CSC 345 Spring 2022 Test 1 Chapters 1, 2 and 3

Here are the topics for the First Test. All questions are short answer / listing. Please will fill out - expand the lines as needed and return to me. Since shreve.net e-mail is down – Use the [csharp@LSUS.EDU](mailto:csharp@LSUS.EDU) e-mail address. You do not have to write complete sentences.

Please return to me by MONDAY NIGHT March 14.

Chapter 1

1. What are the 9 types of data in Java?

int, double, float, long, short, byte, boolean, char, String

1. Why Use Unified method?

It is the best way to create object-oriented systems, and it improves communication and understanding between the people working on the project.

1. Arrays - What make Java UNIQUE on Array Bounds / Beginning Location

Java checks for attempts to access values that are not in the array and returns an *ArrayIndexOutOfBoundsException*. The beginning location for arrays is 0.

1. What do we mean by NULL?

Absence of reference to a variable.

1. Java does Garbage Collection – what is it?

The Java run-time system marks unreachable values as garbage and deallocates their storage space, in order to free up storage.

1. Why is Order of Growth Analysis important?

To determine the efficiency of programs and to find a way to reduce its complexity.

1. What are the two things to look at in deciding how efficient an Algorithm is?

The algorithm complexity case, and its size of imput.

Chapter 2

1. Why Use Abstraction?

To make concepts easier to understand by simplifying them as much as possible.

1. What are some ways to do Information Hiding?

Data abstraction, ADTs, Data Levels.

1. What do we mean by and ABSTRACT DATA TYPE?

Data type whose properties are specified independently of any particular implementation.

1. Why are Preconditions and Postconditions important

They give ADTs the information needed to perform whatever tasks the programmer wants accomplished.

12. Stack operations – give a short explanation of each of the following

Push – Adds an element to the top of the stack

Pop – Removes the top element from the stack

Top or Peak – Returns the top element of a stack

13. Talk about testing of a program – Why, when do you do it …

Testing should be done consistently while writing and designing the program to ensure its working as intended and avoid possible errors that might happen.

14. Why is GOOD Test Data important?

It helps programmers identify errors in the code easily.

15. Where can you insert a node in a linked lists (location)?

Anywhere in the linked list, the beginning, the interior, and the end.

Chapter 3

16. Why use Recursion?

To dissect problems so they can be easy to understand.

17. How does Recursion End?

When the base case for the recursion has been obtained.

18. Section 3.2 emphasizes 3 questions,

Why should you make sure an application of Recursion answers YES to all three.

To make sure the algorithm works.

19. What do we mean by Activation Record? What types of data values does it need to contain?

Space used at run time to store information about a method call. It contains parameters, local variables, and return address.

20. Why use Recursion vs. Iterative loop?

Recursion is better implemented when the clarity of a problem is the priority and the computer’s memory is not being wasted on repetitive values like in the example of the book in page 201. In this case an iterative loop would be the best one to use since it is the most efficient.