

ASSIGNMENT - 1

Q1. 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:

* is an expression (multiplication)

'Hello' is a value (string)

-87.8 is a value (float integer)

- is an expression (subtraction)

/ is an expression (division)

+ Is an expression (addition)

6 is a value (integer)

Q2. What is the difference between string and variable?

Answer: A string can be called as an information or data which can be stored in a variable whereas the variable is what stores that information (string).

For eg: If our string is "Hi"

If the variable storing "Hi" is Var_x, then

Var_x = "Hi"

"Hi" is the information/data. Var_x is the variable assigned to it.

Q3. Describe three different data types.

Answer: List- These are ordered, heterogenous (can store different kinds of data), mutable (can be modified), use [] brackets.

Eg- [1,2,3,"Hi", "apple", ["yes", "no"]]

Tuple- These are ordered heterogenous, immutable, use () brackets.

Eg- (1,2,3,"Hi")

Dictionary- These are unordered, heterogenous, mutable & use {} brackets. These store data in the form of key:value pair.

Eg- {'Name': 'Mansi', 'Age': 23, 'Assignment': 'Python Basics'}

Q4. What is an expression made up of? What do all expressions do?

Answer: Expressions consist of variables, operators and operands. All expressions produce some kind of value. For eg- $10 + 10 + (20 * 10)$ is an expression and it will give us a value of 220.

Q5. This assignment statements, like `spam = 10`. What is the difference between an expression and a statement?

Answer: `Spam = 10` is a statement. Expressions usually produce a value like $1+1$, $2*2$ or $(5+8)*x$ whereas statements do not produce a value. Instead, Statements usually state declarations or assignments. Eg- `x=1`, `x = 'hello'` (it doesn't produce a value, it just states)

Q6. After running the following code, what does the variable `bacon` contain?

```
bacon = 22
```

```
bacon + 1
```

Answer: After running this code, the variable `bacon = 22` because even though $bacon + 1 = 23$, we never assigned `bacon = bacon + 1`. Therefore, it still holds the same value.

Q7. What should the values of the following two terms be?

```
'spam' + 'spamspam'
```

```
'spam' * 3
```

Answer:

1. 'Spamspamspam'

2. 'spamspamspam'

Q8. Why is eggs a valid variable name while 100 is invalid?

Answer: 'eggs' is a string therefore it is a valid variable whereas 100 is a number which cannot be assigned as a name to the variable (it confuses the compiler if it is a number or a variable).

Q9. What three functions can be used to get the integer, floating-point number, or string version of a value?

Answer: Integer: int(), Floating-point: float(), String: str()

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

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

Answer: The compiler can only concatenate string values like 'I have eaten ' + ' burritos.' but not an integer and string together.

To fix it we can convert the integer 99 into a string using "" like "99".
