IT 170 Programming Assignment 4

Answers to this assignment are due by ***the time specified on Reggienet***. You need submit your solution as required below to the ReggieNet.

No late submission!!!

Background about Linear regression:

Please refer to previous assignments.

Object-Oriented Simple Linear Regression (35%)

In this programming assignment, you will implement a Simple Linear Regression model using OOP to analyze a dataset from a CSV file.

Objective:

- Understand the OOP concept and apply it to solve a practical problem.

Requirements:

1. (25 points) Define a class called MyLinearRegression following the following structure:
2. (15 points) Write a Python application called myLinearRegressor to use MyLinearRegression based on the data from the CSV file.

Expected output:

The coefficients b0 is ###; b1 is ###; RMSE is ###

Your Deliverables:

• All codes can be included in a single filr slr.py

Sample Code:

```
class MyLinearRegression:

    def __init__(self):
        self.coef = None      #i.e., b1
        self.intercept = None #i.e., b0
        self.dataList = []
        self.trainDataSet = []
        self.testDataSet = []
```

```
    #add any necessary instance variables here

def loadData(self, path, fileName):
    #Your Code

def dataSplit(self, dataList, ratio):
    #Your Code

def fit(self, trainingSet): #to build a linear regression model
    #Your Code

def predict(self, testSet):
    #Your Code

def eval(self, result): #calculate RMSE
    #Your Code

#Define static methonds for all utility functions, such as:
#mean, min, max, variance, covariance, etc.

#Please define other variables, methods as needed
```