Home work 2 Ohad Swissa

Divisors

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

	}
}
```

Reverse

```
public class Reverse {
	public static void main (String[] args){
		//insert a string
		String s = args [0];
		String rev = "";
		int n = s.length()-1;
		int mid = s.length()/2;
		while (n >= 0)
		{
			rev = rev + s.charAt(n);
			n--;

		}
	System.out.println(rev);
	if (s.length() % 2 ==0)
	{
		System.out.println("The middle character is "+ s.charAt(mid-1));
	}
	else System.out.println("The middle character is "+ s.charAt(mid));
	}
}
```

InOrder

```
public class InOrder {
	public static void main (String[] args) {
		int num1 = 0;
		int temp = 0;
		boolean stop = false;
		while (stop == false)
		{
		 num1 = (int)(Math.random() * 10);
		 if (num1 >= temp)
		 {
			temp = num1;
		   System.out.print(num1+" ");
		 }
		 else
		 {
			stop = true;
		 }

		}

		}
}
```

DamkaBoard

```
public class DamkaBoard {
	public static void main(String[] args) {
		int a = Integer.parseInt(args[0]);
		int row = 1;
		for (int i=1; i<=a; i++) //colums
		{
			for (int j=1; j<=a; j++) //rows
			{
				if (row % 2 ==0) System.out.print(" *");
				else System.out.print("* ");

			}
	System.out.println();
		row++;
		}
	}
}
```

Perfect

```
public class Perfect {
	public static void main (String[] args) {
		int a = Integer.parseInt(args[0]);
		int sum = 0;
		int max = 0;
		int j = a - 1;
		boolean maximal = false;
		//find the maximal divisor for taking the last '+' out of the string
		while ( maximal == false)
		{
			if (a % j == 0)
			{
				max = j;
				maximal = true;
			}
			j--;
		}

		String s ="";
		for (int i = 1; i < a; i++)
		{
			if (a % i == 0)
			{
				sum = sum + i;
				if (i == max) s = s + i;
				else s = s + i + " + ";
			}
		}
	int place = s.length();
		if (sum == a)
		{
			//s = s - s.charAt(s-1);
			System.out.println(a+" is a perfect number since "+ a + " = "+ s);
		}
		else System.out.println(a+" is not a perfect number");
	}
}
```

OneOfEachStats

```
public class OneOfEachStats {
        public static void main (String[] args) {
                // Gets the two command-line arguments
                int a = 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 sum = 0;
                int count2 = 0;
                int count3 = 0;
                int count4 = 0;
                for (int i=1; i<=a; i++)
                {
                  boolean stop = false;
                  int boy = 0;
                  int girl = 0;
                  int children = 0;
                  double num1 = 0;
                  while (stop == false)
                  {
                    num1 = generator.nextDouble();
                    if (num1 > 0.5)
                    {
                            girl++;
                    }
                    if (num1 < 0.5)
                    {
                         boy++;
                    }
                    if (boy>=1 && girl>=1)
                    {
                    stop = true;
                    }
                  }
                  children = boy + girl;
                  sum = sum + children;
                  if (children == 2) count2++; //families with 2
                  if (children == 3) count3++; //families with 3
                  if (children >= 4) count4++; //families with 4
           }
           int max = Math.max(count2,count3);
                //int maximal = Math.max(max,count4);
                System.out.println("Average: "+sum/a+" 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 > count3) && (count4 > count2)) System.out.println("The most common
number of children is 4.");

        }
}
```