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.

Answers:

Expressions:

\*

-

/

+

Values:

'hello'

-87.8

6

2. What is the difference between string and variable?

Ans: String:

String is a continuous sequence of letters or numbers or special symbols or even words that are enclosed by single or double quotes and are a datatype themselves and could be stored in a variable. Example: str= ”alpha” , here alpha is a string that is stored in a variable str.

Variable:

Variables are named storage space where we can store values such as numbers ,strings and other datatypes.

3. Describe three different data types.

Ans: 1. Numeric Data Types: Numeric data types are used to represent numbers. They can be further categorized into integer and floating-point types. Examples of numeric data types include:

\*Integer: Used to represent whole numbers without fractional parts. For example, `int` in Python.

\* Floating-Point: Used to represent numbers with fractional parts. For example, `float` in Python.

2. String Data Type: A string data type is used to represent a sequence of characters. It is commonly used to store and manipulate textual data. Strings are typically enclosed in quotation marks (single or double) in many programming languages. For example,a= `str` in Python.

3. Boolean Data Type: A boolean data type represents a logical value that can be either true or false. It is often used in conditional statements and logical operations. Example:`True` or `False`

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

Ans: Expressions are made up of mathematical operators and are mostly used for representing mathematical expressions that have specific results. example: a+b=100

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

Ans: spam=10 is a assignment statement and not an expression because in assignment statement a value is assigned to a variable like in this case the value,’10’ is assigned to the variable, ’spam’ expression on other hand contain combination of variables and mathematical operators.

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

bacon = 22

bacon + 1

Ans: The variable ‘bacon’ will contain the value 22 only because instead of expression ‘+=’ it is just given ‘+’ so the value will not be incremented.

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

'spam' + 'spamspam'

'spam' \* 3

ANS: The printed values of both 'spam' + 'spamspam' and 'spam' \* 3 will return the same thing ‘spamspamspam’ as in the first one the + acts as a concatenation operator for concatenating two strings and for the second one \* operator acts as a repeating operator and it repeats 3 times as mentioned.

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

Ans: There are certain rules for naming variables and that constricts that a variable should start with a letter or an underscore and as 100 starts with a digit it can’t be accepted as a variable.

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

ANS: int(), str() and float() are the three functions that can be used to get the integer ,string and floating point versions of the value.

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

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

ANS: This expression causes an error because the concatenation operator only concatenates strings together and strings are identified by enclosing them in single or double quotes which 99 doesn’t have so it identifies it as a integer and causes error.