

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

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()
```

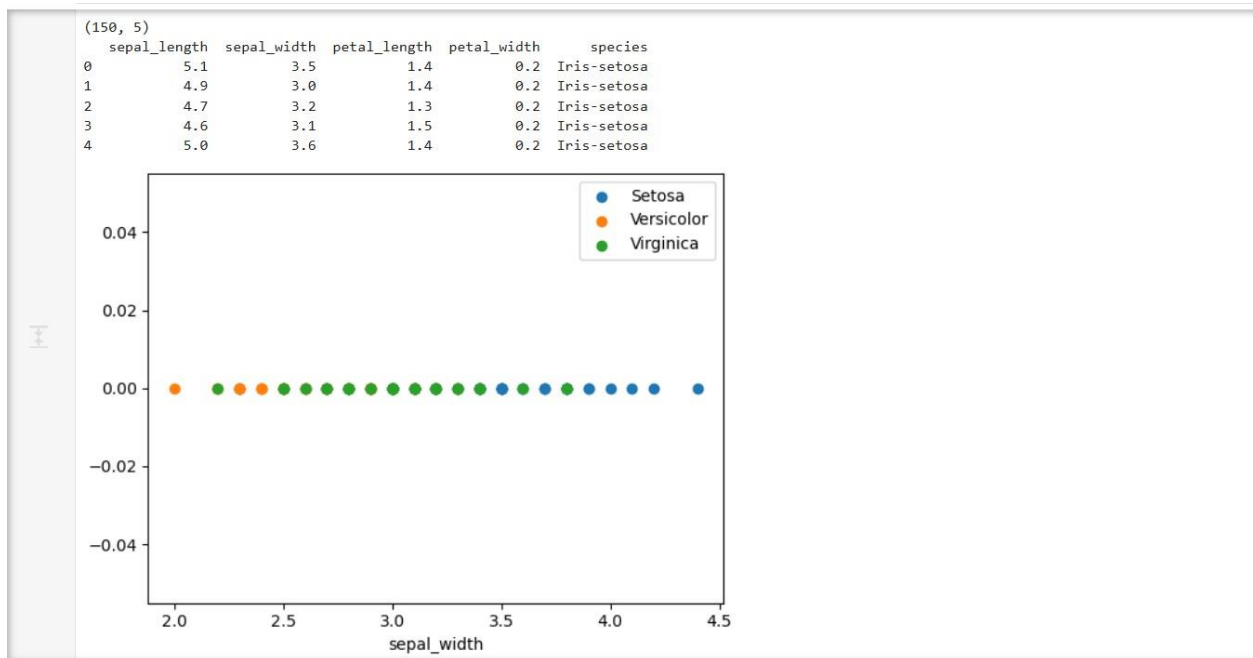
```
plt.show()
```

