Make sure you have the tutorial open when answering the following questions. All of the questions in this module use the Python Tutorial at:

* <http://www.letslearnpython.com/learn/>

Note: You should use the black area of Repl to try the simple Python expressions listed in the questions below.

**Lesson 4: Strings – Strings and Lesson 4: Strings – Examples**

1. What is a string? Explain in words and provide an example.

Characters, like letters or symbols, or a bunch of characters put together, like words. E.g. “What’s for dinner?”

1. Explain why typing “apple” works and why typing apple without quotes gives an error.

Rule: If you want Python to read a string, it must be inside quotes.

1. Is there a difference between typing “apple” and ‘apple’. (i.e. is there a difference between using single or double quotes.

Python treats both of these expressions the same way:

1. Explain why typing “apple’ gives an error.

It gives an error as it uses a ‘ and a “

1. Explain why “2 + 5” does not equal 7 and how it is different from typing 2 + 5.

It doesn’t equal 7 as it uses “ “. This results in python thinking this is a string or a statement.

**Lesson 4: Strings – Operators**

1. Type “appl” + “e” and explain what it does. Why do you think this works?

It says “apple” since it adds the appl to e.

1. Type “apple” - “e” and explain what it does. Why do you think this gives an error?

It uses a subtraction sign instead of addition, and you cannot subtract a “E” from the word “Appl”

1. Type “Hello” \* 10 and explain what it does. Why do you think this works?

It says Hello ten times, as in the formula, its Hello multiplied by 10.

1. Type “Hello” / 10 and explain what it does. Why do you think this gives an error?

It uses a division sign instead of a multiplication sign, and you cannot divide the word, Hello, 10 times as that doesn’t make sense.

1. The ***concatenation*** operator (+) is very useful for working with strings. Explain ***concatenation*** with words and examples.

Concatenation is a little bit like adding - we use it to put strings together side by side. E.g. “HAHA” \* 250

**Lesson 4: Strings – Indexes and Lesson 4: Strings – Indexes Examples**

1. Create a string using the letters in your first name and write down the ***index*** number for each letter.

“S” + “U” + “K” + “H” +”M” + “A” + “N”

0 1 2 3 4 5 6

1. Explain why print(“Hello!”[4]) does not print “l”.

The letter “H” is at the index and that means “o” has an index of 4 and “l” has an index of 3

1. What does print(“Hay, Bob!”[4]) print? For a hint try print(“Hay, Bob!”[3]) and print(“Hay, Bob!”[5])

It prints the “,” that is in-between the Hay and Bob.

1. Answer True or False: “String indexes in Python begin at 0”. Do you need to know the reason for this or do you just need to remember this?

True, and you would only need to remember this so you don’t mess up in an python code.

**Lesson 5: Variables**

1. Complete “Lesson 5: Variables – Save a Value” by typing the sample commands in the black area of the IDE.
   1. What do you get if you type puppies / 3?

You get an error as puppies isn’t defined as a variable.

* 1. Why doesn’t typing kittens / 3 work?  
     Kittens isn’t defined as a variable.

1. Complete “Lesson 5: Variables – Math Operators” by typing the sample commands in the black area of the IDE.
   1. Explain what happens for following sequence of commands:
      * colour = “red”
      * puppies = 36
      * colour + puppies

It’s because you use a number and a letter so it cannot add “red” to 36

1. Complete “Lesson 5: Variables – String Operators” by typing the sample commands in the black area of the IDE.
   1. Explain why the following commands give different results:
      * Color + day \* fishes

It gives a different result as, according to the Order of operations, the expression must be calculated first. Python did the multiplication side of the operation first - so you got the word 'Monday' times 3 - and then concatenated that with the word 'yellow'.

* + - ( Color + day ) \* fishes  
      This will give the right answer as: “Python knows that it needs to concatenate "yellow" and "Monday" first, and then multiply the whole thing by three”

1. Complete “Lesson 5: Variables – Indexes” by typing the sample commands in the black area of the IDE.
   1. What is the index of ‘r’ in “watermelon”?

4

* 1. Write an expression using mynumber to return ‘r’

“watermelon” [4]

1. Integers (numbers) and Strings (letters) are different data types in Python?
   1. What doesn’t “friend” + 5 work?

You cannot mix strs and ints

* 1. What is the difference between the ***int*** and ***str*** data types?

Int is used for whole numbers whereas str is used for words.