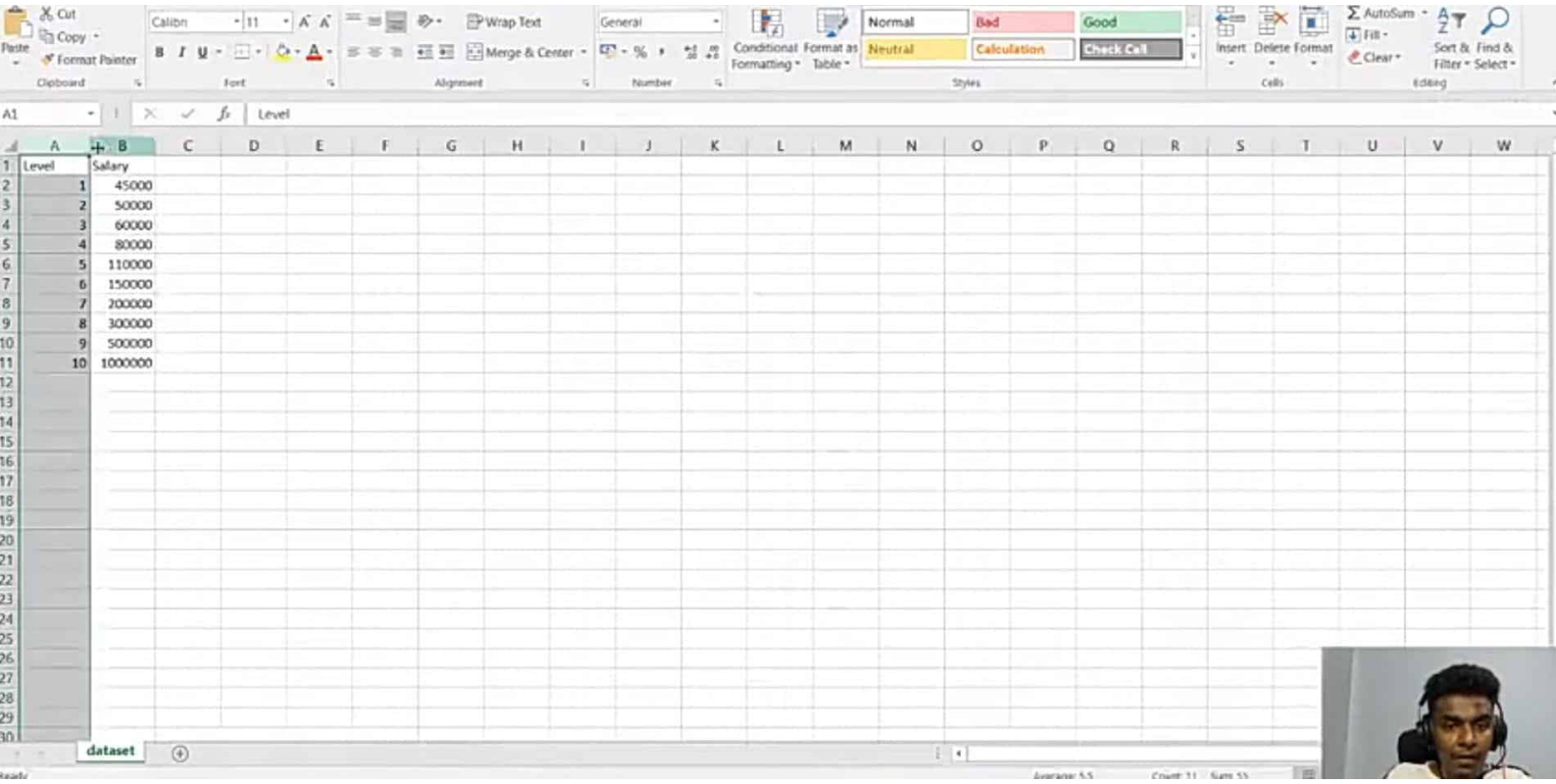
Cut
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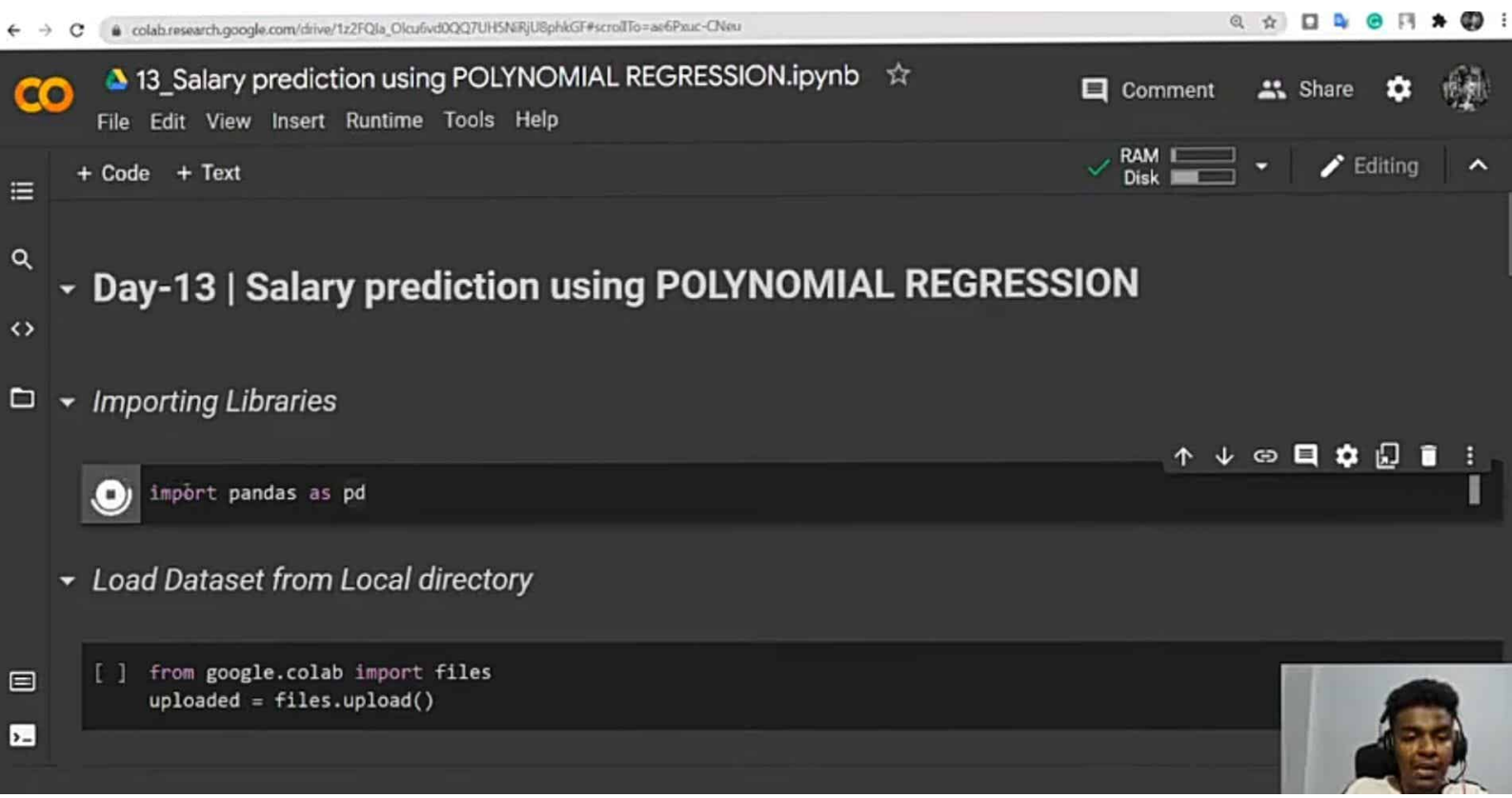
Conditional Formatting
Format as Table
Normal
Bad
Good
Neutral
Calculation
Check Cell
Styles
Insert
Delete
Format
Cells
AutoSum
Fill
Clear
Sort & Filter
Find & Select
Editing
A1
Level
Level
Salary
1 45000
2 50000
3 60000
4 80000
5 110000
6 150000
7 200000
8 300000
9 500000
10 1000000
dataset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13_Salary prediction using POLYNOMIAL REGRESSION.ipynb
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Day-13 | Salary prediction using POLYNOMIAL REGRESSION
Importing Libraries
import pandas as pd
Load Dataset from Local directory
[ ] from google.colab import files
uploaded = files.upload()

