

Homework 2

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Divisors :

```
public class Divisors {  
    public static void main (String[] args) {  
        ///// Put your code here  
        int x = Integer.parseInt(args[0]);  
        if (x == 0){ // x is not divisible  
            System.out.println("Null");  
        }  
        for (int i = 1; i <= x ; i++){ // loop for to check if x is  
divisible by i  
            if ( x%i == 0){ // if x divisible by i without rest  
                System.out.println(i); // print i  
            }  
        }  
    }  
}
```

Reverse :

```
public class Reverse {
    public static void main (String[] args){
        String s = args[0]; //get a string
        String sOut = ""; // the string we get after the reverse
        int j = 0;
        for ( int i = s.length() -1; j <= i; i--){ // loop for to run
            between the length-1 of the string to 0
                char c = s.charAt(i); //we exchange places starting with
                the last letter
                    sOut = sOut + c; //the result
                } //for

        System.out.println(sOut);

        int middleIndex = s.length() / 2; // middle char of the string

        if (s.length() % 2 == 0){ // if the number of letter is even
            char middleIndex2 = s.charAt(middleIndex - 1); // get the
            char at the middle index -1
                System.out.println("The middle character is" + " " +
            middleIndex2);
            } //if
        else { // if the number of letter is odd
            System.out.println("The middle character is" + " " +
            s.charAt(middleIndex));
            } // else
        }
    }
}
```

InOrder :

```
public class InOrder {
    public static void main (String[] args) {
        Random rand = new Random();

        // we have a range between 0 and 10, and we must take the first
        number and we shure that -1 will be lower
        int currentNumber = -1;
        int nextNumbber;
        String res = ""; // preparing the result

        do {
            nextNumbber = rand.nextInt(10); // take a number between
0 and 10

            if ( nextNumbber >= currentNumber){ // if the next number
is greater or equal than a current number
                res = res + nextNumbber + " "; // we add it to the
result

                currentNumber = nextNumbber; // we initialize again
            }
            else {
                break; // if that not the case we stop
            }
        }//do
        while (true); // while that true we continue to run

        System.out.println(res); // printing the result
    }
}
```

```
}
```

DamkaBoard :

```
public class DamkaBoard {  
    public static void main(String[] args) {  
        int x = Integer.parseInt(args[0]);  
        if (x <= 0){ // if x none positive return space  
            System.out.println(" ");  
        }//if  
        for (int i = 0; i < x; i++) { //loop for rows  
  
            if (i % 2 == 1) {// check if we need a space at the  
beginning of the rows  
                System.out.print(" ");  
            }  
            for (int j = 0; j < x; j++) { //loop for column  
                // put the sign *  
                if (j < x - 1 ) {  
                    System.out.print("* ");  
                }// if  
                else {  
                    if ( i % 2 == 0){  
                        System.out.print("* ");  
                    }//if  
                    else {  
                        System.out.print("");  
                    }//else  
                }  
            }  
        }  
    }  
}
```

```
        }// else

        }// second for
        System.out.println(); // move to the next line after each
row
    }// first for
}
}
```

Perfect :

```
public class Perfect {  
    public static void main (String[] args) {  
        int num = Integer.parseInt(args[0]);  
        if (num < 0){ // if num is not a positive number  
            System.out.println(num + " " + "is not a perfect number");  
        }//if  
        String res = num + "" + " is a perfect number since " + num + "  
= 1"; // the result  
  
        int num1 = 1;// initialize of num1  
        for (int i = 2; i < num - 1 ; i++){//loop for to check if num  
is divisible by i  
            if (num % i == 0) {  
                num1 = num1 + i;// addition the index we find to the  
num1 to know if num is a perfect number  
                res = res + " + " + i;//add i to the result  
            }//if  
        }//for  
        if (num1 == num){ // if num1 equal to num he is a perfect number  
            System.out.println(res);  
        }//if  
        else { // he's not a perfect number  
            System.out.println(num + " " + "is not a perfect number");  
        }  
    }  
}
```

```

    }
}
}

```

OneOfEachStat :

```

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.
```

```
double totalChild = 0;
```

```
int fam2 = 0;
```

```
int fam3 = 0;
```

```
int fam4OrMore = 0;
```

```
for (int i = 0; i < T ; i++) { // loop for to simulate the number  
of families
```

```
    int counter = 0;
```

```
    boolean boy = true;
```

```
    boolean girl = true;
```

```
    while (boy || girl) { // while girl or boy are true continue
```

```
        double rnd = generator.nextDouble();
```

```
        if (rnd <= 0.5) { //boy
```

```
            boy = false;
```

```
            counter++;
```

```
        }//if
```

```
        else { //girl
```

```
            girl = false;
```

```
            counter++;
```

```
        }//else
```

```
    }//while
```

```
    if (counter == 2){// if the counter is 2 add to the fam2
```

```
        fam2 += 1;
```



```

    }

    else if (counter == 3){// if the counter is 3 add to the
fam3
        fam3 += 1;
    }

    else {// if the counter is 4 add to the fam4OrMore
        fam4OrMore += 1;
    }
    totalChild += counter;

}

}

double average = totalChild / T;//average
System.out.println("Average: " + average + " children to get at
least one of each gender.");
System.out.println("Number of families with 2 children: " +
fam2);
System.out.println("Number of families with 3 children: " +
fam3);
System.out.println("Number of families with 4 or more children:
" + fam4OrMore);

// we need to know who is the common number of children

if ( fam2 > fam3 && fam2 > fam4OrMore){
    System.out.println("The most common number of children is
2.");
}

```

```
    }

    if ( fam3 > fam2 && fam3 > fam4OrMore){
        System.out.println("The most common number of children is
3.");
    }

    if ( fam4OrMore > fam3 && fam4OrMore > fam2){
        System.out.println("The most common number of children is
4 or more.");
    }

}

}
```