In [1]:
```
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 r2_score,mean_squared_error
import matplotlib.pyplot as plt
from sklearn.feature_selection import SelectKBest, chi2
```

In [6]:
```
df=pd.read_csv("Student_Performance.csv")
df.head(5)
```

Out[6]:

	Hours Studied	Previous Scores	Extracurricular Activities	Sleep Hours	Sample Question Papers Practiced	Performance Index
0	7	99	Yes	9	1	91.0
1	4	82	No	4	2	65.0
2	8	51	Yes	7	2	45.0
3	5	52	Yes	5	2	36.0
4	7	75	No	8	5	66.0

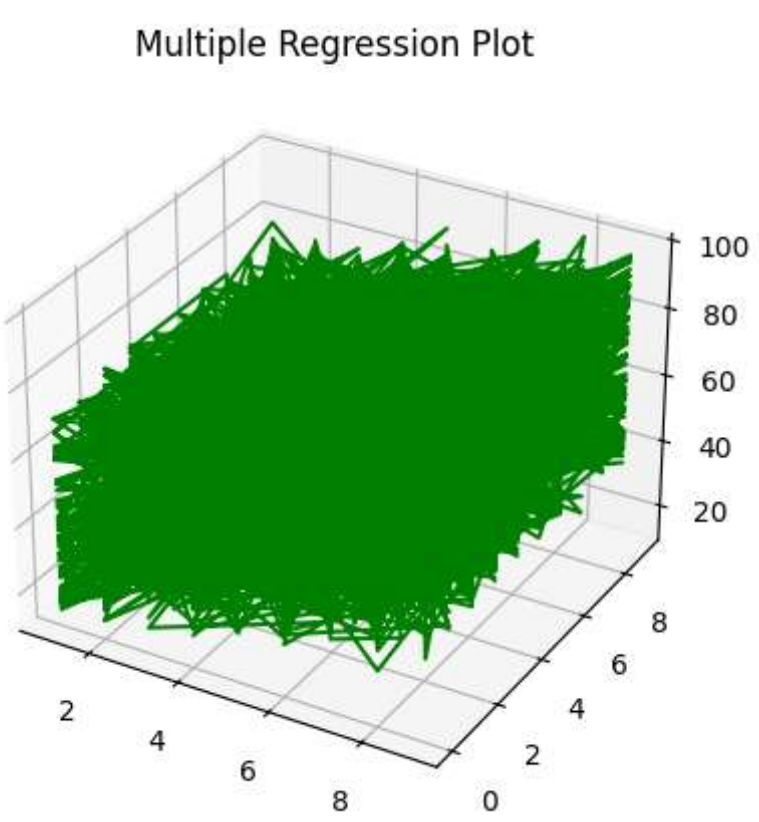
In [7]:
```
col="Performance Index"
x = df.drop(["Extracurricular Activities","Performance Index"],axis=1)
y=df["Performance Index"]
```

In [8]:
```
xtrain,xtest,ytrain,ytest=train_test_split(x,y,test_size=0.4,shuffle=True)
# Apply SelectKBest with chi2
select_k_best = SelectKBest(score_func=chi2, k=2)
X_train_k_best = select_k_best.fit_transform(xtrain, ytrain)
print("Selected features:", xtrain.columns[select_k_best.get_support()])
```

```
Selected features: Index(['Hours Studied', 'Previous Scores'], dtype='object')
```

In [9]:
```
model=LinearRegression()
model.fit(xtrain,ytrain)
ypred=model.predict(xtest)
```

In [11]:
```
fig = plt.figure()
ax = plt.axes(projection='3d')
ax.plot3D(xtest["Hours Studied"], xtest["Sample Question Papers Practiced"], ytest, 'green')
ax.set_title('Multiple Regression Plot')
plt.show()
```


Multiple Regression Plot
100
80
60
40
20
2
4
6
8
0
2
4
6
8