

```
In [1]: #Importing Libraries
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
```

```
In [5]: #Importing dataset
df = pd.read_csv("student_scores_v1.csv")
df
```

```
Out[5]:
```

	Hours_Studied	Score
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0	1.0	10
1	2.0	25
2	3.0	35
3	4.0	50
4	5.0	65
5	6.0	70
6	7.0	85
7	8.0	88
8	9.0	94
9	10.0	98

```
In [6]: df.describe()
```

```
Out[6]:
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	Hours_Studied	Score
--	---------------	-------

count	10.00000	10.000000
mean	5.50000	62.000000
std	3.02765	30.811253
min	1.00000	10.000000
25%	3.25000	38.750000
50%	5.50000	67.500000
75%	7.75000	87.250000
max	10.00000	98.000000

```
In [7]: df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 10 entries, 0 to 9
Data columns (total 2 columns):
#   Column          Non-Null Count  Dtype
---  -
0   Hours_Studied    10 non-null     float64
1   Score            10 non-null     int64
dtypes: float64(1), int64(1)
memory usage: 292.0 bytes
```

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In [8]: df.isnull().sum()
```

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Out[8]: Hours_Studied    0
        Score            0
        dtype: int64
```

```
In [14]: #Splitting the feature and target
X = df[["Hours_Studied"]]
y = df[["Score"]]
```

```
In [15]: #Polynomial Features
from sklearn.preprocessing import PolynomialFeatures
poly_ft = PolynomialFeatures(degree=2)
poly_X = poly_ft.fit_transform(X)
```

```
In [17]: #Train Test Split
from sklearn.model_selection import train_test_split
X_train, X_test, y_train, y_test = train_test_split(poly_X,y,test_size=0.3,random_s
```

```
In [18]: #Implementing the model
from sklearn.linear_model import LinearRegression
model = LinearRegression()
model.fit(X_train, y_train)
```

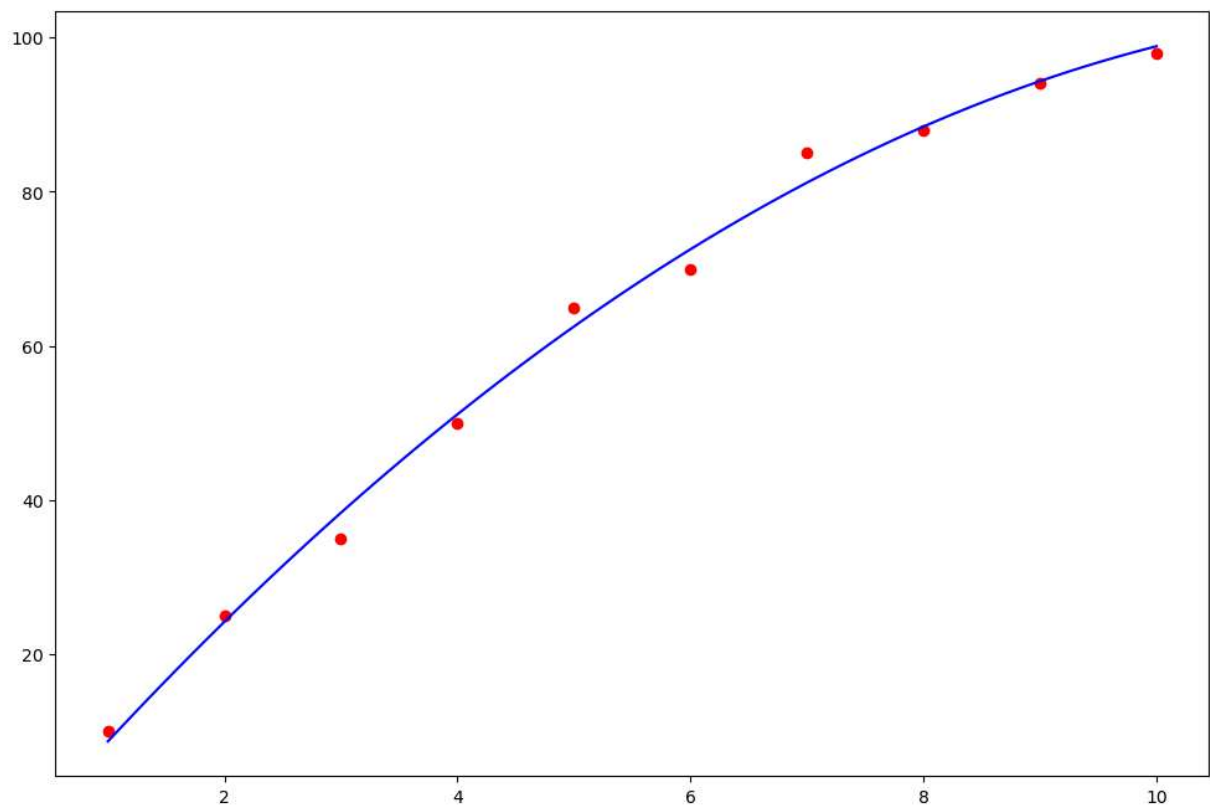
```
Out[18]: LinearRegression ⓘ ⓘ
         LinearRegression()
```

```
In [19]: y_pred = model.predict(X_test)
```

```
In [33]: X_grid = np.linspace(X.min(), X.max(), 100).reshape(-1, 1)
X_grid_poly = poly_ft.transform(X_grid)
y_pred_grid = model.predict(X_grid_poly)

# Plotting
plt.figure(figsize=(12, 8))
plt.scatter(X, y, color='red')
plt.plot(X_grid, y_pred_grid, color='blue')
plt.show()
```

C:\ProgramData\anaconda3\Lib\site-packages\sklearn\base.py:493: UserWarning: X does not have valid feature names, but PolynomialFeatures was fitted with feature names
warnings.warn(



In []: