



SCHOOL OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF DATA SCIENCE AND ANALYTICS
SUMMER 2024 – ASSIGNMENT 3

COURSE CODE: STA 3050A

UNIT NAME: TIME SERIES AND FORECASTING

DATE: 10TH JUNE 2024

TOTAL MARKS: 10 MARKS

INSTRUCTIONS:

For this exercise:

1. ANSWER ALL QUESTIONS
2. Do all your work in the Rmarkdown (.rmd).
3. Submissions should be in either a **`.rmd` file**
4. NO SUBMISSIONS SHOULD BE DONE VIA EMAIL

QUESTION 1**[10 Marks]**

A manager of a national park collected data on the number of visitors (in thousands) who visited the park in each quarter of 2021 and 2022. The data includes:

| Season | Seasonal Index | 2021 | 2022 |
|---------|----------------|------|------|
| Summer | 162 | 51 | 54 |
| Monsoon | 62 | 28 | 32 |
| Winter | 87 | 41 | 45 |
| Spring | 89 | 36 | 43 |

Tasks:

1. Calculate the deseasonalized values for each quarter.
2. Compute the trend values for the deseasonalized data.
3. Plot the quarterly number of visitors for 2021 and 2022, along with the deseasonalized values and trend values on the same graph.