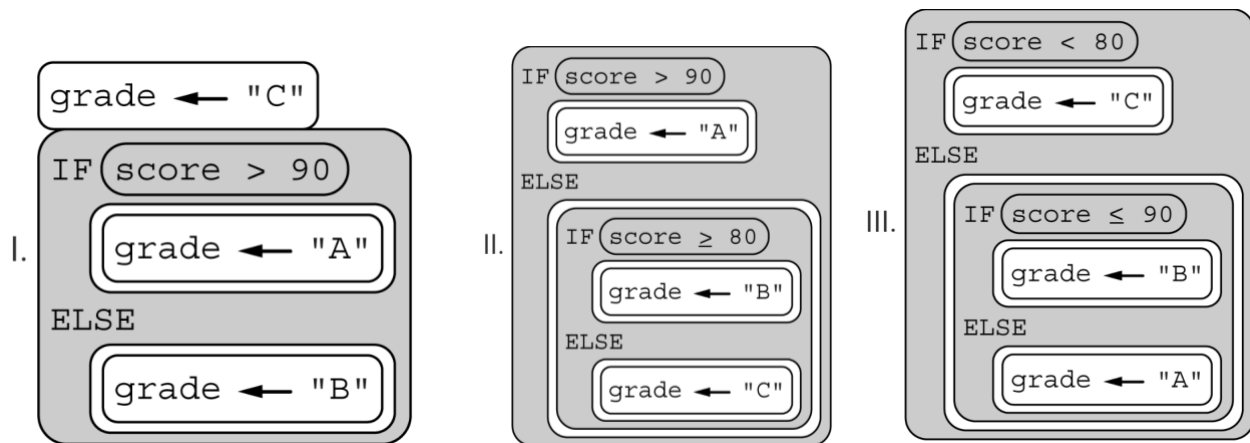


2023 AP Daily: Practice Sessions

AP Computer Science Principals

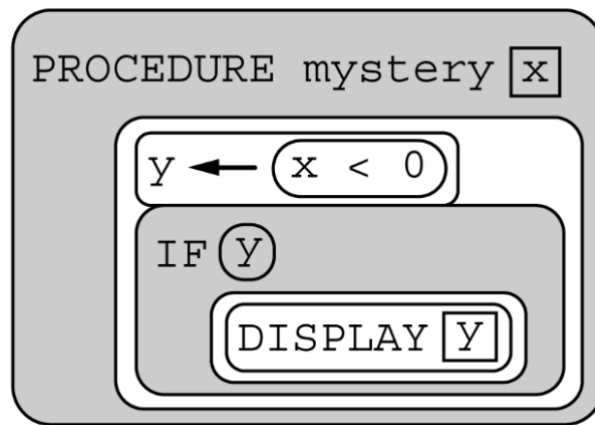
Session 1 – MCQ



1. A numeric test score is to be converted to a letter grade of A, B, or C according to the following rules: A score greater than 90 is considered an A; a score between 80 and 90, inclusive, is considered a B; and any other score is considered a C.

Which of the following code segments will assign the correct letter grade to `grade` based on the value of the variable `score`?

