In [8]:
```
import numpy as np
import matplotlib.pyplot as plt
from sklearn.linear_model import LogisticRegression
X = np.array([[1], [2], [3], [4], [5], [6], [7], [8]])
y = np.array([0, 0, 0, 0, 1, 1, 1, 1])
model = LogisticRegression()
model.fit(X, y)

test_input = np.array([[4.5]])
prediction = model.predict(test_input)

print(f"Predicted result for 4.5 hours: {'Pass' if prediction[0] == 1 else 'Fa

hours = float(input("Enter hours studied: "))
pred = model.predict([[hours]])
print("Prediction:", "Pass" if pred[0] == 1 else "Fail")
```

```
Predicted result for 4.5 hours: Fail
Enter hours studied: 8
Prediction: Pass
```