

## Chapter Quiz

### Coding and Programming

#### Chapter 2 (For Student)

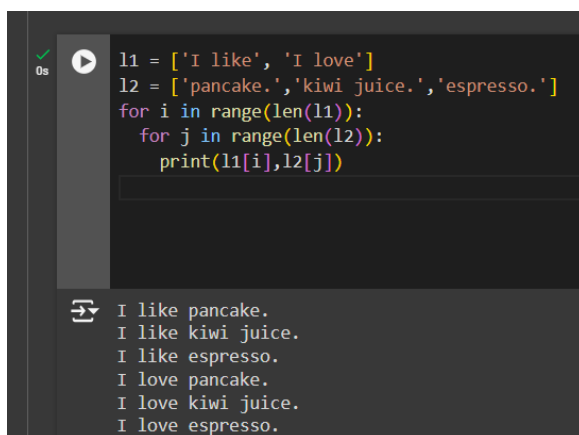
Maximum Marks: 35

Q. 10-01

If there are two lists l1 and l2 with the following strings, use the combination of l1 and l2 to print as follows. 5M

```
l1 = ['I like', 'I love']  
l2 = ['pancake.', 'kiwi juice.', 'espresso.']
```

Coding guideline: Use a nested loops and print it out.



The screenshot shows a code editor with a dark background. On the left, there is a vertical toolbar with a play button icon and a '0s' timer. The main area contains the following Python code:

```
l1 = ['I like', 'I love']  
l2 = ['pancake.', 'kiwi juice.', 'espresso.']  
for i in range(len(l1)):  
    for j in range(len(l2)):  
        print(l1[i], l2[j])
```

Below the code, the output is displayed as a list of strings, each on a new line:

```
I like pancake.  
I like kiwi juice.  
I like espresso.  
I love pancake.  
I love kiwi juice.  
I love espresso.
```

**Output:**

```
I like pancake.  
I like kiwi juice.  
I like espresso.  
I love pancake.  
I love kiwi juice.  
I love espresso.
```

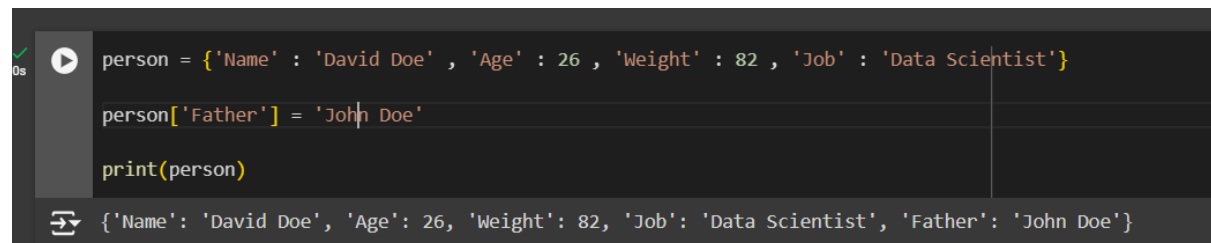
Q. 11-01

The person dictionary is defined as follows. Add a new item to this person dictionary with the key 'Father' and the value 'John Doe'.

```
1 person = {'Name' : 'David Doe', 'Age' : 26, 'Weight' : 82, 'Job': 'Data Scientist' }
```

Coding guideline: After defining the person dictionary, write code to add new items.

5M



```
person = {'Name' : 'David Doe' , 'Age' : 26 , 'Weight' : 82 , 'Job' : 'Data Scientist'}  
person['Father'] = 'John Doe'  
print(person)  
{'Name': 'David Doe', 'Age': 26, 'Weight': 82, 'Job': 'Data Scientist', 'Father': 'John Doe'}
```

Output:

```
{'Name': 'David Doe', 'Age': 26, 'Weight': 82, 'Job': 'Data Scientist', 'Father': 'John Doe'}
```

Q. 12-01

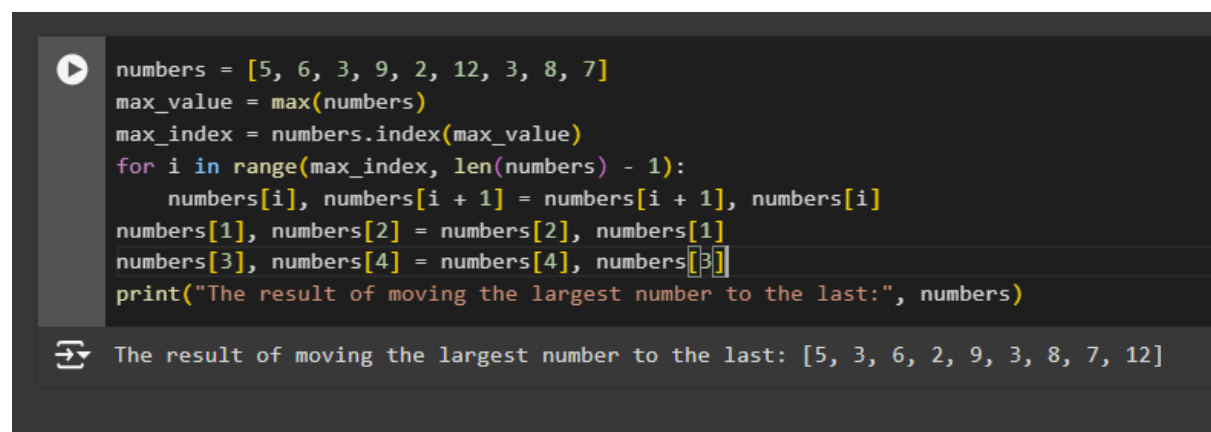
When using tuple data, the values of two variables can be swapped without using a temporary variable. Using this exchange method, write a program that replaces the largest value of 12 in the given list as the last one.