colab.research.google.com/drive/1z2FQla_Olcu6vd0QQ7UH5NiRjU8phkGF#scrollTo=zxBak91bI2yh

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```
dataset = pd.read_csv('dataset.csv')
```

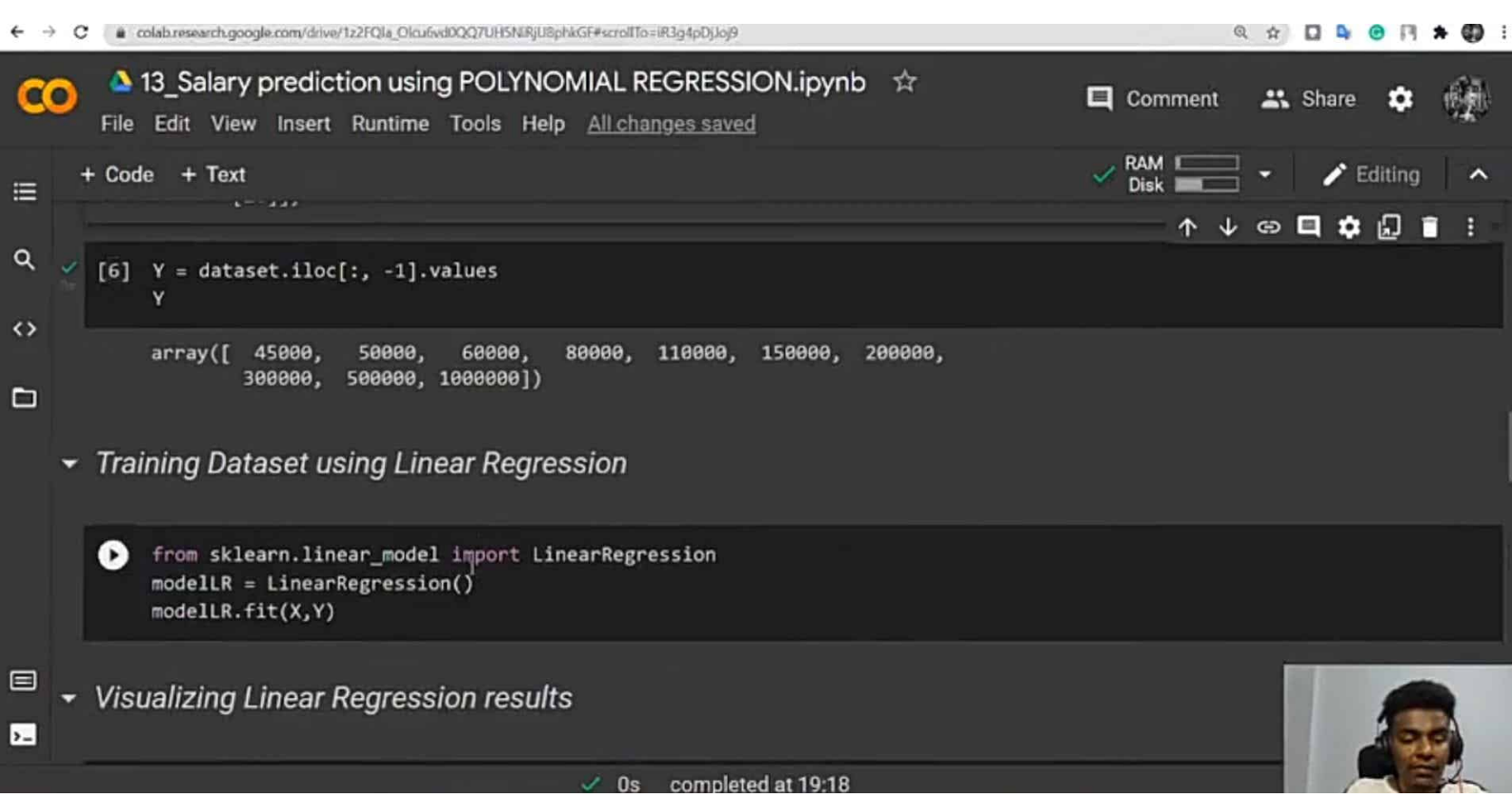
Summarize Dataset

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

Segregate Dataset into Input X & Output Y

