**ASSIGNMENT 2**

Topic: NumPy and Pandas

Due: 1 week from announcement.

**NUMPY:**

Given a raw data of the record of the attendance for 15employees in a company for a 14 days event. The exported raw data is recorded in following way:

A picture containing shape

Description automatically generated

Employee 15

Employee 2

Employee 1

Attendance of 15 employees for first day

TASKS:

1. Read the “*Attendance\_RAW.txt*” and save the data into a NumPy array.
2. Shape the NumPy array to a structure where **row** represents the employees, **column** represents the working days.
3. Construct a function that can calculate and return the list of average of attendance for each day.

**PANDAS**

Given a data file, “*emp\_detail.csv*” which consists of the employee’s details: name and department.

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Description automatically generated

TASK:

1. Using Pandas library, read the CSV data file in Python into a variable ***emp\_detail***.
2. Display the first five rows of records of the data read in Step 1.
3. Using the NumPy object of the attendance record created earlier:
   1. Convert the NumPy object into Data Frame, name it ***attendance***.
   2. Merge the Data Frames ***emp\_detail*** and ***attendance*** into a new data frame, name it ***emp\_attendance***.
4. Add a column with name “**total**” into the ***emp\_attendance*** Data Frame that consists of the total no. of days the employee attended the event.
5. Add a column with name “**rate**” into the ***emp\_attendance*** Data Frame that consists of the attendance rate / percentage the employee throughout the 14 days.
6. Consider following rules in classify the attendance:
   1. Rate > 90% : Good
   2. 60% < Rate < 90% : Moderate
   3. Rate < 60% : Bad

Based on the grouping rule above, get the status for each of the staff and save the status in a new column “**status**” in the Data Frame.

1. Construct a function that returns the average attendance of all staff over the 14 days according to the department.