Tutorial 3

1. Rewrite the following `'for'` loop as a `'while'` loop.

```
X = 10
for i in range(1, X+1):
    if X % i == 0:
        print(i)
```

2. Write a program that prompts for an integer and prints the integer. If something other than an integer is entered, the program keeps asking for an integer.

```
*** Integer Input ***
Please enter an integer: 3a
Error! Please enter an integer: 3.5
Error! Please enter an integer: 35
Integer entered is 35.
*** End ***
```

   Hint: Use string `isdigit()` method to decide if there are only numbers inside a string.

3. Analysis of Student Marks

   Given below student marks of a course

Student	1	2	3	4	5	6	7	8	9	10
Mark	35	40	50	60	80	88	20	40	75	99

   Count how many students are under each grade, if mark criteria for each grade is as follow

Grade	Marks
A	80~100
B	60~79
C	50~59
D	0~49

   and find the overall average μ, standard deviation σ & variance σ^2.

$$\mu = \frac{\sum_{i=1}^{N} x_i}{N}, \sigma^2 = \frac{\sum_{i=1}^{N} (x_i - \mu)^2}{N}$$

```
*** Analysis of Student Marks ***
A : 1
B : 4
C : 1
D : 4
Average = 58.7
Variance = 603.81
Standard Deviation = 24.57
*** End ***
```

   Hint: Use a tuple to store the marks, for eg: `marks=(35,40,..)` and access individual mark using an index to the tuple, for eg: `marks[index]`.