HW2 Code

Name: Lavie Zanzuri
ID: 211676028

Divisors :

```
/**
 *  Gets a command-line argument (int), and prints all the divisors of
the given number.
 */
public class Divisors {
     public static void main (String[] args) {
          //// Put your code here
          int x = Integer.parseInt(args[0]);
          for(int i = 1;i <= x;i ++) {
               if(x % i == 0) {
                    System.out.println(i);
               }
          }
     }
}
```

Reverse :

```
/**
 * Prints a given string, backward. Then prints the middle character
in the string.
 * The program expects to get one command-line argument: A string.
 */
public class Reverse {
      public static void main (String[] args) {
            //// Put your code here
            String str = args[0];
            String reverse = "";
            int length;
            char ch;
            char middle = str.charAt(0);
            length = str.length();
            for(int i = 0;i < length;i ++) {
                  ch = str.charAt(length - 1 - i);
                  reverse = reverse + ch;
            }
            if(length % 2 != 0) {
                  middle = str.charAt((int)(length / 2));
            }
            if(length % 2 == 0)   {
                  middle = str.charAt((length / 2) - 1);
            }
            System.out.println(reverse);
            System.out.println("The middle character is "+middle);
      }
}
```

InOrder:

```
/**
 *  Generates and prints random integers in the range [0,10),
 *  as long as they form a non-decreasing sequence.
 */
public class InOrder {
     public static void main (String[] args) {
          //// Write your code here
          int num1 = ((int)(Math.random() * 10));
          System.out.print(num1);
          int num2 = ((int)(Math.random() * 10));
               while(num1 <= num2)   {
                    System.out.print(" " + num2);
                    num1 = num2;
                    num2 = ((int)(Math.random() * 10));
               }
     }
}
```

Perfect:

```
/**
 *  Gets a command-line argument (int), and chekcs if the given number
is perfect.
 */
public class Perfect {
     public static void main (String[] args)    {
          //// Put your code here
          int num = Integer.parseInt(args[0]);
          int count = 0;
          int j = 1;
          for(int i = 1;i < num;i ++) {
               if(num%i==0) {
                    count = count + i;
               }
          }
          if(count == num) {
               System.out.print(num +" is a perfect number since "+
num +" =");
               while(j < num) {
                    if(num % j == 0) {
                         if(j == 1) {
                              System.out.print(" "+ j);
                         }
                         else {
                              System.out.print(" + "+ j);
                         }

                    }
                    j = j + 1;
               }
          }
          else {
               System.out.print(num +" is not a perfect number" );
          }

     }
}
```

DamkaBoard:

```
/**
 *  Gets a command-line argument n (int), and prints an n-by-n damka
board.
 */
public class DamkaBoard {
	public static void main(String[] args) {
		//// Put your code here
		int n = Integer.parseInt(args[0]);
		for(int i = 0;i < n;i ++) {
			if(i != 0) {
				System.out.println();
			}
			for(int j = 0;j < n;j ++) {
				if(i % 2 == 1) {
					System.out.print(" *");
				}
				if(i % 2 == 0) {
					System.out.print("* ");
				}
			}
		}

	}
}
```

OneOfEachStats:

```
import java.util.Random;
/**
 *  Computes some statistics about families in which the parents
decide
 *  to have children until they have at least one child of each
gender.
 *  The program expects to get two command-line arguments: an int
value
 *   that determines how many families to simulate, and an int value
 *  that serves as the seed of the random numbers generated by the
program.
 *  Example usage: % java OneOfEachStats 1000 1
 */
public class OneOfEachStats {
     public static void main (String[] args) {
           // Gets the two command-line arguments
           int T = Integer.parseInt(args[0]);
           int seed = Integer.parseInt(args[1]);
           // Initailizes a random numbers generator with the given
seed value
        Random generator = new Random(seed);

           //// In the previous version of this program, you used a
statement like:
           //// double rnd = Math.random();
           //// Where "rnd" is the variable that stores the generated
random value.
           //// In this version of the program, replace this statement
with:
           //// double rnd = generator.nextDouble();
           //// This statement will generate a random value in the
range [0,1),
           //// just like you had in the previous version, except that
the
           //// randomization will be based on the given seed.
           //// This is the only change that you have to do in the
program.
           int count2 = 0;
           int count3 = 0;
```

```
            int count4 = 0;
            int sum = 0;
            double average;
            for(int i = 0; i < T;i ++) {
                  //double num1 = generator.nextDouble();
                  boolean girl = false;
                  boolean boy = false;
                  int count = 0;
                  while(girl == false || boy == false) {
                        double num1 = generator.nextDouble();
                        if(num1 >= 0.5) {
                              girl = true;
                              count = count + 1;
                              sum = sum + 1;
                        }
                        if(num1 < 0.5) {
                              boy = true;
                              count = count + 1;
                              sum = sum + 1;
                        }
                  }
                  if(count == 2) {
                        count2 = count2 + 1;
                  }
                  if(count == 3) {
                        count3 = count3 + 1;
                  }
                  if(count >= 4) {
                        count4 = count4 + 1;
                  }
            }
            average = (double)sum / T;
            System.out.println("Average: "+ average + " children to get
at least one of each gender.");
            System.out.println("Number of families with 2 children: " +
count2);
            System.out.println("Number of families with 3 children: " +
count3);
            System.out.println("Number of families with 4 or more
children: " + count4);
            if(count2 > count3 && count2 > count4) {
                  System.out.println("The most common number of children
is 2.");
            }
            if(count3 > count2 && count3 > count4) {
```

```
                System.out.println("The most common number of children
is 3.");
           }
           if(count4 > count2 && count4 > count2) {
                System.out.println("The most common number of children
is 4 or more.");
           }
     }
}
```