**Assignment- Regression Algorithm**

1. Problem statement identification:

Stage1: ML

Stage2: Supervised Leaning method

Stage3: Regression

2. Dataset

1338 rows × 6 columns

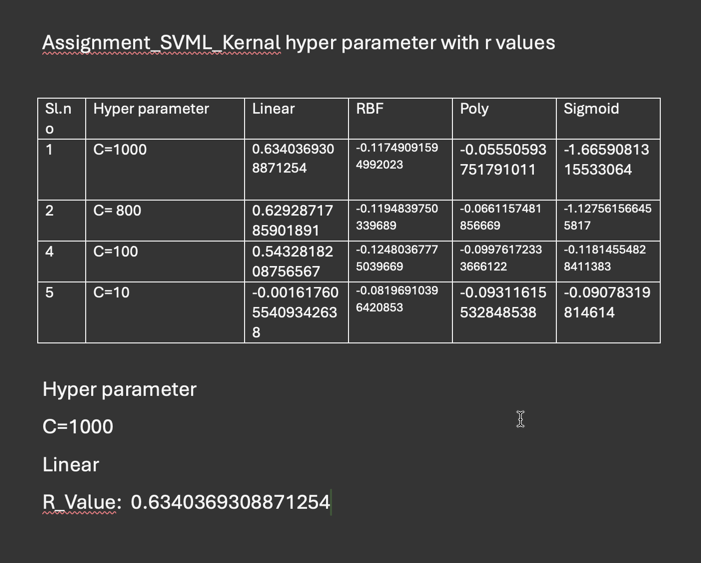
3. Yes, We need preprocessing method since we have nominal datas (Sex, Smoker ) to convert String data into numeric.

4. R2\_score values:

1. Multiple Linear Regression:

R2\_value : 0.7894790349867009

2. Support Vector ML Regression

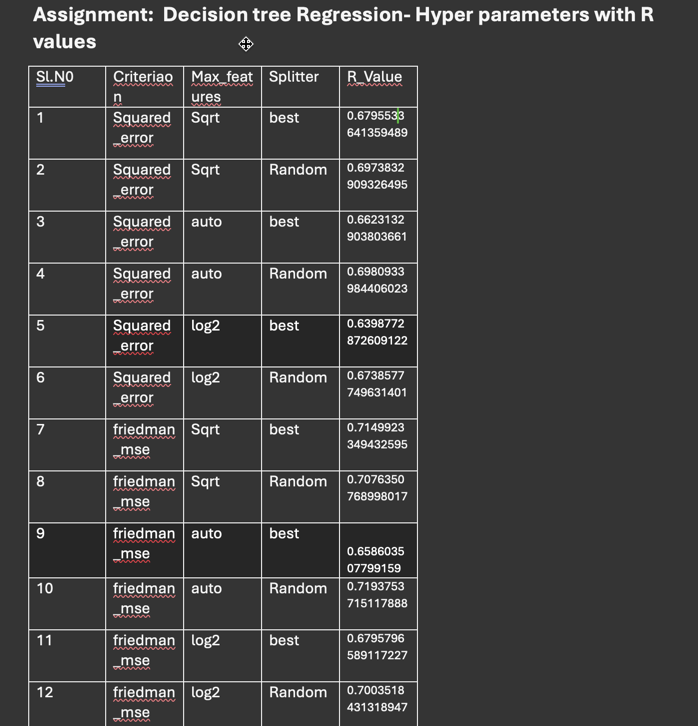


kernel='linear'

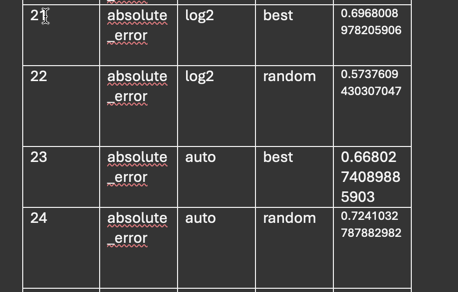
C=1000

R2\_Score value : 0.6340369308871254

3. Decision Tree







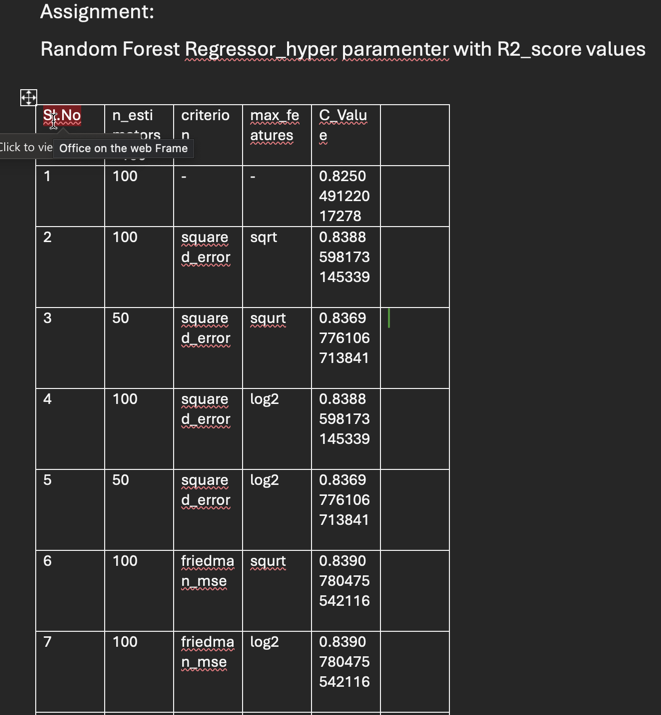
criterion='absolute\_error'

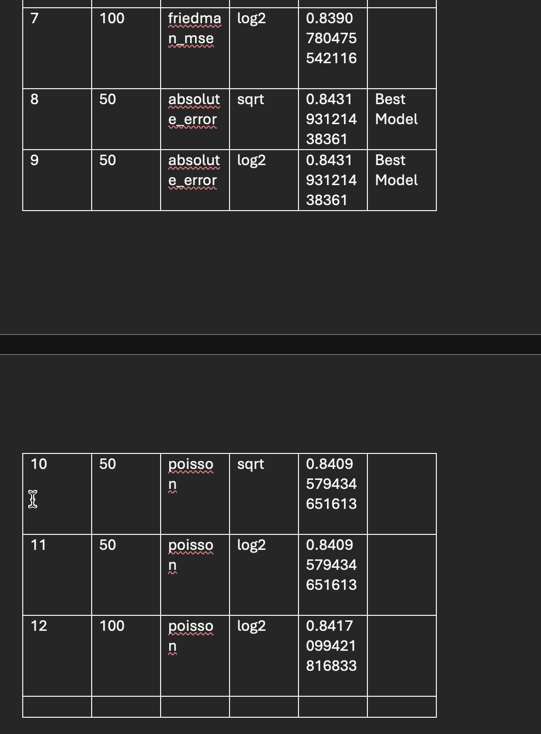
max\_features='sqrt'

splitter='best'

R2\_Value: 0.7245625680549648

4. Random forest:





n\_estimators=50

random\_state=0

criterion='absolute\_error'

max\_features='sqrt'

R2 value: 0.843193121438361

Conclusion:

In Random Forest supervised learning method, we are getting the best model out of all other methods. We can deploy in Production.