# Assignment 1

**1. In the below elements which of them are values or an expression?**

\* → Expression (operator)  
'hello' → Value (string)  
-87.8 → Value (float)  
- → Expression (operator)  
/ → Expression (operator)  
+ → Expression (operator)  
6 → Value (integer)

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

A string is a sequence of characters enclosed in quotes (e.g., 'hello').  
A variable is a name that stores a value, which can be of any data type.  
Example: name = 'hello' (Here, 'name' is a variable and 'hello' is a string.)

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

1. Integer (int): Whole numbers like 5, -42.  
2. Floating-point (float): Decimal numbers like 3.14, -87.6.  
3. String (str): Text data enclosed in quotes, like 'Python'.

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

An expression is made up of values and operators (like +, -, \*, /). All expressions evaluate to a single value.  
Example: 3 + 4 evaluates to 7.

**5. What is the difference between an expression and a statement?**

An expression evaluates to a value (e.g., 2 + 3).  
A statement performs an action (e.g., assignment like spam = 10).

**6. After running the following code, what does the variable bacon contain?**  
bacon = 22  
bacon + 1

The variable bacon still contains 22 because bacon + 1 does not update the value of bacon.

**7. What should the values of the following two terms be?**'spam' + 'spamspam'  
'spam' \* 3

'spam' + 'spamspam' → 'spamspamspam'  
'spam' \* 3 → 'spamspamspam'

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

'eggs' is valid because variable names must start with a letter or an underscore.  
'100' is invalid because variable names cannot start with a digit.

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

int() → converts to integer  
float() → converts to float  
str() → converts to string

**10. Why does this expression cause an error? How can you fix it?  
'I have eaten ' + 99 + ' burritos.'**

It causes a TypeError because you can't concatenate a string with an integer directly.  
Fix: 'I have eaten ' + str(99) + ' burritos.'  
Or: f'I have eaten {99} burritos.'