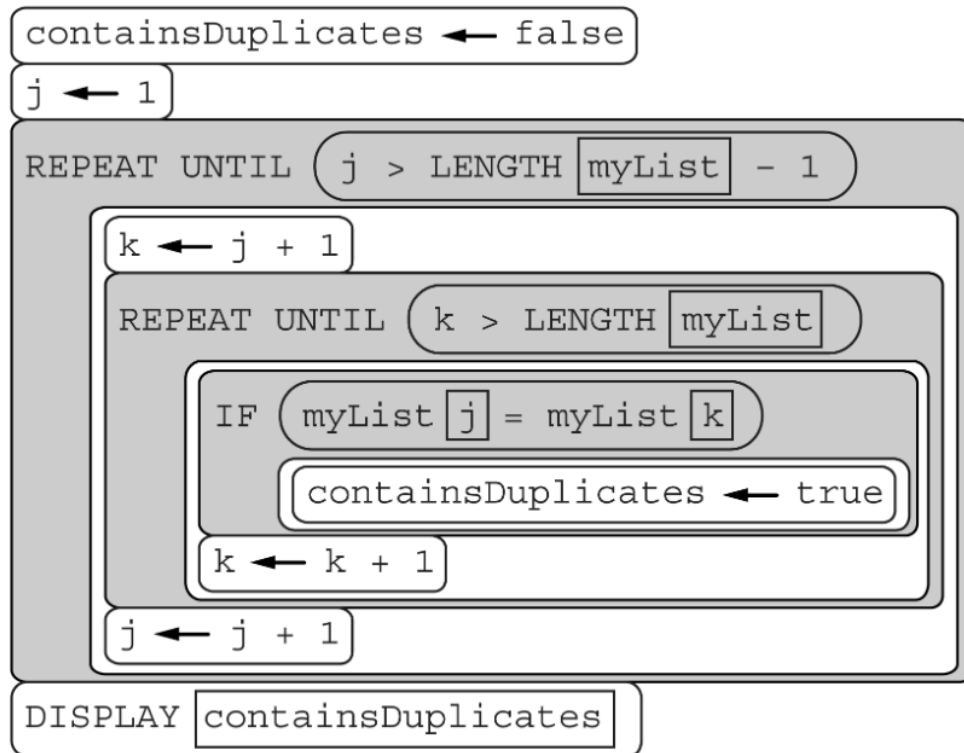
- A. II only
- B. I and II only
- C. I and III only
- D. II and III only



2. In the above procedure, assume that the parameter x is an integer.

Which of the following best describes the behavior of the procedure?

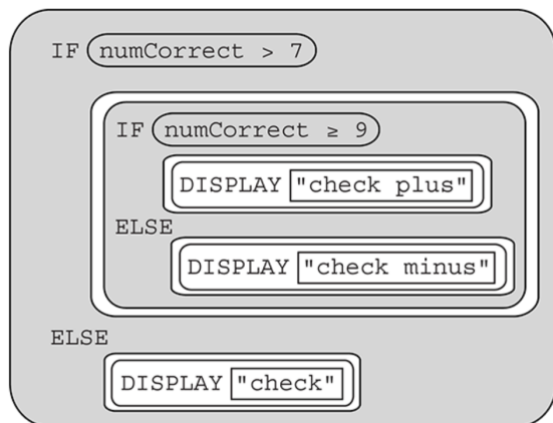
- A. It displays nothing if x is negative and displays `true` otherwise.
- B. It displays nothing if x is negative and displays `false` otherwise.
- C. It displays `true` if x is negative and displays nothing otherwise.
- D. It displays `true` if x is negative and displays `false` otherwise.



3. A student wrote the code segment above, which displays `true` if the list `myList` contains any duplicate values and displays `false` otherwise.

The code segment compares pairs of list elements, setting `containsDuplicates` to `true` if any two elements are found to be equal in value. Which of the following best describes the behavior of how pairs of elements are compared?

- A. The code segment iterates through `myList`, comparing each element to all other elements in the list.
- B. The code segment iterates through `myList`, comparing each element to all subsequent elements in the list.
- C. The code segment iterates through `myList`, comparing each element to the element that immediately follows it in the list.
- D. The code segment iterates through `myList`, comparing each element to the element that immediately precedes it in the list.



Number of Correct Answers	Grade
9 - 10	check plus
7 - 8	check
Under 7	check minus

4. A homework assignment consists of 10 questions. The assignment is graded using the chart to the right.

Let `numCorrect` represent the number of correct answers for a particular student. The code segment to the left is intended to display the appropriate grade based on `numCorrect`. The code segment does not work as intended in all cases.

For which of the values of `numCorrect` does the code segment NOT display the intended grade? Select TWO answers.

