EX 7

CODING:

```
import math
X = [1,2,3,4,5,6]
y = [0,0,0,1,1,1]
w = 0
b = 0
lr = 0.1
def sigmoid(z):
    return 1 / (1 + math.exp(-z))
for _ in range(1000):
    dw = db = 0
    for i in range(len(X)):
        y_pred = sigmoid(w*X[i] + b)
        dw += (y_pred - y[i]) * X[i]
        db += (y_pred - y[i])
    w -= lr * dw
    b -= lr * db
correct = 0
for i in range(len(X)):
    y_pred = sigmoid(w*X[i] + b)
    if (y_pred >= 0.5) == y[i]:
        correct += 1
print("Accuracy:", correct/len(X))
```

OUTPUT:

main.py

Share Run

```python
import math
X = [1,2,3,4,5,6]
y = [0,0,0,1,1,1]
w = 0
b = 0
lr = 0.1
def sigmoid(z):
    return 1 / (1 + math.exp(-z))
for _ in range(1000):
    dw = db = 0
    for i in range(len(X)):
        y_pred = sigmoid(w*X[i] + b)
        dw += (y_pred - y[i]) * X[i]
        db += (y_pred - y[i])
    w -= lr * dw
    b -= lr * db
correct = 0
for i in range(len(X)):
    y_pred = sigmoid(w*X[i] + b)
    if (y_pred >= 0.5) == y[i]:
        correct += 1
print("Accuracy:", correct/len(X))

```

Output Clear

```
Accuracy: 1.0

=== Code Execution Successful ===
```