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

```
# Sample data: [hours studied]
X = np.array([[1],[2], [3],[4] , [5], [6], [7], [8]])
# Labels
y = np.array([0,0,0,0,1,1,1,1])
```

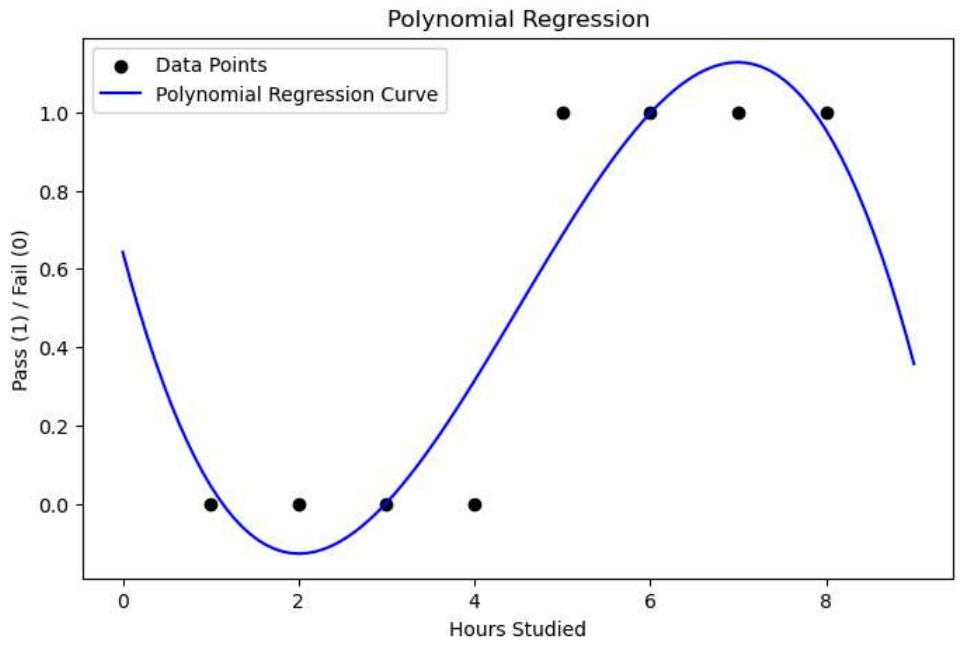
```
poly = PolynomialFeatures(degree=3)
X_poly = poly.fit_transform(X)
```

```
# Train Polynomial Regression model
model = LinearRegression()
model.fit(X_poly, y)
```

```
▾ LinearRegression
LinearRegression()
```

```
# Generate smooth curve for predictions
X_test = np.linspace(0, 9, 100).reshape(-1, 1)
X_test_poly = poly.transform(X_test)
y_pred = model.predict(X_test_poly)
```

```
# Plot
plt.figure(figsize=(8,5))
plt.scatter(X, y, color='black', label="Data Points")
plt.plot(X_test, y_pred, color='blue', label="Polynomial Regression Curve")
plt.xlabel("Hours Studied")
plt.ylabel("Pass (1) / Fail (0)")
plt.title("Polynomial Regression")
plt.legend()
plt.show()
```




```
Start coding or generate with AI.
```