Expt. No. 10 Date 05/01/2021

Page No. 24

10. Implement the non-parametric Locally weighted Regression algorithm in order to fit data points. Select appropriate data set for your experiment & draw graphs.

```
import numpy as np
import matplotlib.pylab as plt
from sklego.linear_model import LowessRegression

n=100
xs = np.linspace(0, np.pi, n)
ys = 1 + np.sin(xs) + np.cos(xs**2) + np.random.normal(0,0.1,n)

mod = LowessRegression(sigma=0.01, span=0.5).fit(xs.reshape(-1,1),
                                                 ys)

xs_new = np.linspace(-1, np.pi+1, n*2)
preds = mod.predict(xs_new.reshape(-1,1))

plt.figure(figsize=(12,4))
plt.scatter(xs,ys)
plt.plot(xs_new, preds, color='purple')
```