Task 2 - Problem Statement

Please find the ***task_2.py*** file in the ***2.Algorithm Implementation*** folder.

Modify the ***task_2.py*** to accomplish the following:

Given:

A set of test inputs, each containing

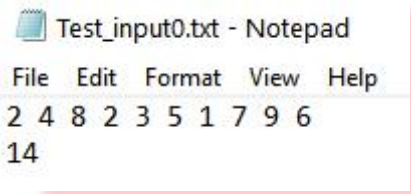
- A list of Digits and an integer Sum. One example test input is as follows:

  Example 1:

  Digits = 2 4 8 2 3 5 1 7 9 6

  Sum = 14

- A set of three test inputs are given in: *2.Algorithm Implementation/Test_inputs.* Test_input0 is given as a text file as follows:



Problem Statement:

Given a list of Digits, task is to find the combination of Digits whose total is equal to integer in Sum.

There may be multiple combinations, teams need to choose either one of them such that length of the returned list is as minimum as possible and digits chosen should be in the order as given in .txt file/s. Consider the same example:

Digits = 2 4 8 2 3 5 1 7 9 6

Sum = 14

Few possible combinations are:

[2, 4, 2, 6]

[2, 4, 2, 5, 1]

[4, 2, 8]

[8, 6]

Ideally, the combination selected should be [8, 6] as it consists least number of Digits. Also, the combination [6, 8] will not be acceptable as 8 appears before 6.

A "snippet" of outline code is given in ***task_2.py file***.

- Teams modify the ***findCombination()*** function in the file to return list of digits whose total is equal to Sum.
- A digit used in getting Sum cannot be used more than once until same digit/s is/are present multiple times (more than once).

The output of **task_2.py** for all test inputs is as following:

```
erts@erts:~/Desktop/Task 2/2. Algorithm Implementation$ conda activate RR-9999-stage1
(RR-9999-stage1) erts@erts:~/Desktop/Task 2/2. Algorithm Implementation$ python task_2.py

========================================

For Test_input0.txt

Given List of Digits = [2, 4, 8, 2, 3, 5, 1, 7, 9, 6]

Given Integer of Sum = 14

Combination of digits chosen = [8, 6]

Number of digits chosen = 2

========================================

Want to run your script on other text input files ? ==>> "y" or "n": y

========================================

For Test_input1.txt

Given List of Digits = [8, 6, 1, 5, 2, 0, 7, 2, 3, 9, 1, 3]

Given Integer of Sum = 18

Combination of digits chosen = [8, 1, 9]

Number of digits chosen = 3

========================================

========================================

For Test_input2.txt

Given List of Digits = [0, 9, 2, 5, 8, 5, 0, 1, 3, 2, 7, 4, 8, 4]

Given Integer of Sum = 12

Combination of digits chosen = [9, 3]

Number of digits chosen = 2
```

Instructions:

- Teams are **not allowed** to import any **library/module** apart from the ones installed in **Task 0** in ***task_2.py*** file. **If found so, it will lead to disqualification**.
- Do not edit the **main** function in ***task_2.py*** file. Teams have to modify **only** the above mentioned function.

- Once done with the Task, run ***test_task_2.py*** provided in *codes* folder. It will show the output of your program on terminal and also generate ***task_2_output.txt*** file in the same folder.

  Note: If you are not getting any output, check the following:

  1. You are running **task_2.py** and **test_task_2.py** using the conda environment created in Task 0.
  2. **task_2.py** file is present in the same folder (Do not change the name of .py file, it must be **task_2.py)**
  3. ***Test_inputs*** folder location is unaltered (Do not change the name of folder or contents of .txt files provided in that folder)
  4. Input and output arguments of findCombination() function is as specified (Do not change the name of function, it must be ***findCombination).***

Functions to edit:

findCombination(Digits_list, Sum_integer)

Input and Output arguments of above two functions should not be changed at any cost.

Functions not to edit:

main()

NOTE:

If team wishes to create some helper functions to solve the task, they must define it above ***findCombination()*** function and call in ***findCombination()*** function.