```
[ ] X = dataset.iloc[:, :-1].values
    X
```

0s completed at 19:17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[6] Y = dataset.iloc[:, -1].values
Y
array([45000, 50000, 60000, 80000, 110000, 150000, 200000,
300000, 500000, 1000000])
Training Dataset using Linear Regression
from sklearn.linear_model import LinearRegression
modelLR = LinearRegression()
modelLR.fit(X,Y)
Visualizing Linear Regression results
0s completed at 19:18

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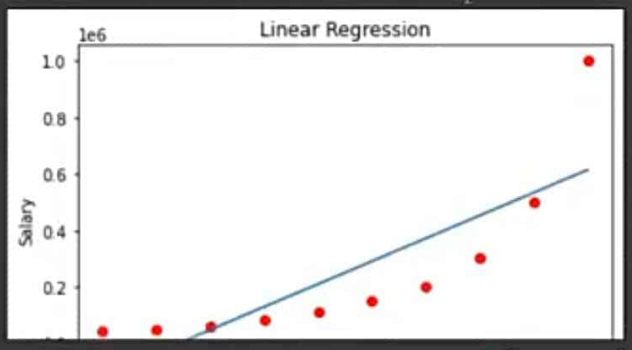
```
import matplotlib.pyplot as plt
plt.scatter(X,Y, color="red")
plt.plot(X, modelLR.predict(X))
plt.title("Linear Regression")
plt.xlabel("Level")
plt.ylabel("Salary")
plt.show()
```



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13_Salary prediction using POLYNOMIAL REGRESSION.ipynb

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fit() - Training Model - Calculating the initial parameters

transform() - After Training we gonna transform Data by using above calculated values

fit_transform() - First fit & Transform

Convert X to Polynomial Format (X^n)

n-degree

n=2 consist x & x^2

n=3 consist x & x^2 & x^3

```
[15] from sklearn.preprocessing import PolynomialFeatures
```

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13_Salary prediction using POLYNOMIAL REGRESSION.ipynb

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```
[9] from sklearn.preprocessing import PolynomialFeatures
    modelPR = PolynomialFeatures(degree = 4)
    xPoly = modelPR.fit_transform(X)
```

Train same Linear Regression with X-Polynomial instead of X

```
modelPLR = LinearRegression()
modelPLR.fit(xPoly,Y)
```

```
LinearRegression(copy_X=True, fit_intercept=True, n_jobs=None, normalize=False)
```

Visualizing Polynomial Regression results

```
[ ] plt.scatter(X,Y, color="red")
```

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13_Salary prediction using POLYNOMIAL REGRESSION.ipynb

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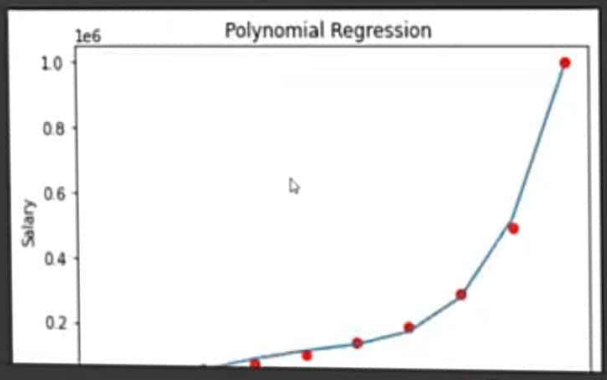
```
plt.scatter(X,Y, color="red")
plt.plot(X, modelPLR.predict(modelPR.fit_transform(X)))
plt.title("Polynomial Regression")
plt.xlabel("Level")
plt.ylabel("Salary")
plt.show()
```



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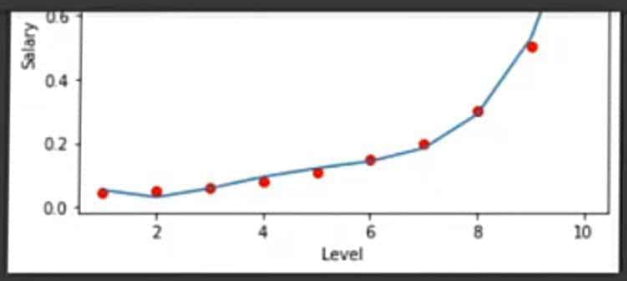
[17]



Prediction using Polynomial Regression

```
x=5
salaryPred = modelPLR.predict(modelPR.fit_transform([[x]]))
print('Salary of a person with Level {0} is {1}'.format(x,salaryPred))
```

```
Salary of a person with Level 8 is [289994.17249417]
```

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