

Homework2

Assignment 1: Divisors

```
public class Divisors {  
    public static void main(String[] args) {  
        int num = Integer.parseInt(args[0]);  
        for (int i = 1; i <= num; i++) {  
            if (num%i == 0) {  
                System.out.println(i);  
            }  
        }  
    }  
}
```

Assignment 2: Reversing a string

```
public class Reverse {  
    public static void main(String[] args) {  
        String word = args[0];  
        for (int i = word.length()-1; i >= 0; i--) {  
            System.out.print (word.charAt(i));  
        }  
        System.out.println();  
        char middle = word.charAt(((word.length()-1)/2));  
        System.out.println("The middle character is " +  
middle);  
    }  
}
```

Assignment 3: Lucky streak

```
public class InOrder {  
    public static void main(String[] args) {  
        int pre = (int) (Math.random()*(10-0));  
        System.out.print(pre + " ");  
        int next = (int) (Math.random()*(10-0));  
        while (next>=pre) {  
            System.out.print(next + " ");  
            pre = next;  
            next = (int) (Math.random()*(10-0));  
        }  
    }  
}
```

Assignment 4: Perfect Numbers

```
public class perfect {
    public static void main(String[] args) {
        int num = Integer.parseInt(args[0]);
        int sum = 1;
        String sentence = "";
        for (int i = 2; i < num; i++) {
            if (num%i == 0) {
                sum = sum + i;
                sentence = sentence + " + " + i;
            }
        }
        if (sum == num) {
            System.out.println(num + " is a perfect number
since " + num + " = 1" + sentence);
        } else {
            System.out.println(num + " is not a perfect
number");
        }
    }
}
```

Assignment 5: Damka Board

```
public class DamkaBoard {  
    public static void main(String[] args) {  
        int n = Integer.parseInt(args[0]);  
        for (int i = 0; i < n; i++) {  
            for(int j = 0; j < n; j++) {  
                System.out.print("* ");  
            }  
            System.out.println();  
            if (i%2 == 0) {  
                System.out.print(" ");  
            }  
        }  
    }  
}
```

Assignment 6: One of Each Stats

```
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);
        double sumToAverage = 0;
        int sum2 = 0;
        int sum3 = 0;
        int sum4 = 0;
        int sum = 0;
        String commonNum = "";
        for (int i = 1; i<=T; i++) {
            int b = 1;
            int g = 2;
            boolean girl = false;
            boolean boy = false;
            while (boy == false || girl == false) {
                int random = (int) (generator.nextDouble() * ((2)+1));
                sum = sum + 1;
                sumToAverage = sumToAverage + 1;
                if (random == b) {
                    boy = true;
                } else {
                    girl = true;
                }
            }
            if (sum == 2) {
                sum2 = sum2 + 1;
            } else if (sum == 3) {
                sum3 = sum3 + 1;
            } else if (sum >= 4) {
                sum4 = sum4 + 1;
            }
            sum = 0;
        }
        sumToAverage = sumToAverage/T;
        int sumMax = Math.max(Math.max(sum2, sum3), sum4);
        if (sumMax == sum2) {
            commonNum = "2";
        } else if (sumMax == sum3) {
            commonNum = "3";
        } else if (sumMax == sum4) {
            commonNum = "4 or more";
        }
        System.out.println("Average: " + sumToAverage + " children to
get at least one of each gender.");
        System.out.println("Number of families with 2 children: " +
sum2);
        System.out.println("Number of families with 3 children: " +
sum3);
        System.out.println("Number of families with 4 or more
children: " + sum4);
        System.out.println("The most common number of children is " +
commonNum + ".");
    }
}
```