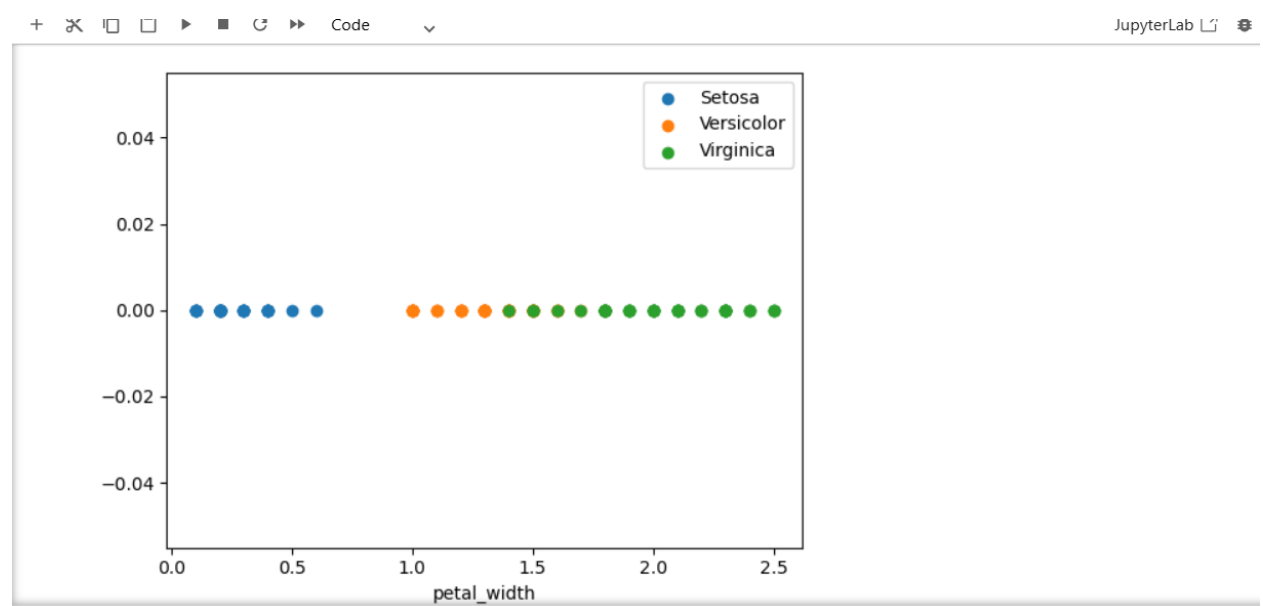
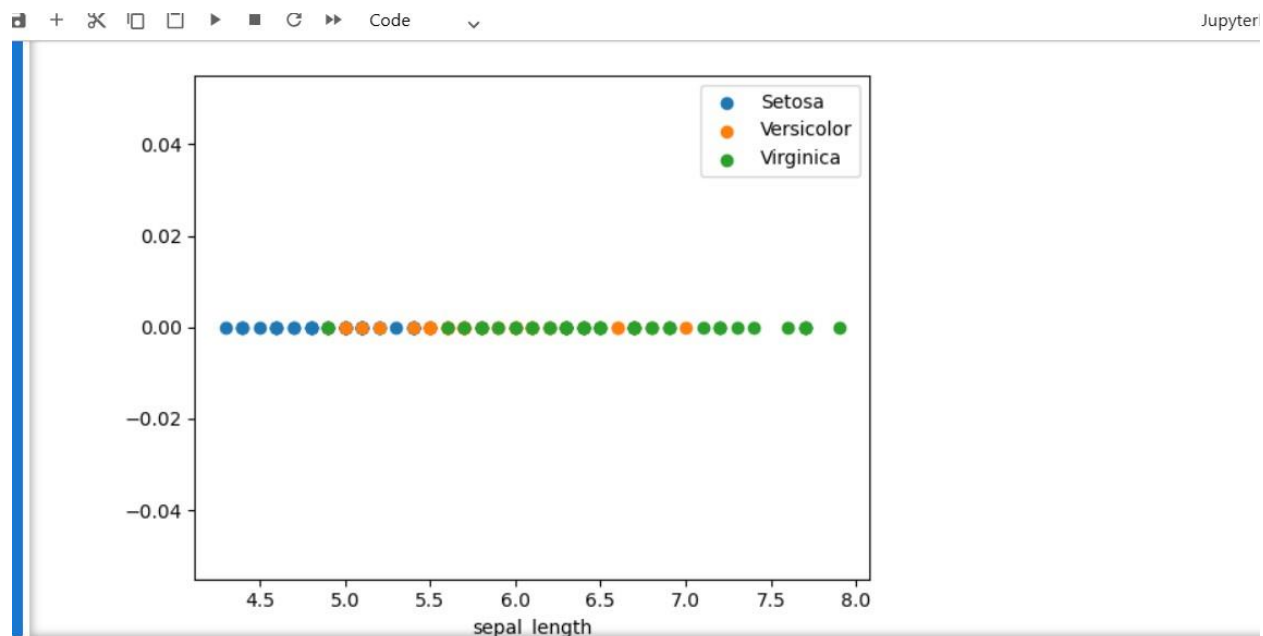
```
sns.FacetGrid(df, hue='species', height=5).map(plt.scatter, "sepal_width",  
"petal_width").add_legend()  
  
