

# CSPP Week - 14

Time: 1 Hour

Score: 40 Points

1. You are given the string `s = "PythonProgrammingLanguage"`. Answer the following sub-questions using string indexing and slicing: **10 \* 1 = 10 Points**
- Extract the first character of the string.
  - Extract the last character of the string.
  - Extract the substring `"Python"` from the string.
  - Extract the substring `"Programming"` from the string.
  - Extract the substring `"Language"` using negative indexing.
  - Extract the substring `"thonPro"` from the string.
  - Extract every alternate character from the string.
  - Extract the string in reverse order.
  - Extract the substring `"ProgrammingLanguage"` without using the start index.
  - Extract the substring `"yorr"` using slicing with a step.

2. Given that three lists are originally set up with the following code: **15 \* 1 = 15 Points**
- `L = [ "Y" ]`
  - `A = [ 1, L, 2 ]`
  - `B = A`
  - `C = [ 1, L, 2 ]`

Fill out the following table so that it shows the values in each variable after the line of code in the left column has run. Any changes made should be cumulative (if A is changed in row 1, the change should carry over to row 2).

Code	List A	List B	List C
Initial List	[ 1, ["Y"], 2 ]	[ 1, ["Y"], 2 ]	[ 1, ["Y"], 2 ]
A.remove(2)			
B[0] = 9			
C.append(5)			
L.append("Z")			
A = [3, 4]			

3. You are given the list **numbers = [10, 20, 30, 40, 50]**  
and the 2D list **matrix = [[1, 2], [3, 4], [5, 6]]**.

**10 \* 1 = 10 Points**

Answer the following sub-questions using list and 2D list operations:

- Create a new list `colors` containing the elements `"red"`, `"blue"`, and `"green"`.
  - Access the third element in the list `numbers`.
  - Append the number 60 to the list `numbers`.
  - Extract the first three elements from the list `numbers`.
  - Find the number of elements in the list `numbers`.
  - Access the element in the second row and first column of `matrix`.
  - Modify the value at the third row, second column of `matrix` to 10.
  - Append a new row `[7, 8]` to the 2D list `matrix`.
  - Create a new 2x2 matrix with elements `[5, 6]` and `[7, 8]`.
  - Loop through each element in `matrix` and print each element.
4. Trace the below code with trace tables and find the output

**2 \* 2.5 = 5 Points**

<pre>def fun(s):     result = ""     for char in s:         if char in "aeiouAEIOU":             result += char     return result print(fun("Programming"))</pre>	<pre>def fun(s):     result = ""     for i in range(1, len(s), 2):         result += s[i]     return result print(fun("abcdefg"))</pre>
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