- A. 9
- B. 8
- C. 7
- D. 6

```
Line 1: IF(score - penalty < 0)
Line 2: {
Line 3:     score ← score - penalty
Line 4: }
Line 5: ELSE
Line 6: {
Line 7:     score ← 0
Line 8: }
```

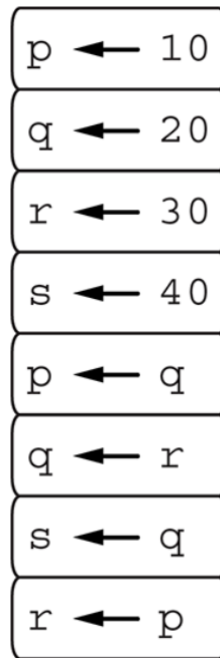
5. In the code segment shown, `score` and `penalty` are initially positive integers. The code segment is intended to reduce the value of `score` by `penalty`. However, if doing so would cause `score` to be negative, `score` should be assigned the value 0.

For example, if `score` is 20 and `penalty` is 5, the code segment should set `score` to 15. If `score` is 20 and `penalty` is 30, `score` should be set to 0.

The code segment does not work as intended.

Which of the following changes can be made so that the code segment works as intended?

- A. Changing line 1 to IF(score < 0)
- B. Changing line 1 to IF(score + penalty < 0)
- C. Changing line 7 to score ← score + penalty
- D. Interchanging lines 3 and 7



6. Consider the code segment above.

What is the value of r as a result of executing the code segment?

- A. 10
- B. 20
- C. 30
- D. 40

Variable	Value Before Updating	Value After Updating
word1	"xylophone"	"zebra"
word2	"yarn"	"yarn"
word3	"zebra"	"xylophone"

7. Three words are stored in the variables `word1`, `word2`, and `word3`. The values of the variables are to be updated as shown in the table.

Which of the following code segments can be used to update the values of the variables as shown in the table?

A. `temp ← word1`
`word3 ← word1`
`word1 ← temp`

B. `temp ← word1`
`word1 ← word3`
`word3 ← temp`

C. `temp ← word1`
`word1 ← word2`
`word2 ← word3`
`word3 ← temp`

D. `temp ← word3`
`word3 ← word2`
`word2 ← word1`
`word1 ← temp`

Procedure Call	Explanation
<code>concat(str1, str2)</code>	Returns a single string consisting of <code>str1</code> followed by <code>str2</code> . For example, <code>concat("key", "board")</code> returns "keyboard"
<code>prefix(str, length)</code>	Returns the first <code>length</code> characters of <code>str</code> or <code>str</code> if <code>length</code> is greater than the number of characters in <code>str</code> . For example, <code>prefix("delivery", 3)</code> returns "del" and <code>prefix("delivery", 100)</code> returns "delivery"

8. Consider the shown procedures for string manipulation.

The variable `initials` is to be assigned a string consisting of the first letter of the string `firstName` followed by the first letter of the string `lastName`. Which of the following assigns the correct string to `initials`?

- A. `initials ← concat(prefix(firstName, 1), prefix(lastName, 1))`
- B. `initials ← concat(prefix(firstName, 2), prefix(lastName, 2))`
- C. `initials ← prefix(concat(firstName, lastName), 1)`
- D. `initials ← prefix(concat(firstName, lastName), 2)`

9. The following code segment is used to determine whether a customer is eligible for a discount on a movie ticket.

```
val1 ← (NOT (category = "new")) OR (age ≥ 65)
val2 ← (category = "new") AND (age < 12)
```

If `category` is "new" and `age` is 20, what are the values of `val1` and `val2` as a result of executing the code segment?

- A. `val1 = true, val2 = true`
- B. `val1 = true, val2 = false`
- C. `val1 = false, val2 = true`
- D. `val1 = false, val2 = false`

10. A software development company has created an application called FileCleanUp. When the application is run on a user device, it searches for all files (including pictures, videos, and documents) that have not been accessed in the past month, stores them on the company's Web server, and deletes them from the user device. The application runs once each day. Users have the ability to manually retrieve files from the server if they are needed.

Which of the following is most likely to be a harmful effect of using FileCleanUp?

- A. It prevents users from accessing frequently used files when there is no Internet connectivity.
- B. It prevents users from accessing infrequently used files when there is no Internet connectivity.
- C. It prevents users from accessing frequently used files when there is reliable Internet connectivity.
- D. It prevents users from accessing infrequently used files when there is reliable Internet connectivity.