CSE143 Lecture Questions for Wednesday, 3/31/21

Question	Answer
With regard to size and the getter you create, it feels counterintuitive to have a method with the same name as a variable/field. Got it. Thanks. It just felt to go against naming conventions from other courses I've had	I'm not a fan of coming up with different names for the same basic concept, but I suppose you could use different names. It's not common in the Java libraries to do that.
Any updates on the Honors section? Thank you!	Email will go out later today about the honors section.
How many late days do we have	10 free late days.
Will there be a homework assignment each week? I heard there was about 8 total? Thanks!	Yes other than the midterm week. Yes, 8 total.
Are you the instructor for the Honors section? Okay, thank you!	yes
Is <Character method>; a method that we can use for the homework? Right. Sorry. Would I be able to call static character methods for the homework, or should I ask my TA privately? Thanks!	Don't discuss what you might use for the homework. Of course.
Is the JGRASAP the requirement of this course? Thanks!	We recommend using jGRASP, but you can use any IDE.
I know you've mentioned in the past that you don't necessarily recommend us code along during lecture because it's too fast; what would you recommend us do instead? Do you recommend just watching? Or taking notes? Thanks!	I'd mostly just sit back and watch, but take notes on important details like style issues that you can lose points for.
Is the Monday and Wednesday lecture for this assignment? If so, Friday and the other lecture aren't involved for the assignment correct?	When I post an assignment, we will have covered everything we need for it. So Friday's lecture isn't relevant to this homework.
Do we write the code for our homework on JGRASP? Thank you!	You need to use some kind of programming environment to write your code. We recommend using jGRASP.
If we want to try out the code you've done in class, is there a way to access it? That sounds good, thanks!	Once I post the program files later in the day, you can download those and run them. For today's lecture, you could download the client program and ArrayIntList.

It didn't cross my mind last term in 142, but why do we not put static in the methods that we write in a class? What would happen if we did? What is "static"? Thank you!	When you declare an element to be static, there is only one for the entire class (a shared element). You want these methods like add to work on each individual list object. It's like having a steering wheel in a car. Each car needs its own steering wheel. Each ArrayIntList needs its own array and size fields and its own methods for accessing those.
When do we know when to use "private" or "public" for variables and methods? Thank You!	In general all fields will be declared private. We'll see one exception later, but we'll make that very clear. In terms of methods, you have to decide what you want to make available to a client. We will be very clear exactly what public methods to have. Any other methods you introduce should be declared to be private because we don't want you to add public methods to the list of methods available to a client.
Is Array.length just a field of an array? Why isn't there a getter method for it? Weird.	Yes, it is a field. The designers of Java decided to do it that way.
Style-wise, do we call this.size or size(); in the class that we write	A client won't have the option to access the field, so I assume you're asking about the implementation (inside the class). You can do it either way.
Does the precondition only pertain to the parameters in the method? Or are there instances in which there are preconditions that need to be met that do not relate to the parameters? Thank you. I'm not quite there yet but I'll see if I understand it when I get there.	The preconditions can sometimes relate to other things. For example, in the final version of ArrayIntList that you see, there is an issue where you can exceed the capacity, in which case it throws an IllegalStateException.

Is taking note of what a method throws in the method header something that we do? ….method throws SomethingException(params) {
Not in the comment, but something like
Public void method () throws Exception {
 [code]
thanks!
	No, you don't need a throws clause in the method header.

Do we only make fields private and never the constructor or methods?	You can have private constructors and methods.
For the TA office hours links, will they be available in a timetable format like last quarter?	yes

So just to clarify, throwing an exception shows where the error is and stops the program? How is this different from the throw exception that we used last quarter for the file processing assignment? Oh, I see, thank you	Yes, when your code throws an exception, it stops the program from running and shows a backtrace of the sequence of calls that led to the error. The throws clause we used for file processing was not a command (throw versus throws). It was a description of the method.
To follow up about my question about private methods and constructors, would there be any case we would want to do that? I feel like methods are usually made to be used by clients so it wouldn't make sense to make them private. Oh I see thank you!	I mention at the end of the lecture that you should use private methods when you are adding methods that we didn't ask you to write. For example, you might be eliminating redundancy. There are two examples in the ArrayIntList I will be posting.
When you call other.size, shouldnt you be calling other.size();, since the size field is private? Oop sorry I just resumed the lecture whoops!	Good question...so good it's answered in the lecture. :-)
What would we have put in the "try" portion of the get method we made?	You wouldn't put it in the get method. I just did that for convenience. You'd put the call on the get method in a try block in the client code.
Is there a specific style of commenting for our assignment? Ok thank you	We don't require a specific commenting style. We just tell you what must be included in the comments.
How to open the hint after I typed something in jGrasp? Like System.out…. (the system would come up System.out.println(or System.out.printf(for me)	jGRASP doesn't have that feature.

