

- Ram is used for long-term memory? False
- The clear() method empties a list and leaves you with []? True
- The append() method adds an element to the start of a list? False
- Python is an interpreted language: True
- Sequence[-1] returns the first element of a sequence. False

Short Answer

1. What does the 'CPU' do in a computer
 - The 'brain' of the computer
 - Everything involves the cpu in one way or another.
 - Processes Everything
 - Responsible for running the code that we give it. (Only understands basic instructions in a basic language)
2. What does the 'input()' function do in Python? What data type do you get back?
 - Gets the user's input.
 - Stores whatever they input as a string
 - Takes in a prompt to be displayed to the user.
3. Say we have some code like this:

```
num1 = 7**2
num2 = 7 / 2
num3 = 7 // 2
print(num1, num2, num3)
```

What will this print: '49 3.5 3'

4. List 3 datatypes:
 - String
 - Float
 - Integer
 - Boolean
 - List
 - Tuple
 - type
5. $[1, 2, 3] + [4, 5] = [1, 2, 3, 4, 5]$
6. Range:
 - range(10, 20) = [10, 11, 12, 13, 14, 15, 16, 17, 18, 19]
 - range(50, 60, 2) = [50, 52, 54, 56, 58]
 - range(-10, -25, -3) = [-10, -13, -16, -19, -22]
 - range(20, 10, -1) = [20, 19, 18, 17, 16, 15, 14, 13, 12, 11]
7. list_sample = [1, 2, 3]
 list_sample = list_sample * 2
 list_sample.append(1)
 print(list_sample) # [1, 2, 3, 1, 2, 3, 1]
 list_sample.sort()
 print(list_sample) # [1, 1, 1, 2, 2, 3, 3]

```
8.      my_string = "ThE BrOwN FoX RaN to The Farm"
        my_string.count("T") # 2
        my_string.lower() # "the brown fox ran to the farm"
        my_string.replace("a","z") # ThE BrOwN FoX RzN to The Fzrm
```

Open Ended Questions

1. In Computing, what do hardware and software do? Just a brief description is fine.
Hardware is the components that make up the computer. Software is the coding.
We need both hardware and software.
2. What does it mean when we're taking a 'slice' of a sequence (strings and lists)
Taking a part of it.
Slices return substrings or sublists
Indexes return characters or individual items
3. What are data types? What purpose do they serve?
A way to categorize information within a program.
It tells the program how it can interact with a given piece of data.
Such as giving operators and methods.
4. Define what a variable is.
A 'placeholder' value.
A container that has data within it. The data can be of any data type, and has methods and operations that can be performed on it.
5. What is mutable vs immutable?
Mutable Data can be changed after assignment
Immutable Data cannot be changed after assignment.