Assessment answers

# Task

The partial program below creates a list of the days of the week and assigns it to days.

| 1  2  3 | days = ["Monday", "Tuesday", "Wednesday",  "Thursday", "Friday",  "Saturday", "Sunday"] |
| --- | --- |

Question 1: If the lines below were added to the program, what would the program output be?

| 4  5 | item = days[3]  print(item) |
| --- | --- |

| Answer | Thursday |
| --- | --- |

Question 2: If the lines below were added to the program, what would the program output be?

| 4  5  6 | index = 1  item = days[index+1]  print(index, item) |
| --- | --- |

| Answer | 1 Wednesday |
| --- | --- |

Teacher note: The value of index is also printed to make sure the learners don’t think that index has not been incremented.

Question 3: Fill in the gaps in the code below, so that the items in the list of days are displayed on the screen:

| 4  5 | for day in days :  print( day ) |
| --- | --- |

# Task

Read the program below:

| 1  2  3  4  5  6  7  8  9 | planets = ["Mercury", "Venus", "Earth",  "Mars", "Jupiter", "Saturn",  "Uranus", "Neptune"]  index = int(input())  planet = planets[index]  if index < 3:  print("It’s a rocky planet")  elif planet[1] in [‘a’, ‘e’]:  print("The second letter is", planet[1]) |
| --- | --- |

Question 1: If the user types 1 on the keyboard, what will be the output of this program when it is executed?

| Answer | It’s a rocky planet |
| --- | --- |

Teacher note: The objective is not to assess knowledge of zero-based indices again. The answer will be the same regardless of whether the learner thinks that the planet is Mercury or Venus.

Question 2: If the user types 3 on the keyboard, what will be the output of this program when it is executed?

| Answer | The second letter is a |
| --- | --- |

Teacher note: The objective is not to assess knowledge of zero-based indices again. The answer will be the same regardless of whether the learner thinks that the planet is Earth or Mars.

Question 3: Suppose that the elif in line 8 is modified to an if. If the user types 1 on the keyboard, what will be the output of this program when it is executed?

| Answer | It’s a rocky planet  The second letter is e |
| --- | --- |

Question 4: The ‘rocky planets’ are the first four planets of the solar system. How would you modify the program so that all planets are correctly classified (i.e. the message “It’s a rocky planet” is displayed for all four of them).

| Answer | Change the condition in line 6 to index < 4 or index <= 3. |
| --- | --- |

# Task

Read the program below and answer the questions. You can use the reference table at the bottom of the page to see how the index method works.

| 1  2  3  4 | alphabet = 'abcdefghijklmnopqrstuvwxyz'  letter = 'c'  position = alphabet.index(letter)  print(position) |
| --- | --- |

Question: What will be the output of this program?

| * 1. 2   2. 3   3. d   4. ‘c’ + 1 | | Answer | A | | --- | --- | |
| --- | --- | --- | --- |

Question: The program below is an extension of the previous one. Fill in the gaps, so that the program prompts the user to enter a word and then iterates over each letter in the word to display its position in the alphabet.

| 1  2  3  4  5  6 | alphabet = 'abcdefghijklmnopqrstuvwxyz'  print("Enter a word:")  word = input()  for letter in word :  position = alphabet.index(letter)  print(position) |
| --- | --- |

Reference table

|  | string.index(substring)  e.g. word.index("intro")  e.g. name.index("A") | Search in a string for the first occurrence of a substring and return its (zero-based) index. |
| --- | --- | --- |

# Task

The program below converts a binary number to its decimal equivalent. The questions that follow **do not require you to understand how it works**.

| 1  2  3  4  5  6  7  8 | binary = input()  decimal = 0  weight = 1  for digit in reversed(binary):  if digit == '1':  decimal = decimal + weight  weight = 2 \* weight  print(binary, "=", decimal) |
| --- | --- |

Question 1: Locate all the variables in the program.

| Variables | binary, decimal, weight, digit |
| --- | --- |

Question 2: Locate the line of code where program execution is suspended until the user enters a value on the keyboard.

| Line | 1 (due to input) |
| --- | --- |

Question 3: Locate the line of code that contains a condition (a logical expression).

| Line | 5 (the condition is: digit == ‘1’) |
| --- | --- |

Question 4: Locate the line of code that doubles the value of a variable.

| Line | 7 (the assignment is weight = 2 \* weight) |
| --- | --- |

Question 5: Locate the lines of code that may be executed more than once.

| Lines | 5 to 7 (they are included in a for-loop) |
| --- | --- |

Question 6: Locate the line of code that may never be executed.

| Line | 6 (it lies within an if, so if the condition is never True, it will never be executed) |
| --- | --- |

# Task

Read the program below and answer the questions. The reference table after the questions shows you how the append and pop methods work.

| 1  2  3  4  5  6  7 | days = []  while len(days) < 12:  days.append(31)  days.append(30)  days[1] = 28  days.pop()  days.insert(7, 31) |
| --- | --- |

Question 1: What will be the contents of the days list, after lines 1 to 4 of the program have been executed?

| Answer | [31, 30, 31, 30, 31, 30, 31, 30, 31, 30, 31, 30] |
| --- | --- |

Question 2: What will be the contents of the days list, after line 5 of the program has been executed?

Write the items of the list, or describe how the list will change with respect to your previous answer.

| Answer | [31, **28**, 31, 30, 31, 30, 31, 30, 31, 30, 31, 30]  The value of the second item becomes 28. |
| --- | --- |

Question 3: What will be the contents of the days list, after line 6 of the program has been executed?

Write the items of the list, or describe how the list will change with respect to your previous answer.

| Answer | [31, 28, 31, 30, 31, 30, 31, 30, 31, 30, 31]  The last item (30) has been removed from the list. |
| --- | --- |

Question 4: What will be the contents of the days list, after line 7 of the program has been executed?

Write the items of the list, or describe how the list will change with respect to your previous answer.

| Answer | [31, 28, 31, 30, 31, 30, 31, **31**, 30, 31, 30, 31]  A new item (31) has been inserted as the 8th item in the list (with index 7). |
| --- | --- |

Teacher note: The objective is to assess understanding of the insert method, not to assess knowledge of zero-based indices again. The answer will be the same regardless of whether the learner inserts at position 7 or 8.

Reference table

|  | list.append(item)  e.g. numbers.append(42) | Add an item to the end of the list |
| --- | --- | --- |
|  | list.insert(index, item)  e.g. cities.insert(2, "Oslo") | Insert an item at a given position |

Resources are updated regularly - the latest version is available at: [the-cc.io/curriculum](http://the-cc.io/curriculum).



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