**Team Number:**

**Team Captain:**

**Team Members:**

**Activity on**

**PART I: (15 Points):**

**Problem 1.1 (5 Points)** The response variable of the observed data and the fitted prediction are listed in the following table.

|  |  |  |
| --- | --- | --- |
| Response (Y) | Model I Prediction ( | Model II Prediction ( |
| 3 | 3.2 | 3.3 |
| 4 | 4.3 | 4.2 |
| 5 | 4.9 | 4.8 |
| 6 | 5.7 | 5.9 |
| 7 | 6.9 | 7.1 |

1. Calculate the sum squared of error of Model I and Model II.
2. Calculate the average squared error of Model I and Model II.
3. Calculate both and .
4. Calculate both and
5. Calculate both and

|  |  |  |
| --- | --- | --- |
| Measure | Model I | Model II |
| SSE |  |  |
| ASE |  |  |
| R2 |  |  |
| MAPE |  |  |
| MAE |  |  |

**Problem 1.2 (10 Points)** Work on Problem 1, Problem 2, and Problem 3 in the Textbook (Chapter 5 on Page 219)

**PART II Programming (15 Points)**

**Data Used:** “House\_Prices\_PRED.CSV” with three variables: ID, House\_Price (observed value), and P\_House\_Price (Model Predicted Value).

**Problem 2.1 (0 Points)** Read the CSV file “House\_Prices\_PRED.CSV”

**Problem 2.2 (3 Points)** Write a program to calculate the sum squared of error and the average squared error of the Model (i.e., P\_House\_Price).

**Problem 2.3 (3 Points)** Write a program to calculate the R2 of the Model (i.e., P\_House\_Price).

**Problem 2.4 (3 Points)** Write a program to calculate the MAPE of the Model (i.e., P\_House\_Price).

**Problem 2.5 (3 Points)** Write a program to calculate the MAE of the Model (i.e., P\_House\_Price).

**Problem 2.6 (3 Points)** Write a program to produce a residual plot with residual on the Y-axis and observed value (House\_Price) and to impose a loess line on the graph.