Assignment-2 Description

Deadline: Monday (11/11/2024)

- Generate regression dataset using make_regression from sklearn.datasets (1000 linear samples & 3 features)

- Split the data into (Train & Test)

- Randomly initialize the weights vector

- **Implement <u>Loss</u>** & **<u>gradientDescent</u>** functions

  Hints for GradientDescent:

  - you will stop at a fixed number of iterations (for example 100 iterations) → **Print** the loss after each 10 iterations

  - fix the learning rate (for example 0.001) and try to run the code again with different learning rate and check if it will enhance the performance

  - You will update the weights using the training data

- Use the final weights to predict the output of the test data and finally check the performance of your model by calculating the MSE/MAE for the test data "**Print MSE/MAE**"

- The only built-in functions allowed in this assignment is the split fn. & make_regression It is not allowed to use any other built-in function in the code.

- You have to implement the gradient descent to update the weights using the equations included in the lecture (Don't use any other functions based on google search) (You will not get its grade)