```python
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
```

```python
data = pd.read_csv("headbrain.csv")
data
```

	Gender	Age Range	Head Size(cm^3)	Brain Weight(grams)
0	1	1	4512	1530
1	1	1	3738	1297
2	1	1	4261	1335
3	1	1	3777	1282
4	1	1	4177	1590
...	...	...	...	...
232	2	2	3214	1110
233	2	2	3394	1215
234	2	2	3233	1104
235	2	2	3352	1170
236	2	2	3391	1120

237 rows × 4 columns

```python
X = data["Head Size(cm^3)"].values
Y = data["Brain Weight(grams)"].values
```

```python
X_mean = np.mean(X)
Y_mean = np.mean(Y)
```

```python
numer = np.sum((X - X_mean) * (Y - Y_mean))
denom = np.sum((X - X_mean)**2)
m = numer / denom
c = Y_mean - m * X_mean
```

```python
Y_pred = m * X + c
r2 = 1 - (np.sum((Y - Y_pred)**2) / np.sum((Y - Y_mean)**2))
```

```python
print(f"Slope (m): {m}")
print(f"Intercept (c): {c}")
print(f"R² Score: {r2}")
```

```
Slope (m): 0.2634293394893993
Intercept (c): 325.5734210494428
R² Score: 0.639311719957
```

```python
plt.scatter(X, Y, color='blue', label="Actual Data")
plt.plot(X, Y_pred, color="red", label="Regression Line")
plt.xlabel("Head Size (cm³)")
plt.ylabel("Brain Weight (grams)")
plt.title("Simple Linear Regression (Least Squares Method)")
plt.legend()
plt.show()
```

Simple Linear Regression (Least Squares Method)