Assignment 5

```python
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
from sklearn.model_selection import train_test_split
from sklearn.linear_model import LinearRegression
from sklearn.metrics import mean_absolute_error, mean_squared_error, r2_score
df = pd.read_csv('pizza_sales.csv')
X = df[["quantity"]]  # Independent variable
y = df["total_price"]  # Dependent variable (continuous)
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=42)
model = LinearRegression()
model.fit(X_train, y_train)
y_pred = model.predict(X_test)
mae = mean_absolute_error(y_test, y_pred)
mse = mean_squared_error(y_test, y_pred)
r2 = r2_score(y_test, y_pred)
print(f" Mean Absolute Error: {mae:.2f}")
print(f"  Mean Squared Error: {mse:.2f}")
print(f"   R² Score: {r2:.2f}")
plt.figure(figsize=(8,5))
plt.scatter(X_test, y_test, color='blue', alpha=0.5, label="Actual Sales")
plt.plot(X_test, y_pred, color='red', linewidth=2, label="Regression Line")
plt.xlabel("Quantity of Pizzas Sold")
plt.ylabel("Total Price (Sales)")
plt.title("Linear Regression - Predicting Pizza Sales")
plt.legend()
plt.show()
```

Output :-