EXPERIMENT 9

CODE:-

```
import numpy as np
import matplotlib.pyplot as plt
from sklearn.linear_model import LinearRegression
from sklearn.preprocessing import PolynomialFeatures

# Dataset
X = np.array([1, 2, 3, 4, 5]).reshape(-1, 1)
y = np.array([2, 4, 9, 16, 25])

# Linear Regression
linear_model = LinearRegression()
linear_model.fit(X, y)
y_linear = linear_model.predict(X)

# Polynomial Regression (degree 2)
poly = PolynomialFeatures(degree=2)
X_poly = poly.fit_transform(X)

poly_model = LinearRegression()
poly_model.fit(X_poly, y)
y_poly = poly_model.predict(X_poly)

# Plot
plt.scatter(X, y)
plt.plot(X, y_linear)
plt.plot(X, y_poly)
```

```
plt.xlabel("X values")
plt.ylabel("Y values")
plt.title("Linear vs Polynomial Regression")
plt.show()
```

OUTPUT:-