Intro to CS – HW2

Divisors program:

```
public class Divisors {
        public static void main (String[] args) {
                int x = Integer.parseInt(args[0]);
                int potentialDevisor = 1;

                while (potentialDevisor < x+1)
                {
                        if (x % potentialDevisor == 0){

                                System.out.println(potentialDevisor);
                        }


                        potentialDevisor ++;

                }

        }
}
```

Reverse program:

```
public class Reverse {
        public static void main (String[] args){

                String sOriginal = args[0];
                String sReversed = "";


                for (int i = sOriginal.length()-1; i>-1 ;i--) {

                        sReversed += sOriginal.charAt(i);

                }

                char middleChar = sReversed.charAt(sReversed.length()/2);

                System.out.println(sReversed);
                System.out.println("The middle character is " + middleChar);

}

}
```

InOrder program:

```
import java.util.*;
public class InOrder {
        public static void main (String[] args) {

                int last = -1;
                int current = (int) (Math.random() * 10);



                while (current>last){
                                System.out.print(current);
                                System.out.print(" ");
                                last = current;
                                current = (int) (Math.random() * 10);


                }

        }
}
```

DamkaBoard program:

```
public class DamkaBoard {
    public static void main(String[] args) {
                int n = Integer.parseInt(args[0]);

        for (int i = 1; i <= n ;i++ ) {


                        if (i % 2 == 0) {
                for (int j = 1; j <= n  ; j++ ) {
                    System.out.print(" *");

                }
                System.out.println("");
            }
            else{
                    for (int j = 1; j <= n  ; j++ ) {
                        System.out.print("* ");


                }
                System.out.println("");

        }

        }


    }
}
```

Perfect program:

```
public class Perfect {
    public static void main (String[] args) {

        int x = Integer.parseInt(args[0]);
        int potentialDevisor = 2;
        String PositiveResult = x + " is a perfect number since " + x + " = 1";
        String NegativeResult = x + " is not a perfect number";
        int sum = 1;

        while (potentialDevisor < x)
        {
            if (x % potentialDevisor == 0){

                PositiveResult +=" + " + potentialDevisor;
                sum += potentialDevisor;
            }


            potentialDevisor ++;
        }
        if (sum == x) {

            System.out.print(PositiveResult);
        }
        else{
            System.out.print(NegativeResult);
        }
}
}
```

OneOfEachStats program:

```
import java.util.*;
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]);
   Random generator = new Random(seed);


            double totalSum = 0.0;
            double average = 0.0;

            boolean boyWasBorn = false;//1
            boolean girlWasBorn = false;//0
            int childrenCounter = 1; //should be 1 though

            int twoChildrenFam = 0;
            int threeChildrenFam = 0;
            int fourChildrenFam = 0;

            int sexIndicator = (int) (generator.nextDouble() *2);

            if (sexIndicator == 1) {

                boyWasBorn = true;
            }

            else
            {

                girlWasBorn = true;

            }

            for (int i = 0; i < t   ;  i ++) {

                while (boyWasBorn != girlWasBorn )
                {
                    sexIndicator = (int) (generator.nextDouble() *2);
                    if (sexIndicator == 1)
                 {

                    boyWasBorn = true;
        }


        else
                {

                        girlWasBorn = true;


                }
childrenCounter ++;
}

if ( childrenCounter == 2){

        twoChildrenFam++;

}

else {

        if (childrenCounter == 3){

                threeChildrenFam++;

        }
        else
                fourChildrenFam++;
}

totalSum += childrenCounter;
childrenCounter = 1;
boyWasBorn = false;
girlWasBorn = false;

sexIndicator = (int) (generator.nextDouble() *2);

if (sexIndicator == 1) {

        boyWasBorn = true;
}

else
{

        girlWasBorn = true;
```

```
                }

            }
            average = totalSum/(double)t;

            System.out.println("Average: " + average+ " children to get at least
one of each gender.");
            System.out.println("Number of families with 2 children: " +
twoChildrenFam);
            System.out.println("Number of families with 3 children: " +
threeChildrenFam);
            System.out.println("Number of families with 4 or more children: " +
fourChildrenFam);


            if ((twoChildrenFam >= threeChildrenFam) && (twoChildrenFam
>=fourChildrenFam)) {

                System.out.println("The most common number of children is
2.");

            }
            else {

                    if ( (threeChildrenFam >= twoChildrenFam) &&
(threeChildrenFam >= fourChildrenFam))
                    {
                        System.out.println("The most common number
of children is 3.");
                    }
                    else
                    {
                        System.out.println("The most common number
of children is 4 or more.");

                    }




            }

    }
}
```