Lab Assignment 1

1. Given a program called chaotic.py, please modify its input and output format. The former is changed into two input variables; the latter is changed from one column to two columns.

For example, this program illustrates a chaotic function. The input and output format for the new program is shown as follows:

```
This program illustrates a chaotic function.

Enter the first float number between 0 and 1: >>> 0.25
Enter the second float number between 0 and 1: >>> 0.26

 input   0.25                 0.26
 output
 1       0.73124999999999996  0.75036000000000003
 2       0.76644140625000001  0.73054749456000001
 3       0.69813501043853754  0.76770662573321646
 4       0.82189581879023044  0.69549933390028873
 5       0.57089401919693172  0.82594204073371924
 6       0.95539874836420990  0.56067096572112018
 7       0.16618672195441300  0.96064423228201989
 8       0.54041791206179257  0.14744687593470315
 9       0.96862893029980424  0.49025454937601765
 10      0.11850901017563877  0.97462960214932848
```

2. If we print two strings simultaneously, there is a space between them.

```
>>> print("hello", "world")
hello world
```

Make a little change to the above program to convert the space into an ampersand `'&'`.

```
>>> print("hello", "world")
hello&world
```

Hint: If you don't know how to do it, use `help(print)` to get some idea.

3. Write a function named `upperToLower`. The parameter is a letter with upper case, what you need is convert the upper case into lower case. You should use the knowledge of ASCII to solve this problem.

```
>>> print(upperToLower('A'))
A
```

You **don't** have to consider the situation if the parameter is not a letter with upper case.

4. Write a function to decrease the number of decimal places of `pi`. The parameter is the decimal places of the new `pi`.

```
>>> print(lessDecimalPlaces(2))
3.14
>>> print(lessDecimalPlaces(3)) # 3.142 rather than 3.141
3.142
```

   Note:
   - You should use `pi` from the module `math`.
   - The return value of your function should be a `float` rather than a `str`.
   - The parameter is less than `15`.

5. Define a class `EquilateralTriangle` (等边三角形), whose attribute is side length. You should provide a function (method) to get its area and its height.

```
tri1 = EquilateralTriangle(2) # side length is 2
print(tri1.area())
print(tri1.height())
```

Submission

1. Submit your Source Code
   Please compress your files including the source code `*.py` to a package named "`StudentID_Name (ProjectNumber_VersionNumber).zip`", such as "`519030910000_XXX (Assignment1_v1).zip`", then send it to your TA. The final version would be checked and scored.
2. The deadline for the first lab assignment is 11 pm, on 2019-11-01 (Friday).