

# **A PYTHON PROGRAM TO IMPLEMENT UNIVARIATE, BIVARIATE AND MULTIVARIATE REGRESSION**

Exp no. 1

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Code:

```
import pandas as pd
```

```
import matplotlib.pyplot as plt
```

```
import seaborn as sns
```

```
import numpy as np
```

```
df = pd.read_csv('/mnt/data/84d0492d-9a16-42b7-99fd-ca7c23b5d7ea.csv', header=None)
```

```
df.columns = ['sepal_length', 'sepal_width', 'petal_length', 'petal_width', 'species']
```

```
df_Setosa = df.loc[df['species'] == 'Iris-setosa']
```

```
df_Versicolor = df.loc[df['species'] == 'Iris-versicolor']
```

```
df_Virginica = df.loc[df['species'] == 'Iris-virginica']
```

```
plt.scatter(df_Setosa['sepal_width'], np.zeros_like(df_Setosa['sepal_width']), label='Setosa')
```

```
plt.scatter(df_Versicolor['sepal_width'], np.zeros_like(df_Versicolor['sepal_width']),  
label='Versicolor')
```

```
plt.scatter(df_Virginica['sepal_width'], np.zeros_like(df_Virginica['sepal_width']),  
label='Virginica')
```

```
plt.xlabel('sepal_width')
```

```
plt.legend()
```

```
plt.show()
```

```
plt.scatter(df_Setosa['sepal_length'], np.zeros_like(df_Setosa['sepal_length']), label='Setosa')
```

```
plt.scatter(df_Versicolor['sepal_length'], np.zeros_like(df_Versicolor['sepal_length']),
label='Versicolor')

plt.scatter(df_Virginica['sepal_length'], np.zeros_like(df_Virginica['sepal_length']),
label='Virginica')

plt.xlabel('sepal_length')

plt.legend()

plt.show()

plt.scatter(df_Setosa['petal_width'], np.zeros_like(df_Setosa['petal_width']), label='Setosa')

plt.scatter(df_Versicolor['petal_width'], np.zeros_like(df_Versicolor['petal_width']),
label='Versicolor')

plt.scatter(df_Virginica['petal_width'], np.zeros_like(df_Virginica['petal_width']),
label='Virginica')

plt.xlabel('petal_width')

plt.legend()

plt.show()

plt.scatter(df_Setosa['petal_length'], np.zeros_like(df_Setosa['petal_length']), label='Setosa')

plt.scatter(df_Versicolor['petal_length'], np.zeros_like(df_Versicolor['petal_length']),
label='Versicolor')

plt.scatter(df_Virginica['petal_length'], np.zeros_like(df_Virginica['petal_length']),
label='Virginica')

plt.xlabel('petal_length')

plt.legend()

plt.show()

sns.FacetGrid(df, hue='species', height=5).map(plt.scatter, "sepal_width",
"petal_width").add_legend()

plt.show()
```

```

sns.FacetGrid(df, hue='species', height=5).map(plt.scatter, "sepal_length",
"petal_length").add_legend()

plt.show()

```

```
sns.pairplot(df, hue="species", height=2)
```

```
plt.show()
```

output:



