­­­­­­**Assignment 1**

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**1. In the below elements which of them are values or an expression? eg:- values can be integer or string and expressions will be mathematical operators.**

Answer:-

\* (expression, multiplication mathematical operators)

'hello' (value, string)

-87.8 (value, data type float)

- (expression, minus mathematical operator )

/ (expression, division mathematical operator)

* (expression, addition mathematical operator)

6 (value, data type integer)

**2. What is the difference between string and variable?**

Answer:- A string is a value which represents text or a collection of text or characters. In python, it is generally written under signle inverted commas or double inverted commas such as ‘shivam’ or “Shivam” and ‘%ghdvg’ or “‘%ghdvg” Whereas, Varibale is a property that is used to value of any data types. For example in Python, a variable can take value of numeric data types, non-numeric data types or boolean data types.

**3. Describe three different data types.**

Answer:- In Python Programming langauge, there are mainly 7 data types such as text data type, Numeric data type, Sequence data type, Mapping data type, Sets data type, Boolean type, Binary type, None types. Here, three data types described below:-

(i). Text data type:- Str

Str is known as string data type which is used for collection of characters or to represntation of texts in python.

(ii) Numeric data type:- Numeric data type in python used to represents numerical value whether that value is in integer, float, and in complex format.

Integer are 3,1,2,5 descrete numerical values.

Floats are 3.0,1.3,3.14 are whole decimal values

Complex numeric data are 3+2j are complex numbers which contains real 3 and imaginary part 2j.

(III) Boolean: In python, the Boolean data types are are either represented in the form of True and False or in the form 0 and 1.

**4. What is an expression made up of? What do all expressions do?**

Answer: An expersssion is made up of using combination of numbers, strings,list,tuples, sets,dictionary, variable and operators. Expression are intended to do give output or a desired value.

**5. This assignment statements, like spam = 10. What is the difference between an expression and a statement?**

Answer:- Here is the difference between expression and Statement as given below:-

|  |  |
| --- | --- |
| Statement | Expression |
| It represents action or command that does something.  Example:- Print statement, and assignment statement.  Spam=10  Print(spam) | It is combination of variables and operators which is intended to give value.  Example: 5\*5,’Shivam’+’Kumar’ |

**6. After running the following code, what does the variable bacon contain?**

**bacon = 22**

**bacon + 1**

Answer: As variable bacon assigned value to 22 so, varibale cotain 22 value after running a code.

**7. What should the values of the following two terms be?**

Asnwer:-

'spam' + 'spamspam'

It will conact ‘spam’ with the ‘spamspam’ strings together

Output would be 'spamspamspam'

'spam' \* 3

It will concat the string itself ‘spam’ three times

Output would be 'spamspamspam'

**8. Why is eggs a valid variable name while 100 is invalid?**

Answer:- This is beacuse as per variable assigning convention, a variable name should start with a letter and underscore. Along with this, variable can not start with the numbers. Hence, egggs is valid variable whereas 100 is an invalid variable name.

**9. What three functions can be used to get the integer, floating-point number, or string version of a value?**

Answer:- We can use **typecasting method** by using following function to data type veriosn of a value.  
 (i) integer :- int(value)

(ii) floating:- float(value)

(iii) string :- str(value)

Suppose, if we want to covert 3.2 number to integer number then we can use

Int(3.2) to convert into integer value 3

Str(3.2) to convert into string value ‘3.2’

If, float(2) written, it will convert float value 2.0.

**10. Why does this expression cause an error? How can you fix it?**

'I have eaten ' + 99 + ' burritos.'

Answer:- If we look into the expression, we find that 'I have eaten ' is a data type string and ' burritos.' Is also a string but the 99 is a data type integer. As, there is a addition operator performed on the for concatenation of string. To perform concatenation we have to convert the 99 integer value **to string using type casting method.**

We can write the correct expression to run code successfully as:-

'I have eaten ' + str(99)+ ' burritos.'

Or

'I have eaten ' + ‘99’ + ' burritos.'