plt.show()
```

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

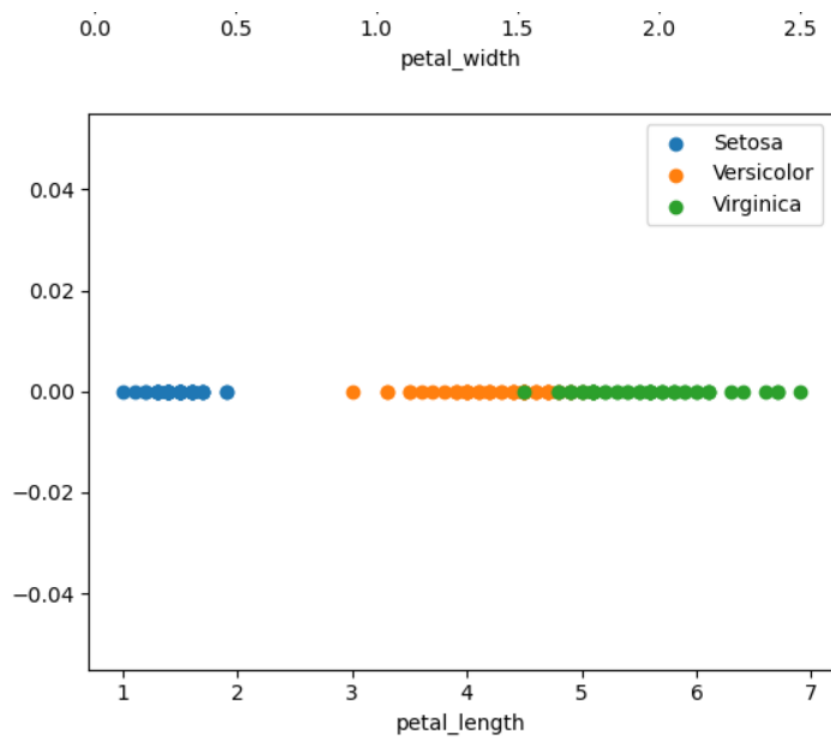
```
sns.pairplot(df, hue="species", height=2)  
  
plt.show()
```

