Homework #8

(Java Programming for Beginners - OnLine)

Demo: The following code is a procedural way of writing code. It prints the weekly temperature, finds the min and max, and the average as well.

```
int weeklyTemp[] = { 69, 70, 71, 68, 66, 71, 70 };
int i, max = 0, min = 0;

// print temperatures
for (i = 0; i < weeklyTemp.length; i++) {
      System.out.printf("\nThe temperature on day %d " +
                              "was %d: ", i + 1,
                  weeklyTemp[i]);
}
System.out.printf("\n\n");

// find the max, min temperature
for (i = 0; i < 7; i++) {
      if (i == 0)
            max = min = weeklyTemp[i];
      if (weeklyTemp[i] > max)
            max = weeklyTemp[i];
      if (weeklyTemp[i] < min)
            min = weeklyTemp[i];
}
System.out.printf("The Minimum temperature is: %d\n", min);
System.out.printf("The Maximum temperature is: %d\n", max);

// get average
float total = 0, average;
for (i = 0; i < 7; i++)
      total += weeklyTemp[i];
average = total / weeklyTemp.length;
System.out.println("The average temperage for the week is:
                        " + average);
```

8.1 Now, modify the above code, which is all in one place, and break it into multiple methods. Try to convert each piece of important code into static method.

a) Write a method called getTemperatures. Which asks the user to enter 7 temperatures for the week

b) Write a method called printTemperatures. Which prints the 7 temperatures for the week:

c) Write a method called getMax. which returns the maximum temperature of the week.

d) Write a method called getMin. which returns the minimum temperature of the week.

e) Write a method called getAverage, which returns the average temperature of the week.

f) Write a method called printStatistics that prints minimum, maximum and average of the week using above method

g) Write the code in main to call all these functions

Demo: Here is the solution for Homework# 4.6. It is written as a procedural program.

```
System.out.println("\nUsing for-loop and user values:
                    ");
int x, y;
char hChar1, vChar1;
int  ht1, wd1;
char answer = 'y';

Scanner input1 = new Scanner(System.in);

while (answer == 'y') {
     System.out.print("\nPlease enter height of a
                       box: ");
     ht1 = input1.nextInt();
     System.out.print("\nPlease enter width of a box:
                       ");
     wd1 = input1.nextInt();

     input1.nextLine(); //clean the buffer
     System.out.print("\nPlease enter the horizontal
                       charcters to draw box: ");
     hChar1 = input1.nextLine().charAt(0);
     System.out.print("\nPlease enter the vertical
                   charcters to draw box: ");
```

```
            vChar1 = input1.nextLine().charAt(0);

            for (x=1; x<= wd1;x++)
            {
                  System.out.print("" + hChar1);
            }
            System.out.print("\n");
            for(x=1;x<= ht1-2;x++)
            {
                  System.out.print(""+ vChar1);
                  for (y=1;y <= wd1-2;y++)
                        System.out.print(" ");
                  System.out.print("" + vChar1 + "\n");
            }
            for(x=1;x<= wd1;x++)
            {
                  System.out.print(hChar1);
            }
            System.out.print("\n\n");

            System.out.print("Continue? Type 'y' for yes:
                        ");
            answer = input1.nextLine().charAt(0);
      }
      System.out.println("\n\nThank you for using my draw
                        box program");
```

8.2 Now, modify and break the above code into four methods:

a) A method, drawHorizontalLine that draws horizontal lines

"----------"

b) A method, drawVerticalLine that draws vertical lines

"| |"
"| |"
"| |"

c) A method, drawBox, which calls the drawHorizontalLine, and drawVerticalLine to draw the box

d) Call drawBox from main