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Algorithms Your score: 235 (↑3) Intermediate

Well done! At an intermediate level, you have a solid understanding of the material and are able to pass intermediate content. You can apply key concepts on most tasks.

Computer Programming

Your score: 221 (↑3) Intermediate

Well done! At an intermediate level, you have a solid understanding of the material and are able to pass intermediate content. You can apply key concepts on most tasks.

Show more skills

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1. What is printed when the following program is executed? 1 / 1 point

```
func main() {
  x := []int {4, 8, 5}
  y := -1
  for _, elt := range x {
    if elt > y {
      y = elt
    }
  }
  fmt.Print(y)
}
```

- 4
- 8 (selected)
- 5
- -1

Correct
That's correct! The program scans the slice x and assigns y to the largest value in x. The largest value is 8.

2. What is printed when the following program is executed? 1 / 1 point

```
func main() {
  x := [...]int {4, 8, 5}
  y := x[0:2]
  z := x[1:3]
  y[0] = 1
  z[1] = 3
  fmt.Print(x)
}
```

- [1 3 8]
- [1 8 3] (selected)
- [4 1 3]
- [4 8 5]

Correct
That's correct! Variables y and z are both slices over different regions of the array x. Variable y[0] refers to the first element of x, and variable z[1] refers to the third element of z. The result of the assignments is to change the first and third elements of x to 1 and 3, respectively.

3. What is printed when the following program is executed? 0 / 1 point

```
func main() {
  x := [...]int {1, 2, 3, 4, 5}
  y := x[0:2]
  z := x[1:4]
  fmt.Print(len(y), cap(y), len(z), cap(z))
}
```

- 2 5 3 4
- 2 4 3 4
- 2 3 3 4
- 2 5 3 5 (selected)

Incorrect
Incorrect: You may want to review Lectures M3.1.1 through M3.1.3, which address arrays and slices (including variable slices). Focus on the definitions of lengths and capacities.

4. What is printed when the following program is executed? 1 / 1 point

```
func main() {
  x := map[string]int {
    "ian": 1, "harris": 2}
  for i, j := range x {
    if i == "harris" {
      fmt.Print(i, j)
    }
  }
}
```

- harris1
- 1ian

- ○ 1harris
- ◉ harris2

Correct
That's correct! The program makes a map containing two key,value pairs: (“ian”, 1) and (“harris”, 2). The loop searches for the key “harris” and prints the key “harris” together with its value 2.

5. What is printed when the following program is executed? **1 / 1 point**

```
type P struct {
    x string
y int
}
func main() {
  b := P{"x", -1}
  a := [...]P{P{"a", 10},
          P{"b", 2},
          P{"c", 3}}
  for _, z := range a {
    if z.y > b.y {
      b = z
    }
  }
  fmt.Println(b.x)
}

```

- ◉ a
- ○ b
- ○ c
- ○ x

Correct
That's correct! The program defines a new structure type called P which has two fields, x and y. The program then creates an array a of structures of type P. The loop checks each structure in the array and assigns b to the structure in the array with the largest value of y. The x field of the struct with the largest y value is printed. Since {“a”, 10} has the largest y value, “a” is printed.

6. What is printed when the following program is executed? **1 / 1 point**

```
func main() {
  s := make([]int, 0, 3)
  s = append(s, 100)
  fmt.Println(len(s), cap(s))
}

```

- ◉ 1 3
- ○ 0 3
- ○ 1 1
- ○ 1 4

Correct
That's correct! The program first creates a slice s with length 0 and capacity 3. Then the program appends an element to the slice which increases its length to 1, but does not change its capacity since the adding the element did not require the capacity to increase.