CSE4IP&CSE5CES(BU-1)
INTRODUCTION TO PROGRAMMING
PROGRAMMING FOR ENGINEERS AND SCIENTISTS
Semester 1, 2021

Assignment 2

Assessment: This assignment 2 is worth 25 % of the final mark for this subject.

Due Date: Sunday 30 May 2021 at 11.59 PM

Assessment

The assignment will be marked out of 100 (25 %). The following criteria will be considered when marking your assignment.

Program execution, Correct output, Design of logic, Standards, Documentation and Exception Handling.

Remember, a new test cases will be used to evaluate each question.

Question 1– Translating Text Messages [10 marks]

Requirements

To achieve full marks for this task, your implementation must satisfy all the above six criteria when writing your solution.

In addition, your solution must adhere to the following requirements:

- You **must** use exception handling when you read the file and the text message.
- You **must** prompt the user to enter the text message.
- You **must** handle the uppercase and lowercase.
- You **must** submit the implementation in a **.py** extension.

Question 2– Merge Big Files [10 marks]

Requirements

To achieve full marks for this task, your implementation must satisfy all the above six criteria when writing your solution.

In addition, your solution must adhere to the following requirements:

- You **must** use exception handling when you read the files.
- You **must** use **readline** method **(DO NOT USE read or readlines methods).**
- You **must** handle the uppercase and lowercase when sorting if needed.
- You **must** submit the implementation in a **.py** extension.

Question 3 – Pattern [10 marks]

Requirements

To achieve full marks for this task, your implementation must satisfy all the above six criteria when writing your solution.

In addition, your solution must adhere to the following requirements:

- You **must** use exception handling when you read the number of rows.
- You **must** prompt the user to enter the number of rows.
- The number of rows is less than 10. [1-9] you need to check the entered value.
- You **must** submit the implementation in a **.py** extension.

Question 4– Date and Calendar [30 marks]

Requirements

To achieve full marks for this task, your implementation must satisfy all the above six criteria when writing your solution.

In addition, your solution must adhere to the following requirements:

- You **must** use exception handling when you read any value.

- You **must** prompt the user to enter the input or inputs to test each function.
- You **must** create a function for each part.
- You **must** use day, month and year format (e.g. 2-5-2021 for 2 May 2021).
- You **must** submit the implementation in a **.py** extension.
- Part B depends on your solution to Part A, so make sure that you complete the parts in order. You should call/use the *isLeapYear* function from Part 1. Please see other parts, for example you also need to call/use *isValidDate* function to complete Part D, and so on.

Question 5 – Reading Bus Route Data [40 marks]

Requirements

To achieve full marks for this task, your implementation must satisfy all the above six criteria when writing your solution.

In addition, your solution must adhere to the following requirements:

- You **must** use exception handling when you read the file.
- You **must** create a function as requested.
- The outcome of each function is to print out the lists (instead of returning anything).
- You **must** submit the implementation in a **.py** extension.

- Question 1
  - Is there a need to ask for user input for the message or do we store the 'y r u l8' as a variable in the program?

    Yes, please see above.

- Question 2
  - Is there a need to strip the newline character (\n) from the names? Or it does not matter because it does not really affect the final output file produced?

    Doesn't matter as long as it doesn't affect the final output.

- Question 3

- o What is the maximum number of rows expected from user input? I ask because I'd like to know if it is safe to set a width of 5 when formatting the values?

  Less than 10

- Question 4
  - o For part f, what is the expected format of user input? I have currently suggested that the user separate day, month and year using hyphens (e.g. 2-5-2021 for 2 May 2021). Is that okay?

    Yes, 2-5-2021

- Question 5
  - o In the question description, there is this line:
    "The fourth field is the name of the suburb of the stop. It is enclosed between a pair of brackets, e.g. Bundoora."
    But the suburb is not enclosed between a pair of brackets in the text file. Did you mean that we have to place the suburb within brackets when we print the bus stop details? But in the example answer for part A, this is also not the case. Is this meant to be ignored?

    Yes, ignore it.

  - o For part B, what do you mean by "load the data into a list of bus stops"? I took it to mean that I create an empty dictionary called busStopList and then when loadData() function is called, the dictionary will be filled. Is that correct?

    Yes, dictionary.

  - o For the rest of part B's functions, the outcome is to print out the lists, correct (instead of returning anything)?

    Yes, print out and no need to return anything.