Points of emphasis – Matrices, Strings and Selection Sort

1. Write a Matrix class that will fill a 5 x 10 matrix with random numbers between 1 and 10.

private in[[][] mat = new mat[5][10];

1. public void fill()
2. Print out the matrix in table form public void print()
3. Print out the sum in a given row public int getSum(int r)
4. Print out the column number of the column that has the biggest sum.

public int getBiggestColumn()

1. Print the locations in the matrix that contains an odd number and has an odd number to its left, right, above it and below it. If there is no number to the left don’t try to access it or you will get and out of bounds error (same goes with right, above and below – if there aren’t numbers all around then don’t print it)

public void printOddGuys()

1. Get the average of the odd numbers on the outside of the matrix.

public int sumOfOddGuysOnOutside()

1. Create a String2 class.
2. Write a method that will let you add a String to the class (change the String in the private area)

public void addString(String na)

1. Write a method that will print out your String

public void print()

1. Write a method that will cut out a piece of a string (if it is inside of String)

For example if String was Thompson and I wanted to cut out hom the String in the private area would become Tpson

If the string to be cut out is not inside of the String there will be no change

Use your indexOf command and then concatenation

public void cut(String s) // will cut s out of the String in private area if s is contained in it.

1. public void Reverse() // will reverse String in private area

// so if string is Thomas it will become samohT

// don’t just print it in reverse – change it there

1. public void removeVowels() // removes vowels

// precondition : all characters are lower case

// if String was “helium” it would become “hlm”

1. Create a class that holds an ArrayList of Strings. Have a function that fills ArrayList with 12 names.

public void fill() // just assign them manually ar.add(“Joe”);

public void sort()

Write a function that will sort the names in to order. Use a selection sort. With the selection sort, have a loop from 0 to ArrayList’s length -1. You find the smallest from that point on and exchange it with name in that spot.

Then the loop moves on to next spot.

So if array was

Joe Tom Pete Fred Sue Ann Cathy Debbie Ellen

After 1 loop

Ann Tom Pete Fred Sue Joe Cathy Debbie Ellen

After 2 loops

Ann Cathy Pete Fred Sue Joe Tom Debbie Ellen

You will need to use compareTo for Strings

Then write

public void print()

// to make sure they are sorted