

## Machine Learning Lab, B.Tech 5th Semester

### Instructions

1. This is only for practice. Your completion will be reviewed by the Teaching Assistants.

### Practice Assignment 4

1. (a) Implement the gradient descent algorithm to find the optimal parameters for a simple linear regression model. Consider the dataset below:

Hours of Study (x)	Exam Score (y)
1	2
2	4
3	6
4	8
5	10
6	12
7	14
8	15
9	16
10	20

Table 1: Dataset

- i. Load the dataset.
- ii. Split the dataset into training, validation and testing set.
- iii. Implement Gradient Descent Algorithm (GD).
- iv. Evaluate the model in the validation phase.
- v. Find the final value of the parameters after the validation phase.
- vi. Test your model on the testing data.

Note: You are not allowed to use inbuilt function of any machine learning model.