# SIT112 - TASK COMPLETION REPORT

**Important note 1:** Please **do not** include Python code in this report. It would be acceptable though to make brief references to function names or different parts of the task's notebook when needed.

**Important note 2:** Please **do not** leave any response field empty; if not applicable, enter NA.

## 1. TASK SUMMARY

| TASK NAME (ABBREVIATION) | YOUR NAME (STUDENT ID) | YOUR DEAKIN EMAIL |
|---|---|---|
| Pass Task P0 | Davoud Mougouei (student ID) | Davoud.Mougouei@deakin.edu.au |

## 2. TASK DESCRIPTION

| ITEM | RESPONSE |
|---|---|
| What was the objective(s) of the task? | The objective of this task was to analyze the relationship between the amount of rainfall and the number of mosquito bites in a certain region. |
| What kind of data did you work with? | The task involved analyzing two datasets: one containing daily rainfall data for the region for the past year, and the other containing daily mosquito bite count for the same period. |
| Briefly describe the data science task you worked on. | The data was cleaned, merged, and prepared for analysis, and a scatter plot was created to visualize the relationship between rainfall and mosquito bites. Finally, the correlation coefficient between the two variables was calculated to determine the strength of the relationship. |

## 3. TECHNICAL SKILLS

| ITEM | RESPONSE |
|---|---|
| What technical skills did you use during the task? | We used several technical skills during the task, including data cleaning, merging datasets, data preparation (converting column types), data analysis (calculating correlation coefficient), and data visualization (creating a scatter plot). |
| list any challenges or obstacles you faced while working on the task and how you overcame them. | One challenge we faced was dealing with missing values in the datasets. We overcame this challenge by dropping any rows with missing values using the dropna() function. |

## 4. DATA CLEANING AND PREPARATION (ENTER NA WHEN NOT APPLICABLE)

| ITEM | RESPONSE |
|---|---|
| What steps did you take to clean and prepare the data? | We dropped any rows with missing values using the dropna() function, and then converted the Rainfall (mm) column to float type and the Mosquito Bites column to integer type using the astype() function. |
| Did you encounter any issues with the data during this process? How did you address these issues with the data? | We encountered missing values in the datasets, which we addressed by dropping any rows with missing values using the dropna() function. |

## 5. DATA ANALYSIS (ENTER NA WHEN NOT APPLICABLE)

| ITEM | RESPONSE |
|---|---|
| How did you analyze the data? | We analyzed the data by calculating the correlation coefficient between the Rainfall (mm) and Mosquito Bites columns using the corr() function from pandas. |
| Did you use any visualization techniques to better understand the data? | Yes, we used a scatter plot to visualize the relationship between rainfall and mosquito bites. |
| What insights did you gain from this analysis? | From the analysis, we found that there was a moderate positive correlation between rainfall and mosquito bites, indicating that as rainfall increased, so did the number of mosquito bites. This insight can be useful for public health officials and policymakers in designing interventions to reduce the spread of mosquito-borne diseases. |

## 6. BASIC REQUIREMENTS FOR THE TASK

| ITEM | RESPONSE (YES/NO) |
|---|---|
| Are you confident to execute the Python code in this task and explain the output? | Yes |
| Are you confident to explain what each line of code does and how it contributes to the solution(s)? | Yes |
| Are you confident to rewrite or modify the code after completing this task?<br><br>• For pass tasks: with guidance, no time limit.<br>• For credit tasks: with limited guidance, no time limit.<br>• For distinction tasks: independently, no time limit.<br>• For high distinction tasks: independently, in a limited time. | Yes |

## 7. CODE ATTACHMENT (NOT APPLICABLE TO THE PASS TASKS – ENETER NA)

| ITEM | RESPONSE (YES/NO/NA) |
|---|---|
| Have you attached the notebook file that contains your solutions (Python code) for this task? | NA |
| Have you executed all the cells in your attached notebook and ensured there is no error? *Please note your submission will not be flagged as complete if your attached notebook contains any error.* | NA |

## 8. VIDEO ATTACHMENT (NOT APPLICABLE TO THE PASS/CREDIT TASKS: NA)

| ITEM | RESPONSE (THE VIDEO LINK/NA) |
|---|---|
| Provide the link to the video recording that presents your completed task. This is only for Distinction and High Distinction tasks. Enter NA for Pass/Credit tasks. | NA |

## 9. AKNOWLEDGEMENT

BY SUBMITTING THIS REPORT, I ACKNOWLEDGE THAT:

- MY RESPONSES ARE ACCURATE AND ARE MY OWN WORDS.
- I HAVE MET ALL THE BASIC REQUIREMENTS OF THE TASK (LISTED IN SECTION 6).
- I HAVE READ AND FULLY UNDERSTOOD THE ASSESSMENT GUIDELINE OF THE UNIT.
- THIS REPORT DOES NOT EXCEED 3 PAGES.
- THIS REPORT DOES NOT INCLUDE CODE EXCEPT BRIEF REFERENCES TO FUNCTION NAMES OR DIFFERENT PARTS OF THE TASK'S NOTEBOOK.
- MY SUBMISSION DOES NOT CONTAIN ANY CREDENTIALS (E.G., PASSWORD, API KEY, ETC) OR PERSONAL INFORMAIOTN.

**IMPORTANT NOTE 3:** IF YOU HAVE ANSWERED NO TO ANY OF THE QUESTIONS IN SECTIONS 6, PLEASE RECONSIDER SUBMITTING YOUR REPORT; ASK HELP FROM YOUR TUTOR.

ADD YOUR NAME AND SIGNATURE HERE:   DAVOUD MOUGOUEI