CSC 116 – 002 Exam 2 Spring 2005

This is the final exam review sheet. The final exam will be held on May 4th from 1pm to 4pm in Withers 218. You will have the full three hours to complete the exam. You may being your book and your notes, however I would suggest that you answer all of the questions in this study guide and use this primarily to help you on your exam.

Part 1: Vocabulary (10 questions at 2 points each)
All of the possible vocabulary words that will be on the exam appear in this list. There are more words here to define than will be on the exam. All of the vocabulary words come from the 2nd half of the semester.

1. StringTokenizer
2. Formal Parameters
3. Actual Parameters
4. File Input
5. File Output
6. File Access
7. char
8. Exception
9. throw
10. catch
11. Unchecked Exceptions
12. Checked Exceptions
13. Accessor Methods
14. Mutator Methods
15. Static Methods
16. Static Variables
17. Scope

18. Shadowing
19. Javadoc
20. Arrays
21. Command Line Options
22. Parallel Arrays
23. Object Arrays
24. Container Class
25. Partially Filled Arrays
26. Vectors
27. Compile Errors
28. Runtime Errors
29. Verification
30. Validation
31. Black Box Testing
32. White Box Testing
33. Testing
34. Equivalence Partitioning
35. Boundary Value Analysis
36. Unit Testing
37. Integration Testing
38. GUI
39. Window
40. Jpanel

41. JTextBox
42. JTextField
43. JComboBox
44. JButton
45. Jlabel
46. ActionListener
47. WindowAdapter
48. MouseEvent
49. Applets
50. MouseAdapter

Part 2: Arrays and Vectors

Write a method that accepts an integer array as a parameter. Return the sum of the contents of the array.

Write a method that accepts an integer array as a parameter. Return the average of the contents of the array.

Write a method that accepts an integer array as a parameter. Assume the array has at least 2 elements. Return the smallest value in the array.

Write a method that accepts an integer array as a parameter. Assume the array has at least 2 elements. Return the largest value in the array.

Write a method that loops to print out all elements in an array.

Write a method that accepts a double array as a parameter. Suppose the array contains the price of computers. Find and return the first index of the array that has a price less than 1000. If there is no computer in the list with a price below 1000, return –1.

Create an array of ints called statResults that contains 50 elements. Assign the value 42 to the 5^{th} element of the array. (Hint: If you want to assign something to the 5^{th} position in the array, what is the index? It's not the same as the element number)

Create a two-dimensional array with length 5 and height 7. Write a for loop to print out each element in the array. (Don't worry about populating the array, just make sure that you initialize it!)

What is the difference between arrays and Vectors?

Create a Vector called statResults that contains 50 elements.

Write a method that accepts a vector as a parameter. Assume the vector contains String objects. Print out the contents of the Vector.

What must you do when you get an element out of an array? Assume in the code below that Vector vec has been initialized and contains Card objects. You want to retrieve the first Card object in the Vector vec. What goes in the blank below?

```
Card c = _____ vec.get(0);
```

Part 3: File I/O and String Manipulations

What class(es) are used to read text from a file one character at a time?

What class(es) are used to write text to a file one character at a time?

What class(es) are used to read binary data from a file one byte at a time?

What class(es) are used to write binary data to a file one byte at a time?

What class(es) are used to read text data from a file one line at a time?

What class(es) are used to write text data to a file one line at a time?

What method is used to close file readers, file writers, and files?

Assume you have a file called zoo.txt. Write a method, which opens the file zoo.txt. You will want to read each line of the file until you reach the end of file. Each line in the file will contain either Z or O. Maintain a count of the number of times you find Z and the number of times you find O.

Write a method which opens a file, out.txt, for writing. Write your name and lab section to the file.

Write a method which accepts a String as a parameter. Tokenize the String, using StringTokenizer, using white-space as the delimiter (Hint: white-space is the default delimiter). Write a loop to print out each token.

Write a method which accepts a String as a parameter. Tokenize the String, using StringTokenizer, using white-space as the delimiter (Hint: white-space is the default delimiter). Return the count of the tokens in the string.

Write a method which accepts a String as a parameter. Tokenize the String, using StringTokenizer, using | as the delimiter (Hint: white-space is the default delimiter). Write a loop to print out each token.

What are the methods that StringTokenizer has? What does each one do?

What is a String method that we can use to split a line up using regular expressions? What is the regular expression that represents white space?

Part 4: Objects and Partially Filled Arrays (20 points)

There are 10 blanks to fill in at 2 points each. I would suggest that you look at the SongCollection example and the CSC116Section002 in-class exercise solution.

Create a class called VideoStore. The VideoStore class will contain an array of Movie objects as an instance variable. This will be a partially filled array so you will need to create a count object to maintain the number of Movies that are in the collection.
Write a Constructor for your VideoStore class. Initialize you movie array to contain 100 movies. Initialize your count to 0.

Write a method which accepts a Movie object as a parameter. Add the movie to the array and increment the counter.

Write a main method. The main method will declare and initialize a VideoStore object. Create a Movie object. Add the Movie object to the VideoStore.

Part 5: GUIs (10 points)

Know the different GUI objects and how to recognize them.

What class must you extend when you create a GUI?

What method must you override when you implement ActionListener (Hint: This is a method where you check to see what button has been pressed in all of your programs)

Part 6: Extra Credit (5 points)

What method do you use to refresh an Applet?

Count the number of times a loop executes.