Unit 13_010 – Args (Command Line Arguments)

Video Length 5:53

1. What are command line arguments?

2. How do command line arguments get into a java program?

Unit 13_012 – Simulating Command Line Arguments in IntelliJ

Video Length 4:47

3. How do you simulate Command Line Arguments in IntelliJ?

4. What would you do in IntelliJ if you were using two or more different sets of command line arguments to test your program??

Unit 13_020 – Access Modifiers

Video Length 19:54

5. What does each access modifier mean?
   - public
   - protected
   - default
   - private

6. What is the difference between `protected` and the default level of access protection

7. Can a class have `protected` as an access modifier?

   _____Why can't a class be declared private?

Unit 13_030 – Static

Video Length 2:30

8. Suppose there is a class named `Thing`. It has a public static field named `constant`. How would you access constant from a class other than `Thing`?

Unit 13_035 – A Promise Kept

Video Length 3:32

9. Explain what each word means in the following

```
public class Homework{
    public static void main(String[] args){

    }
}
```

- `public` (on the class line). Also, what do you know about the file name?
- `class`
- `Homework`
- `public` (on the main line)
- `static`
- `void`
- `main`
- `String[]`
- `args`

10. Which two words in the above list could you as a programmer change? This was not answered in the video, but think about it. There are two words that could be changed.

Unit 13_040 – Setup

Video Length 15:26

11. I could have copied the package off to a new project. What advantage did I get from using it in the same project as Homework12?

12. I rewrote the printPresident() method from Homework12. However, I could not use printPresident. The first line of printPresident is listed below. Why couldn't I just use Homework.printPresident(presidents,n)?

```
private static void printPresidents(President[] presidents,int n) {
```

Unit 13_040 – Setup, Part 2

Video Length 7:24

13. Both the Homework12 class and the LinearSearch classes had a function called makeName. They had the same signature. Why didn't I have a problem?

14. We didn't do this in the video, but assume that I now wanted to go into the Homework12 class and call makeName from the LinearSearch class. What command would I use in Homework12 if I wanted to call the makeName() method in LinearSearch()?

Unit 13_050 – Big O

Side note: For people who know Python, I was using something called "Jupyter Notebook." I did it in Visual Studio Code. Jupyter notebooks are a very useful tool. I suggest that anyone who knows Python learn about Jupyter notebooks.

Video Length 11:51

15. Why is $O(N)$ called "Linear?"

16. Why is the growth rate only of concern when there are large values of N?

17. What is $0(1)$ called? What does it mean? Does constant seem like a good name for this?

Unit 13_060 – compareTo()

Video Length 11:51

18. How can a class advertise that it is able to use a compareTo method?

19. Assume that we want to make the Place class implement compareTo. Write the `public class Place` statement to advertise that the compareTo method is implemented in the Place class.

20. For a place, the comparison is based on the state. If the states are equal, then the comparison is based on the city.

Unit 13_070 – Linear Search

Video Length 17:52

21. What is the disadvantage of using a for loop for the linear search?

22. Write the find method needed to do a comparison based on the birthPlace (in other words, find will return an entry of someone born in a given place.)

Unit 13_080 Part 1 – YouTube video on Selection sort

Video Length 3:34 Plus 8 minutes

I hate tracing sorts. There are a number of YouTube videos on the subject. We will focus on the Selection Sort in this class.

Watch the YouTube video at https://youtu.be/EwjnF7rFLns?si=ZpQsuO9slKj7Pdgd. I will put the URL in the Notes page.

If you don't want to use the notes, you can search YouTube for "Learn Selection Sort in 8 minutes" in the "Bro Code" channel.

23. The video talks in terms of "iterations." What is true at the end of the first iteration?

24. What is true at the end of the 2nd iteration?

25. When he gets to the last item in the array, why doesn't he have to do an iteration for the last position?

26. In the video he shows that the growth rate is $O(n^2)$. What is going to happen to the time as n gets large. (In practical terms, "Large" for an n^2 sort is in the low hundreds).

27. In the space below, write the three lines that do the swap. Note that they are the last three lines inside the outer for() loop.

Unit 13_080 Part2 Sorting Strings

Video Length 10:04

28. In the video I changed "array" to "words." That was a trivial change. I added a parameter n because that is more realistic than using length. I also changed "min" to "smallestSoFar." I changed some data types from int to String. What is the biggest non-trivial change I made in the code that was made necessary by changing from comparing ints to comparing Strings?

Please write any lingering questions you have here.