Tutorial #2
Variables, Types & Operators

1. Fill in the blanks in each of the following

a) Programs are generally written to solve **_____.**

b) The software development method advocates the following steps:

- _____ the problem
- _____ a solution
- _____ as a program

c) A value fixed in stone is known as a **_____.**
d) The name given to a variable is called an **_____.**
e) It is the programmer's decision to name a variable but **_____ _____** would suggest naming it something that identifies the data value you are working with.
f) Name the four data type groupings . _____, _____, _____, _____

g) If the integer variables a,b,c contain 11,55 and 2 respectively what happens when the following three assignment statements are executed? Assume that they are executed with the initial values specified above.

(i) a = a + b - c
(ii) c = c % 3
(iii) c = (a + 22) % 2

h) What is the numeric value of each of the following expressions as evaluated by Python:

4 + 6 * 3	16 % 2
6 / 3 * 7	17 % 2
18 /2 + 14 /2	28 % 5
16 / 2	28 % 5 * 3 + 1
17 / 2	(2 + 3) * 4
28 // 5	20 / (4 + 1)

i) What happens when each of the three statements is executed? The variables a,b and c contain 23 3 and 1 respectively.

(i) a += b
(ii) c *= c
(iii) b %= 3

j) Write the Python code to calculate your age in seconds ,the user should enter their age in years, a whole number

k) Suppose the retail cost of a book is €24.95, but bookshops get a 40% discount on the retail cost. Shipping costs €2 per copy. Write the Python code to determine and print the wholesale cost for a number of copies entered by the user, print the shipping cost and the total cost of the books.

l) Write the code to read in your first and surnames, separated by a space, extract your initials to variables and output them to the console, ensure they are capitalised.

PTO

m) Given the following string declaration: what is the output generated by the following statements:

```
string1 = "Python"
print(string1[1:])
print(string1[0:3])
print(string1[:4])
print(string1[:-1])
print(string1[-4:-2])
```