1KK8gbJzTCV0aYPl6UssmwXXMzwgQxUHB
16_CarPricePredictionusing_RANDOMFOREST.ipynb
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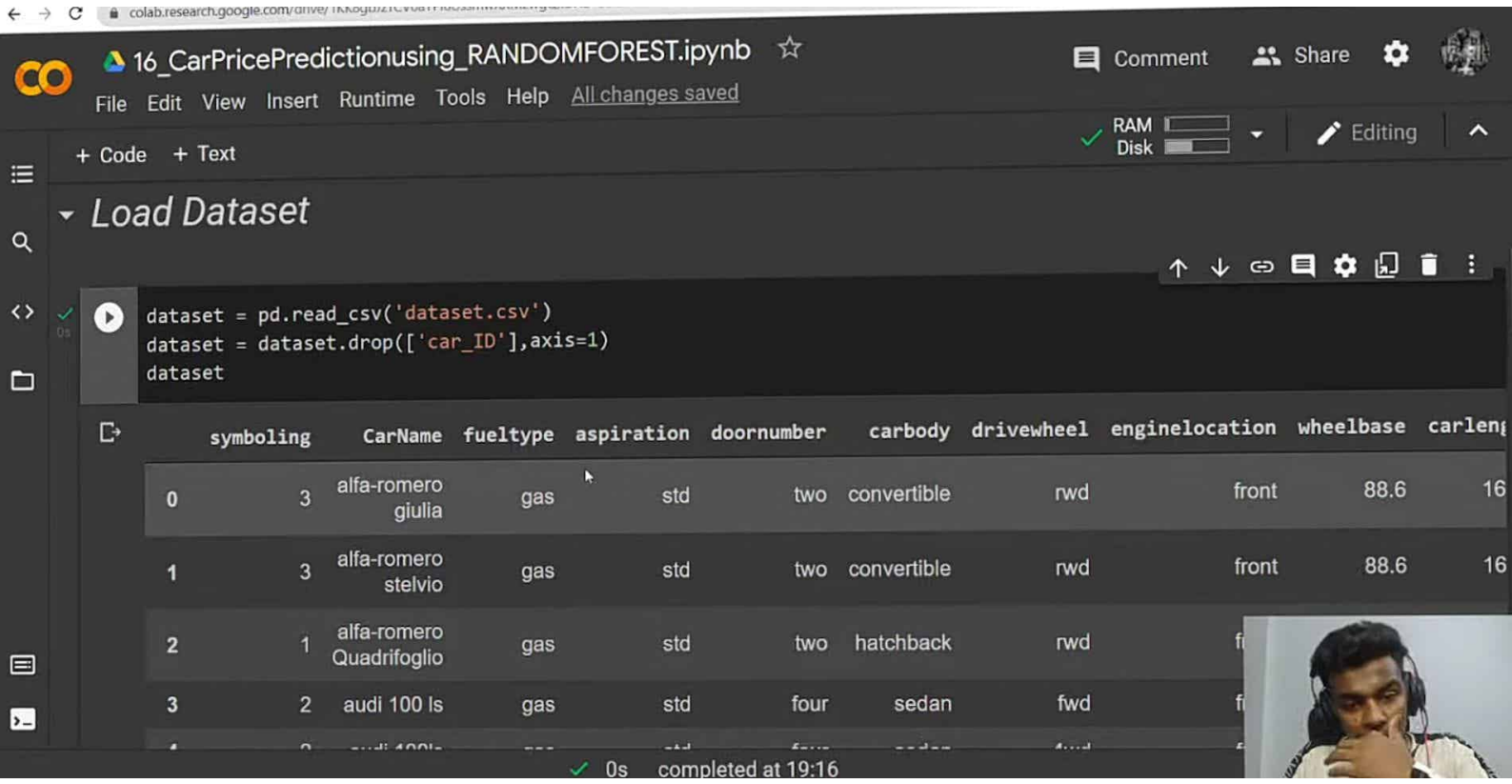
Day-16 | Car Price Prediction using RANDOM FOREST
[ ] import pandas as pd
Load Dataset from Local directory
[ ] from google.colab import files
uploaded = files.upload()
Load Dataset



