



```
In [4]: import pandas as pd
import numpy as np
from sklearn.linear_model import LogisticRegression
import matplotlib.pyplot as plt
```

```
In [5]: dia=pd.read_csv("/content/diabetcsv.csv")
dia.head()
```

```
Out[5]:
```

	preg	plas	pres	skin	insu	mass	pedi	age	class
0	6	148	72	35	0	33.6	0.627	50	tested_positive
1	1	85	66	29	0	26.6	0.351	31	tested_negative
2	8	183	64	0	0	23.3	0.672	32	tested_positive
3	1	89	66	23	94	28.1	0.167	21	tested_negative
4	0	137	40	35	168	43.1	2.288	33	tested_positive

```
In [6]: dia.isnull().sum()
```

```
Out[6]:
```

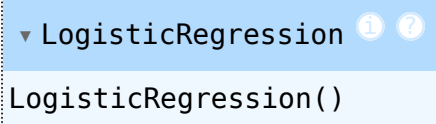
	0
preg	0
plas	0
pres	0
skin	0
insu	0
mass	0
pedi	0
age	0
class	0

**dtype:** int64

```
In [7]: ind=dia[['age','mass','insu','plas']]#independent
dep=dia['class']#dependent
```

```
In [8]: Logr=LogisticRegression()
```

```
In [9]: Logr.fit(ind,dep)
```

Out[9]:    
LogisticRegression()

```
In [10]: age=int(input("Enter the age:"))  
mass=int(input("Enter the mass:"))  
insulin=int(input("Enter the insulin:"))  
plasma=int(input("Enter the plasma:"))  
pred=int(input("Enter the pred:"))  
print(pred)
```

```
Enter the age:54  
Enter the mass:465  
Enter the insulin:465  
Enter the plasma:727  
Enter the pred:645  
645
```

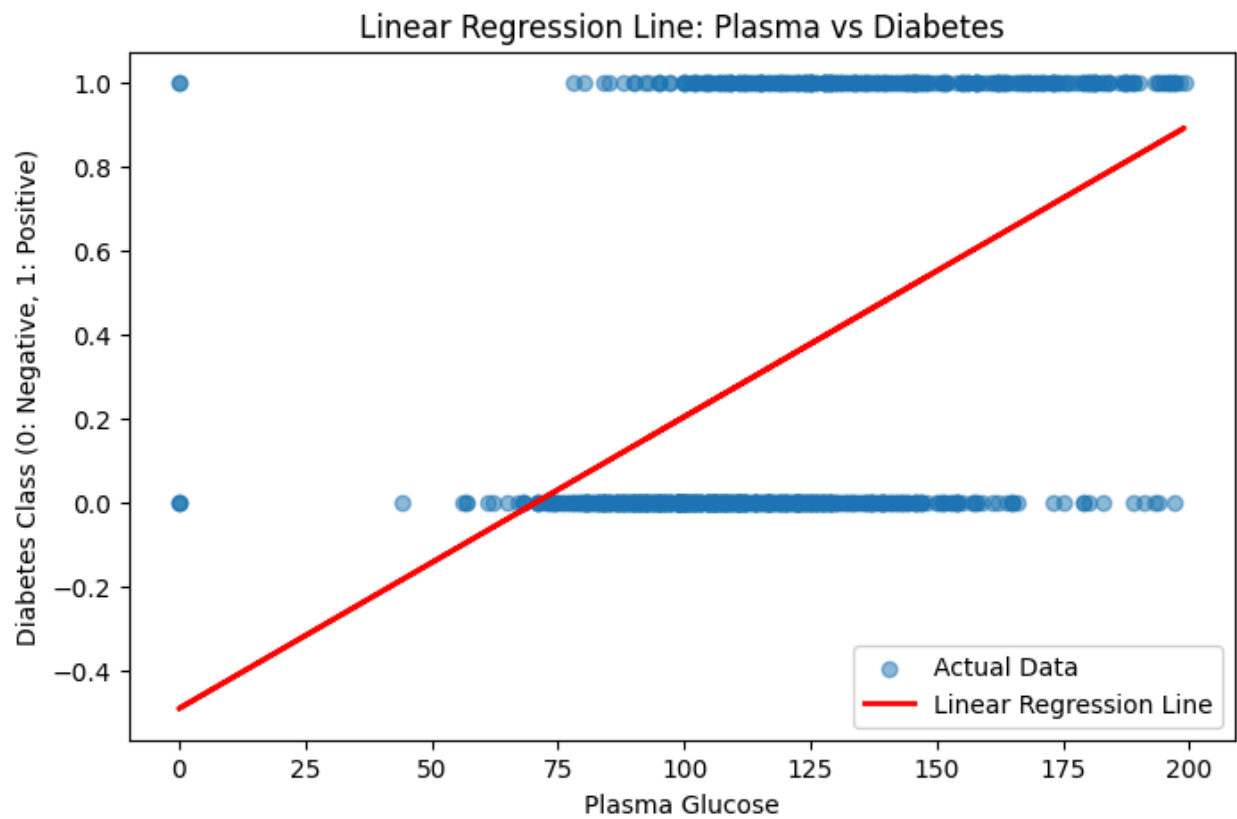
```
In [11]: Logr.score(ind,dep)
```

Out[11]: 0.7669270833333334

```
In [12]: from sklearn.metrics import accuracy_score  
pval=Logr.predict(ind)  
accuracy_score(dep,pval)
```

Out[12]: 0.7669270833333334

```
In [14]: from sklearn.linear_model import LinearRegression  
  
# Select one feature for visualization  
X_lr = dia[['plas']]  
y_lr = dia['class'].map({'tested_positive': 1, 'tested_negative': 0})  
  
# Train Linear Regression  
lin_reg = LinearRegression()  
lin_reg.fit(X_lr, y_lr)  
  
# Predictions  
y_lr_pred = lin_reg.predict(X_lr)  
  
# Plot  
plt.figure(figsize=(8,5))  
plt.scatter(X_lr, y_lr, alpha=0.5, label='Actual Data')  
plt.plot(X_lr, y_lr_pred, color='red', linewidth=2, label='Linear Regression L  
  
plt.xlabel('Plasma Glucose')  
plt.ylabel('Diabetes Class (0: Negative, 1: Positive)')  
plt.title('Linear Regression Line: Plasma vs Diabetes')  
plt.legend()  
plt.show()
```



```
In [18]: import pickle
with open("Logistic_Regression.pkl","wb") as f:
    pickle.dump(Logr,f)
from google.colab import files
files.download('Logistic_Regression.pkl')
```