

Assignment – 5

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Batch – 35

Question - 1

```
from google.colab import drive
drive.mount('/content/drive')

import pandas as pd
import matplotlib.pyplot as plt
from sklearn.preprocessing import MinMaxScaler
from google.colab import drive

data = pd.read_csv('/content/drive/My Drive/SML Dataset/Salary_Data.csv')

X = data[['YearsExperience']]
y = data['Salary']

print(data.head())
print(X.head())
print("\nTarget:\n", y.head())

plt.scatter(X, y, color='blue', alpha=0.5)
plt.xlabel('YearsExperience')
plt.ylabel('Salary')
plt.title('YearsExperience vs Salary')
plt.show()

scaler = MinMaxScaler()
X_normalized = scaler.fit_transform(X)
normalized_features_df = pd.DataFrame(X_normalized, columns=['YearsExperience'])
print("\nNormalized Features:\n", normalized_features_df.head())
```

OUTPUT -

```
YearsExperience  Salary
0             1.1  39343.0
1             1.3  46205.0
2             1.5  37731.0
3             2.0  43525.0
4             2.2  39891.0
Features:
```

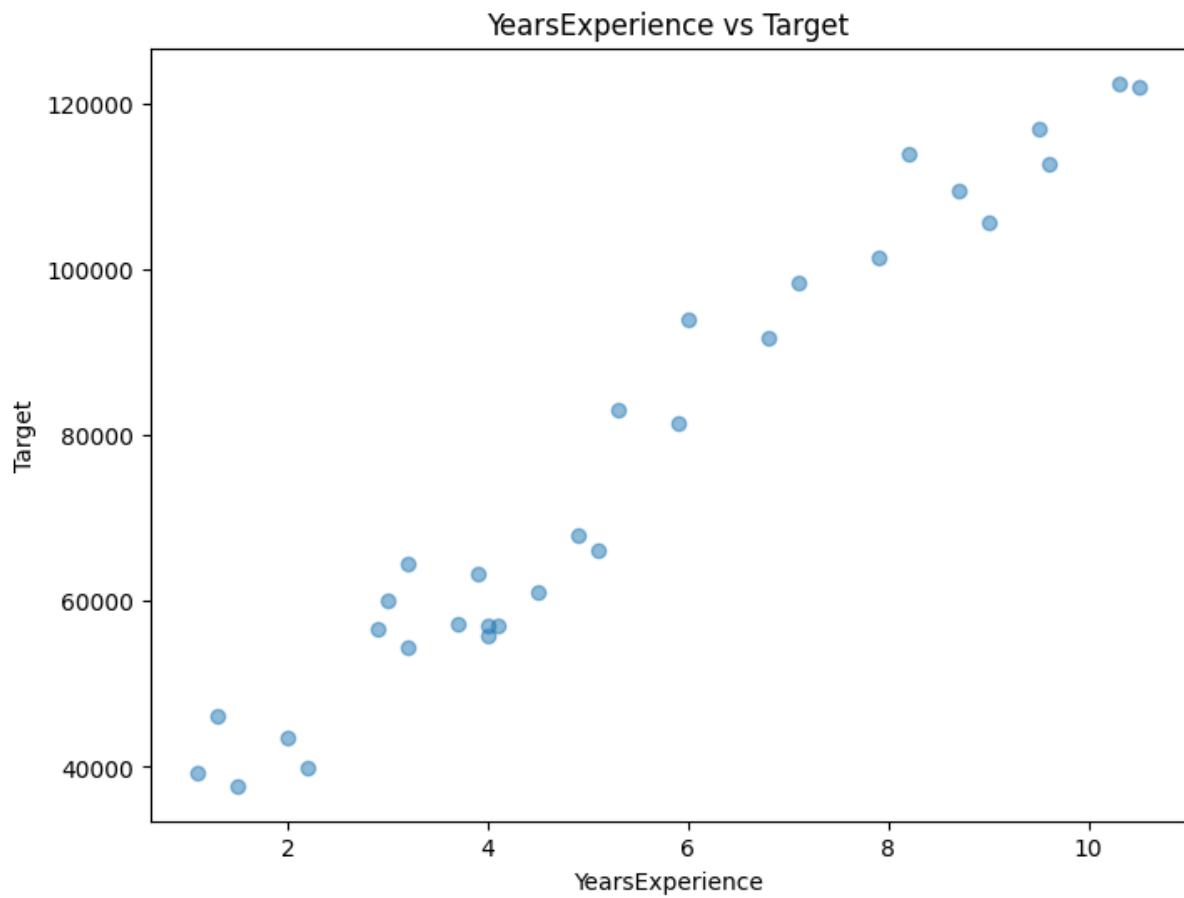
YearsExperience

| | |
|---|-----|
| 0 | 1.1 |
| 1 | 1.3 |
| 2 | 1.5 |
| 3 | 2.0 |
| 4 | 2.2 |

Target:

| | |
|---|---------|
| 0 | 39343.0 |
| 1 | 46205.0 |
| 2 | 37731.0 |
| 3 | 43525.0 |
| 4 | 39891.0 |