	symboling	CarName	fueltype	aspiration	doornumber	carbody	drivewheel	enginelocation	wheelbase	carleng
0	3	alfa-romero giulia	gas	std	two	convertible	rwd	front	88.6	16
1	3	alfa-romero stelvio	gas	std	two	convertible	rwd	front	88.6	16
2	1	alfa-romero Quadrifoglio	gas	std	two	hatchback	rwd	f		
3	2	audi 100 ls	gas	std	four	sedan	fwd	f		

16_CarPricePredictionusing_RAN

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16_CarPricePredictionusing_RANDOMFOREST.ipynb

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[4]

205 rows × 25 columns

Summarize Dataset

```
print(dataset.shape)
print(dataset.head(5))
```

```
(205, 25)
   symboling                CarName fueltype  ... citympg highwaympg    price
0          3        alfa-romero giulia      gas  ...      21         27  13495.0
1          3       alfa-romero stelvio      gas  ...      21         27  16500.0
2          1  alfa-romero Quadrifoglio      gas  ...      19         26  16500.0
3          2              audi 100 ls      gas  ...      24         30  13950.0
4          2               audi 100ls      gas  ...      18         22  17450.0

[5 rows x 25 columns]
```

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```
[5 rows x 25 columns]
```

Splitting Dataset into X & Y

This X contains Both Numerical & Text Data

```
Xdata = dataset.drop('price',axis='columns')
numericalCols=Xdata.select_dtypes(exclude=['object']).columns
X=Xdata[numericalCols]
X
```

```
Y = dataset['price']
Y
```

Scaling the Independent Variables (Features)

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Scaling the Independent Variables (Features)

```
from sklearn.preprocessing import scale
cols = X.columns
X = pd.DataFrame(scale(X))
X.columns = cols
X
```

Splitting Dataset into Train & Test

```
[ ] from sklearn.model_selection import train_test_split
    x_train,x_test,y_train,y_test = train_test_split(X,Y,test_size=0.20,random_state=0)
```

Training using Random Forest

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Splitting Dataset into Train & Test

```
[9] from sklearn.model_selection import train_test_split
    x_train,x_test,y_train,y_test = train_test_split(X,Y,test_size=0.20,random_state=0)
```

Training using Random Forest

```
from sklearn.ensemble import RandomForestRegressor
model = RandomForestRegressor()
model.fit(x_train, y_train)
```

```
RandomForestRegressor(bootstrap=True, ccp_alpha=0.0, criterion='mse',
                      max_depth=None, max_features='auto', max_leaf_nodes=None,
                      max_samples=None, min_impurity_decrease=0.0,
                      min_impurity_split=None, min_samples_leaf=1,
                      min_samples_split=2, min_weight_fraction_leaf=0.0,
                      n_estimators=100, n_jobs=None, oob_score=False,
```

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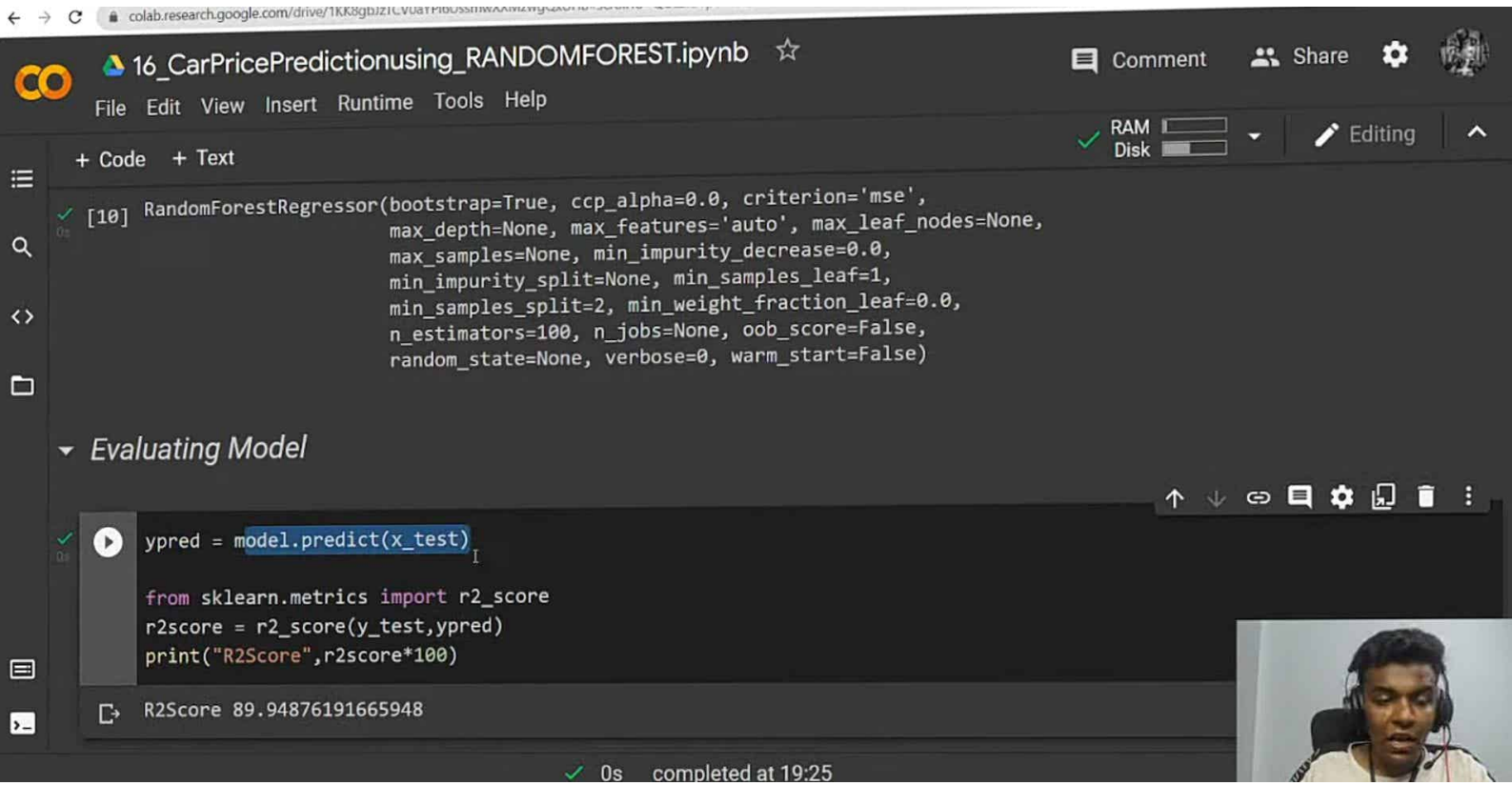
16_CarPricePredictionusing_RANDOMFOREST.ipynb
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[10] RandomForestRegressor(bootstrap=True, ccp_alpha=0.0, criterion='mse',
max_depth=None, max_features='auto', max_leaf_nodes=None,
max_samples=None, min_impurity_decrease=0.0,
min_impurity_split=None, min_samples_leaf=1,
min_samples_split=2, min_weight_fraction_leaf=0.0,
n_estimators=100, n_jobs=None, oob_score=False,
random_state=None, verbose=0, warm_start=False)
Evaluating Model
ypred = model.predict(x_test)
from sklearn.metrics import r2_score
r2score = r2_score(y_test,ypred)
print("R2Score",r2score*100)
R2Score 89.94876191665948
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