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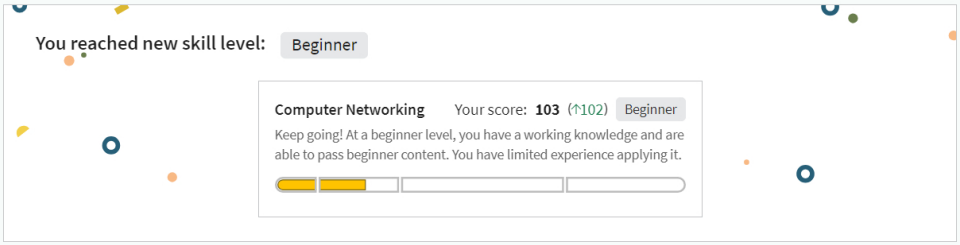

1. When will you be most likely be given an opportunity to show off your ability to code? **1 / 1 point**

- ○ During the Quiz
- ◉ During a technical interview
- ○ During the screening call

Correct
That's correct. A technical interview will give you an opportunity to display your ability to code.

2. How many representations can be made from a byte? **1 / 1 point**

- ◉ 256
- ○ 128
- ○ 64

Correct
That's correct! 2^8 or (2x2x2x2x2x2x2x2)

3. Which is the quickest: `O(n)`, `O(2n)` or `O(log(n)`? **1 / 1 point**

- ○ `O(2n)`
- ◉ `O(log(n))`
- ○ `O(n)`

Correct
That's correct. Applying a log to a value makes it very small, and is as near to instant time you can get without having instant time.

4. What is auxiliary space? **1 / 1 point**

- ◉ Additional space required to make computations.
- ○ Luxury space that can be used for extravagances.
- ○ Space that is not really needed.

Correct
That's correct! It is the extra spaced used when make computations.

5. In relation to data structures mutability refers to: **1 / 1 point**

- ◉ Whether a structure can be changed after its completion.
- ○ The initial limitations on the size that they can grow to.
- ○ The use of one data structure as a container to mimic another.

Correct
That's correct. Mutability refers to an object's ability to change once it has been instantiated.

6. To say that a list is an object infers what about this data structure? **1 / 1 point**

- (●) That in addition to storing items it has its own in-built functions.
- ( ) That it can be defined by the attributes it contains.
- ( ) That it will need to have parameters configured before use.

Correct
That's correct! This is particularly useful for object orientated programming.

7. What is in-place swapping? **1 / 1 point**

- ( ) Using different types of data structures as a container to emulate certain characteristics.
- ( ) Moving values in an array if the element being added is smaller.
- (●) Swapping items in an array in place of creating a new structure.

Correct
That's correct! This saves space by not having to create new variables.

8. In relation to trees, what is the difference between a depth first and breadth first search? **1 / 1 point**

- ( ) A depth first will investigate nodes with greater detail, while a breadth first is more superficial in approach.
- ( ) A breadth first is more thorough so will return the result faster.
- (●) A depth first approach will travel from top to bottom through sibling nodes, while a breadth first will travel through each level.

Correct
That's correct. Both approaches take a different way of searching the tree, which is faster is dependent on where the data is stored.

9. What are collection classes? **1 / 1 point**

- (●) Specialized classes for data storage and retrieval.
- ( ) Collections that take a specific type of class.
- ( ) Classes that are used by data structures to give them extra functionality like sorting.

Correct
That's correct! They reflect a suite of data structures that act in unique ways and as such can be more suited to a given problem.

10. The knapsack problem is an analogy to demonstrate which task in programming? **0 / 1 point**

- (●) Dynamic programming
- ( ) Creating dictionaries that use key value pairs when making lookups.
- ( ) Handling CPU loads.

Incorrect
Not quite. Please review the video on **Dynamic programming** Module 3, Lesson 2: **Working with Algorithms**.