Name: Salary, dtype: float64



Normalized Features:

| | YearsExperience |
|---|-----------------|
| 0 | 0.000000 |
| 1 | 0.021277 |
| 2 | 0.042553 |
| 3 | 0.095745 |
| 4 | 0.117021 |

Question – 2

```
from google.colab import drive
drive.mount('/content/drive')
```

```
import pandas as pd
import matplotlib.pyplot as plt
from sklearn.preprocessing import MinMaxScaler
from google.colab import drive
```

```
file_path = '/content/drive/My Drive/SML Dataset/diabetes_data_upload.csv'
data = pd.read_csv(file_path)
```

```
X = data.drop('class', axis=1)
y = data['class']
```

```
X_encoded = pd.get_dummies(X)
```

```
plt.scatter(X_encoded.iloc[:, 0], y, color='red')
plt.xlabel('First Feature')
plt.ylabel('Class (Diabetes Risk)')
plt.title('Feature vs Class')
plt.show()
```

```
scaler = MinMaxScaler()
X_normalized = scaler.fit_transform(X_encoded)
```

```
print("Normalized features:\n", X_normalized)
```

OUTPUT -



**Age Gender Polyuria Polydipsia sudden weight loss weakness Polyphagia **

| | | | | | | | |
|---|----|------|-----|-----|-----|-----|-----|
| 0 | 40 | Male | No | Yes | No | Yes | No |
| 1 | 58 | Male | No | No | No | Yes | No |
| 2 | 41 | Male | Yes | No | No | Yes | Yes |
| 3 | 45 | Male | No | No | Yes | Yes | Yes |
| 4 | 60 | Male | Yes | Yes | Yes | Yes | Yes |

**Genital thrush visual blurring Itching Irritability delayed healing **

| | | | | | |
|---|-----|-----|-----|-----|-----|
| 0 | No | No | Yes | No | Yes |
| 1 | No | Yes | No | No | No |
| 2 | No | No | Yes | No | Yes |
| 3 | Yes | No | Yes | No | Yes |
| 4 | No | Yes | Yes | Yes | Yes |

partial paresis muscle stiffness Alopecia Obesity class

| | | | | | |
|---|-----|-----|-----|-----|----------|
| 0 | No | Yes | Yes | Yes | Positive |
| 1 | Yes | No | Yes | No | Positive |
| 2 | No | Yes | Yes | No | Positive |
| 3 | No | No | No | No | Positive |
| 4 | Yes | Yes | Yes | Yes | Positive |

Features:

**Age Gender Polyuria Polydipsia sudden weight loss weakness Polyphagia **

| | | | | | | | |
|---|----|------|-----|-----|-----|-----|-----|
| 0 | 40 | Male | No | Yes | No | Yes | No |
| 1 | 58 | Male | No | No | No | Yes | No |
| 2 | 41 | Male | Yes | No | No | Yes | Yes |
| 3 | 45 | Male | No | No | Yes | Yes | Yes |
| 4 | 60 | Male | Yes | Yes | Yes | Yes | Yes |

**Genital thrush visual blurring Itching Irritability delayed healing **

| | | | | | |
|---|-----|-----|-----|-----|-----|
| 0 | No | No | Yes | No | Yes |
| 1 | No | Yes | No | No | No |
| 2 | No | No | Yes | No | Yes |
| 3 | Yes | No | Yes | No | Yes |
| 4 | No | Yes | Yes | Yes | Yes |

partial paresis muscle stiffness Alopecia Obesity

| | | | | |
|---|-----|-----|-----|-----|
| 0 | No | Yes | Yes | Yes |
| 1 | Yes | No | Yes | No |
| 2 | No | Yes | Yes | No |
| 3 | No | No | No | No |
| 4 | Yes | Yes | Yes | Yes |

Target:

| | |
|---|----------|
| 0 | Positive |
| 1 | Positive |
| 2 | Positive |
| 3 | Positive |
| 4 | Positive |

Name: class, dtype: object

