```python
import numpy as np
import pandas as pd
from sklearn.model_selection import train_test_split
from sklearn.linear_model import LinearRegression
from sklearn.metrics import mean_squared_error, r2_score
import matplotlib.pyplot as plt

# Load your dataset (replace 'your_dataset.csv' with the actual file
path)
df = pd.read_csv(r"C:\Users\student\Documents\ML\headbrain.csv")

#Reading data
data=pd.read_csv(r"C:\Users\student\Documents\ML\headbrain.csv")
print(data.shape)
data.head()
```

```
(237, 4)
```

	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

```python
# Assuming 'X' is the feature and 'Y' is the target variable
# Adjust column names accordingly
X = df[['Head Size(cm^3)']]
Y = df['Brain Weight(grams)']

# Split the data into training and testing sets
X_train, X_test, Y_train, Y_test = train_test_split(X, Y,
test_size=0.2, random_state=42)

# Create a linear regression model
reg = LinearRegression()

# Train the model on the training set
reg.fit(X_train, Y_train)

# Make predictions on the test set
Y_pred = reg.predict(X_test)

# Evaluate the model
mse = mean_squared_error(Y_test, Y_pred)
r2 = r2_score(Y_test, Y_pred)

print("Mean Squared Error:", mse)
print("R-squared:", r2)
```

```
Mean Squared Error: 4672.043549643723
R-squared: 0.7149168473012073
```

```python
# Plotting the regression line
plt.scatter(X_test, Y_test, color='red', marker='.')
plt.plot(X_test, Y_pred, color='green', linewidth=1)
plt.xlabel('X')
plt.ylabel('Y')
plt.title('Linear Regression Example')
plt.show()
```


Linear Regression Example