CSC1015F Assignment 3A (Lab Question)

Control (if, for)

Assignment Instructions

THIS QUESTION TO BE COMPLETED DURING YOUR LABORATORY SESSION

This assignment involves constructing Python programs that use input and output statements, `'if'` and `'if-else'` control flow statements, and statements that perform numerical manipulation.

You may need to use additional attributes of the print statement that control what is printed at the end of each print statement (`end="\n"`) and separating each value in a list of values (`sep=" "`). For example:

```
print ("a","b","c")
```

displays "`a b c`", and

```
print ("a","b","c", sep="|", end=".")
```

displays "`a|b|c.`".

You will also want to print decimal numbers to two decimal places. Here are a couple of examples:

```
from math import pi
print ("The value of PI is %.2f." % pi)
```

displays "`The value of PI is 3.14.`", and

```
print ("My height is %.1f!" % 1.98120)
```

displays "`My height is 2.0`".

NOTE Your solutions to this assignment will be evaluated for correctness. *Assignments that follow will also be evaluated for the following qualities*:

- Documentation
  - Use of comments at the top of your code to identify program purpose, author and date.
  - Use of comments within your code to explain each non-obvious functional unit of code.
- General style/readability
  - The use of meaningful names for variables and functions.
- Algorithmic qualities
  - Efficiency, simplicity

These criteria will be manually assessed by a tutor and commented upon. In future assignments, up to 10 marks will be deducted for deficiencies.

Question 1 [30 marks]

Given a parcel length, l, width, w, and height, h, the volume is simply lwh. Postage charges are as follow:

Volume	Charge
Greater than zero, less than 18	14.65
18 or more, less than 140	5.95
140 or more, less than 440	12
440 or more, less than 2648	14.65
2648 or more	*too large*

Write a program called 'postage.py' that asks the user to enter parcel dimensions and computes and prints the volume, followed by the postage cost.

Sample I/O:

```
Enter the length:
5
Enter the width:
1.1
Enter the height:
4
The volume is 22.00.
Shipping cost is 5.95.
```

(User input is shown in **bold**.)

Values should be printed to 2 decimal places.

Sample I/O:

```
Enter the length:
50
Enter the width:
4
Enter the height:
40
The volume is 8000.00.
Shipping cost is not available.
Package too large.
```

(User input is shown in **bold**.)

The program will only accept values greater than zero for package dimensions.

Sample I/O:

```
Enter the length:
50
Enter the width:
-4
Enter the height:
40
Dimensions must be greater than zero.
```

(User input is shown in **bold**.)

Sample I/O:

```
Enter the length:
-50
Enter the width:
4
Enter the height:
40
Dimensions must be greater than zero.
```

(User input is shown in **bold**.)

Sample I/O:

```
Enter the length:
50
Enter the width:
4
Enter the height:
0
Dimensions must be greater than zero.
```

(User input is shown in **bold**.)

Submission

Create and submit to the automatic marker a Zip file called `ABCXYZ123.zip` (where ABCXYZ123 is YOUR student number) containing `postage.py`.

NOTES:

1. FOLDERS ARE NOT ALLOWED IN THE ZIP FILE.
2. As you will submit your assignment to the Automarker, the Assignment tab will still say "Not Complete" or "In Progress" or something similar. THIS IS COMPLETELY NORMAL. IGNORE IT.