```python
# HOUSE PRICE PREDICTION USING SIMPLE LINEAR REGRESSION

# Step 1: Create CSV file
data = [
    ["Size","Price"],
    [1000,200000],
    [1500,300000],
    [2000,400000],
    [2500,500000]
]

file = open("house_data.csv","w")
for row in data:
    file.write(str(row[0]) + "," + str(row[1]) + "\n")
file.close()

print("CSV file created: house_data.csv\n")

# Step 2: Load dataset
sizes = [1000,1500,2000,2500]
prices = [200000,300000,400000,500000]

n = len(sizes)

# Calculate slope (m) and intercept (b)
sum_x = sum(sizes)
sum_y = sum(prices)
sum_xy = sum([sizes[i]*prices[i] for i in range(n)])
sum_x2 = sum([x*x for x in sizes])

m = (n*sum_xy - sum_x*sum_y) / (n*sum_x2 - sum_x*sum_x)
b = (sum_y - m*sum_x) / n

print("Slope (m):", m)
print("Intercept (b):", b)

# Predict price
test_size = 1800
predicted_price = m*test_size + b

print("\nPredicted price for", test_size, "sq.ft =", predicted_price)
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========== RESTART: C:/Users/dell/OneDrive/Desktop/ML LAB/EX NO 14.py ==========
CSV file created: iris.csv

Probability Setosa: 5.317495318540676
Probability Versicolor: 7.367783051638803e-11

Prediction: Setosa
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