In JS, you can set a default parameter value for a function like so:
 	
function doThing(requiredParameter,
                optionalParameter = defaultValue) {
  …
}
 	
Is there an equivalent thing in Java?
Follow up question, how does this relate to the way you say "int i = 0" when constructing a for loop?
	Java does not have default parameters. The way it's usually done instead is to have one constructor calling another using the this(...) notation.

Are most hw assignments going to be released on wednesdays and due thursday of the next week?	Most will be released on Fridays and due the next Thursday.

Last quarter there were live sessions we could attend to receive ⅓ of a hw point for. Is there something similar this quarter?	We will have exploration sessions this quarter, but we don't give credit in 143 for attending them.
Are Sections Graded?	No.
Do we have a zoom video section for the Q&A? Or just use the question sheet.	Just use this file.
If a precondition does not have an exception to be thrown if violated, do we have to explicitly say that it doesn't throw an exception?	You have to document all preconditions whether or not an exception is thrown. You don't have to say that something doesn't throw an exception, but you have to indicate all the cases where it does throw an exception.
Why do we declare fields static? What makes them different from other, i guess, instance bound fields? Is it a memory-based thing? Thank you!	We don't declare many fields to be static. Non-static fields are something where each object has its own version of it. I've used the analogy that it's like each car needing its own steering wheel. A static field would be a single shared field for the entire class. It wouldn't work well to have one steering wheel for all cars. But it can work for something like a constant.
Just to be clear, everything we need to complete HW1 is from Monday and today's lecture only? Thank you!	yes
At around 29:30 you refer to the amount of objects in an array list as the "size". I thought the size of an array are all the possible spaces (100) and that the length is the amount of things in it. Is this correct? So in this case, size and length mean the same thing? I see thank you i g	As I mentioned in Monday's lecture, we keep track of two integer values associated with an ArrayList or ArrayIntList. The array has a capacity, but there is also a current size for the list. The capacity is the maximum value for size. Size indicates how many things are currently in use, like a motel that has 100 rooms but only 12 of them are being used right now. I don't use the word length when I talk about a list. I prefer capacity and size.
When we use any type of data structures (primitive or others), do we have to construct them as fields or can we construct them in a specific method? For example, if I wanted to construct a String, would I have to declare that as a private field first or can I just construct it in the method that I am using it in?	You can use local variables to refer to data structures that you construct. They don't have to be fields.

If you're trying to use minimal data fields, how do you know whether a field that you make is necessary?	You need a field when you have values being manipulated by two different public methods of an object. For example, when you call the add method, that will change what the other methods will return (size, get, toString). You also don't want to have redundant fields (storing the same information twice).
I'm a little confused by your notes. On the part where you wrote about doing the println for the list, you said it produced a weird output. Then you said it would be good to change the method to toString. "You can explicitely call the toString method if you want to, but if you don't specify, Java will call the toString method for you, making an implicit call on toString." ← I'm confused about this part. Do we need to call toString or not because earlier you said it produces something weird without it. Ohhh I see. So toString is completely necessary to get an output that is useful to us? Ok thank you! One last question, override just means to apply the method right? Ok, got it. Thank you!	There are some cases where you have to call toString, but there aren't that many of them. Usually Java calls it for you. I think you're misunderstanding the idea of something weird being produced. If you don't define a toString method, then you will get output that isn't very helpful if you do something like printing the value. Yes, you need to override toString if you want to get meaningful output. No, override means to include a definition for it in your class. There is a built-in version of toString that produces the weird output. By including your own version, you override that default definition.
In the HW spec, what does it mean by a "fast" method. For example, in the case of size()? Thank you!	You often have the choice between computing a value (which takes time) versus storing a value so that you can immediately access it (which takes up memory space). The spec is saying that you should choose speed over space. Don't recompute size each time. Store it.
For the constructor portion, do we always automatically assume that when the 2nd constructor says 'this(100)', it is referring to the first (the one that has elementData = new int[capacity]'? What do you mean by 'matches'? The one without parens would be considered the 'real' constructor? Ohh I see! Thank you.	Java looks at the header for each constructor. One has empty parens. One has an int inside parens. It finds the one that matches. So the order in which they appear doesn't matter at all. Java looks at the call that you're making: this() → call on a constructor with 0 arguments this(100) → call on a constructor with a single int

For the list3 at around 40 min, why cant we just pass in 100 instead of writing the whole constructor with the "this" command. I see.	The point was that it can be convenient to have a constructor that creates the list with a default capacity. It makes life easier for the client.
Can we use for-each loop in this first assignment?	Yes, you can always use foreach loop when appropriate.