5M

**Input:** Given list = [5, 6, 3, 9, 2, 12, 3, 8, 7]

**Output:** The result of moving the largest number to the last: [5, 3, 6, 2, 9, 3, 8, 7, 12]

Coding guideline: Use a for loop. When exchanging values in a list, additional variables such as temp should not be used




```
numbers = [5, 6, 3, 9, 2, 12, 3, 8, 7]  
max_value = max(numbers)  
max_index = numbers.index(max_value)  
for i in range(max_index, len(numbers) - 1):  
    numbers[i], numbers[i + 1] = numbers[i + 1], numbers[i]  
numbers[1], numbers[2] = numbers[2], numbers[1]  
numbers[3], numbers[4] = numbers[4], numbers[3]  
print("The result of moving the largest number to the last:", numbers)  
The result of moving the largest number to the last: [5, 3, 6, 2, 9, 3, 8, 7, 12]
```


Q. 13-01

The two-dimensional array `a` contains the values `[[1, 2], [3, 4], [5, 6]]`. Change this two-dimensional array to a one-dimensional array like `[1, 2, 3, 4, 5, 6]`, and print it out. 5M

**Coding guideline:** Use a for loop. Define a new array and put the elements of `a` into this array.

```
0s  old_array = [[1, 2], [3, 4], [5, 6]]
new_array = []
for sublist in old_array:
    new_array.extend(sublist)

print(new_array)
```

 [1, 2, 3, 4, 5, 6]


Q. 14-01


There is a dictionary variable `maria` as follows. In this dictionary variable, courses such as 'Korean' and 'English' and their scores are stored as key:value. Print the average score of 89.25 for maria's subject scores.

**Coding guideline:** Use the dictionary methods `values()` and `len()` functions.

5M

```
maria = {'korean': 94, 'english': 91, 'mathematics': 89, 'science': 83}
```

```
0s  maria = {'korean': 94, 'english': 91, 'mathematics': 89, 'science': 83}
scores = maria.values()
average_score = sum(scores) / len(scores)
print("average_score is :", average_score)
```

 average\_score is : 89.25

Q. 15-01

Declare a nested dictionary school as follows. Next, use the deepcopy() function of the copy module to write a program that 'copy' to another variable, school2. (Check that school and school2 are different variables through the is operator.)

Coding guideline: Print so that the result of school is school2 is false.

```
import copy
school = {'kim': {'age': 16, 'hei': 170, 'grade': 3}, 'lee': {'age': 15, 'hei': 168, 'grade': 2},
          'choi': {'age': 14, 'hei': 173, 'grade': 1}}
```

5M

```
import copy
school = {
    'kim': {'age': 16, 'hei': 170, 'grade': 3},
    'lee': {'age': 15, 'hei': 168, 'grade': 2},
    'choi': {'age': 14, 'hei': 173, 'grade': 1}
}

school2 = copy.deepcopy(school)
print(school is school2)
```

False

Q. 16-01

There is a scores tuple as follows. This tuple contains information about four students. In this information, the student's name and English, math, and science grades form a tuple. For example, 'David Doe' has an English score of 88, a math score of 95, and a science score of 90.

Extract only math scores by unpacking using the zip function on the score's tuple. Write a code that calculates the average of these extracted math scores.

5M

```
scores = (('DongKyu Park', 88, 95, 90), ('YoungMin Kang', 85, 90, 95), ('DongMin Park', 70, 90, 80), ('SeungJoo Hong', 90, 90, 95))
```

Code guideline: Use the zip function to solve the problem.

```
1 # Possible answer 2: Using sum() function
2 scores = (('DongKyu Park', 88, 95, 90), ('YoungMin Kang', 85, 90, 95), ('DongMin Park', 70, 90, 80), ('SeungJoo Hong', 90, 90, 95))
3 _, _, math, science = zip(*scores)
4
5 print('Students' average math scores are {0:5.2f}'.format(sum(math)/len(math)))
```

Students' average math scores are 91.25.

```
scores = (('DongKyu Park', 88, 95, 90),
          ('YoungMin Kang', 85, 90, 95),
          ('DongMin Park', 70, 90, 80),
          ('SeungJoo Hong', 90, 90, 95))

names, english, math, science = zip(*scores)
average_math = sum(math) / len(math)

print(f'Students' average math scores are {average_math:.2f}.')
```

Students' average math scores are 91.25.