Assignment SU2 – Instructions

CMPG111 – Input, Processing, and Output

SU2_1

Write a Python program that asks the user to enter their age and the age of a friend.

General requirements:

1. Obtain the two age values from the user as strings (the default return type of the input() function). Print the concatenated values.
2. Obtain the two ages from the user as integers. Print the sum of the two ages.
    a. Calculate and print the average of the two ages.
3. Combine all of these steps into one Python script file.
4. **Submit your Python script (*.py) here on CodeGrade named: *SU2_1.py.***

Example run:

```
Concatenated values
Enter your age: 25
Enter the age of your friend: 22

Result: 2522

Sum values
Enter your age:  25
Enter the age of your friend: 22

Result: 47

Average age: 23.5
```

Notes:

- The program should utilise only concepts and techniques that have been covered in the course thus far. Only the following operators are allowed: +, -, *, /, //, %, **, ().
- All headings/labels/prompts should be presented.
- Include sensible comments in your script.
- Only use f-strings and placeholders when necessary for formatting.

SU2_2

Write a Python program that can determine the **area**, **perimeter** and **diagonal** of a rectangle that has a **length** and **width** given by the user.

Use the following formulas:

$$Area = length \times width$$

$$Perimeter = 2(length + width)$$

$$Diagonal = \sqrt{length^2 + width^2}$$

Example run:

```
Pyramid calculator

Enter the length (cm): 15
Enter the width (cm): 12

Area of the rectangle is 180.00 square cm
Perimeter of the rectangle is 54.0 cm
Volume of the pyramid is 19.209 cubic cm

**Rectangle dimensions:**
length = 15.0 cm      width = 12.0 cm
```

General requirements:

1. Add comments to your code that concisely explain what it does.
2. The following formatting requirements should be applied to the calculated values:
    a. Area is rounded to 2 decimals.
    b. Perimeter is rounded to 1 decimal.
    c. Diagonal is rounded to 3 decimals.
3. Add your name, surname, and student number as a comment on the first line.
4. **Submit your Python file (*.py) here on CodeGrade named: *SU2_2.py.***

Notes:

- The dimensions are displayed without formatting.
- The program should utilise only concepts and techniques that have been covered in the course thus far. Only the following operators are allowed: +, -, *, /, //, %, **, ().
- Only use f-strings and placeholders when necessary for formatting.

SU2_3

Write a Python script that converts between characters and ASCII values.

General requirements:

1. Ask the user to provide a character as input, then display the ASCII value of that character.
2. Ask the user to provide an ASCII value (int), then display the ASCII character that corresponds to that value.

Example run:

```
ASCII and Character conversion

Enter character: B
The ASCII value is:  66

Enter the ASCII value: 80
The Character is:  P
```

Notes:

- Add comments to your code that concisely explain what it does.
- Add your name, surname, and student number as a comment on the first line.
- **Submit your Python file (*.py) here on CodeGrade named: *SU2_3.py*.**
- The program should utilise only concepts and techniques that have been covered in the course thus far.
- Only use f-strings and placeholders when necessary for formatting.

Hint: Explore the functions **chr()** and **ord()**, you may utilise these functions in your solution.