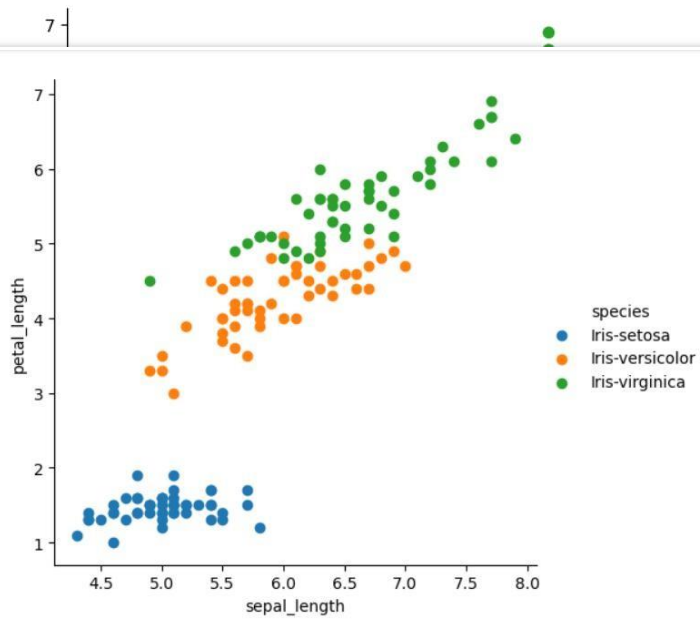
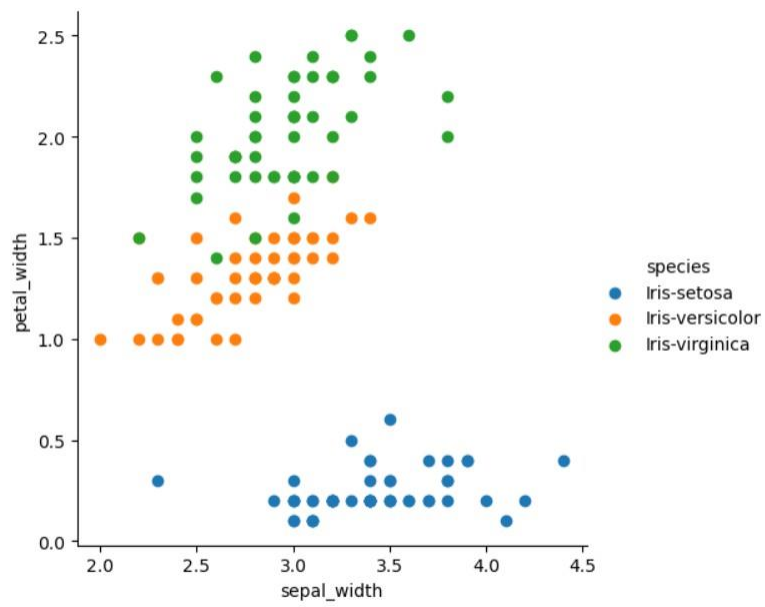
output:

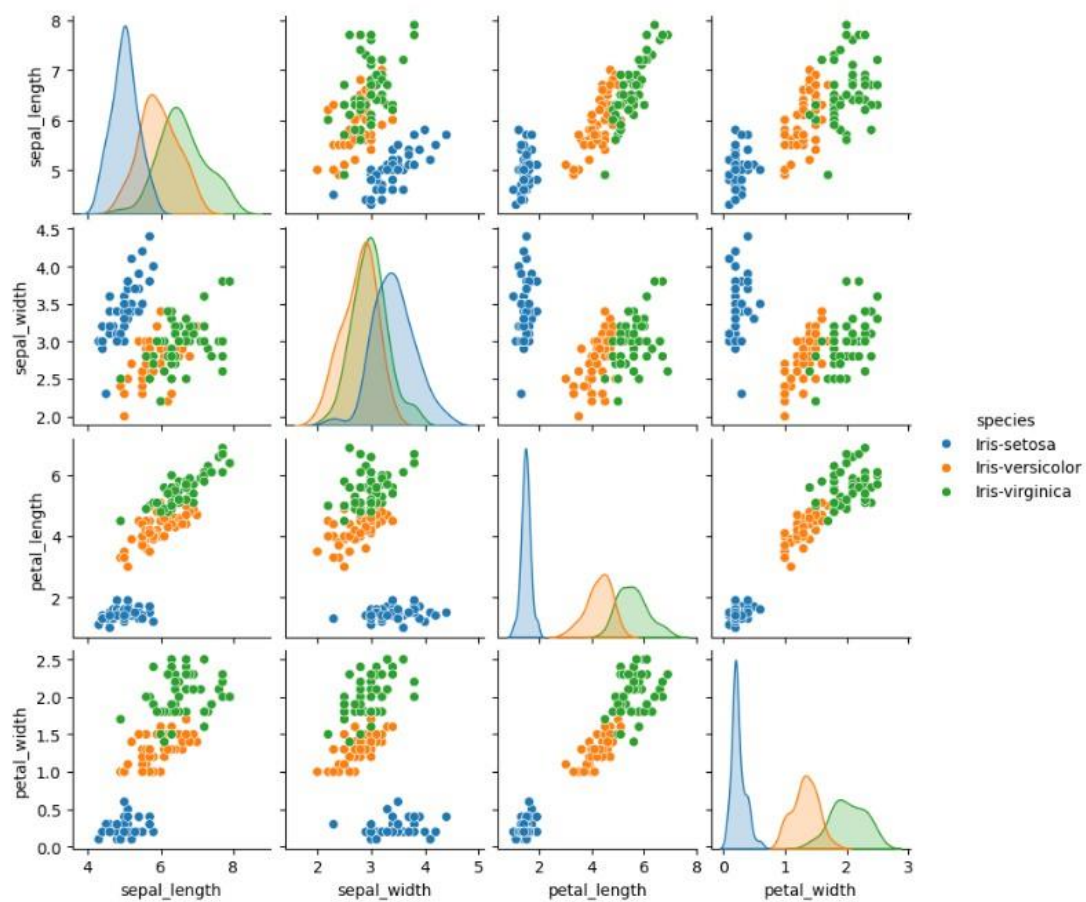




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