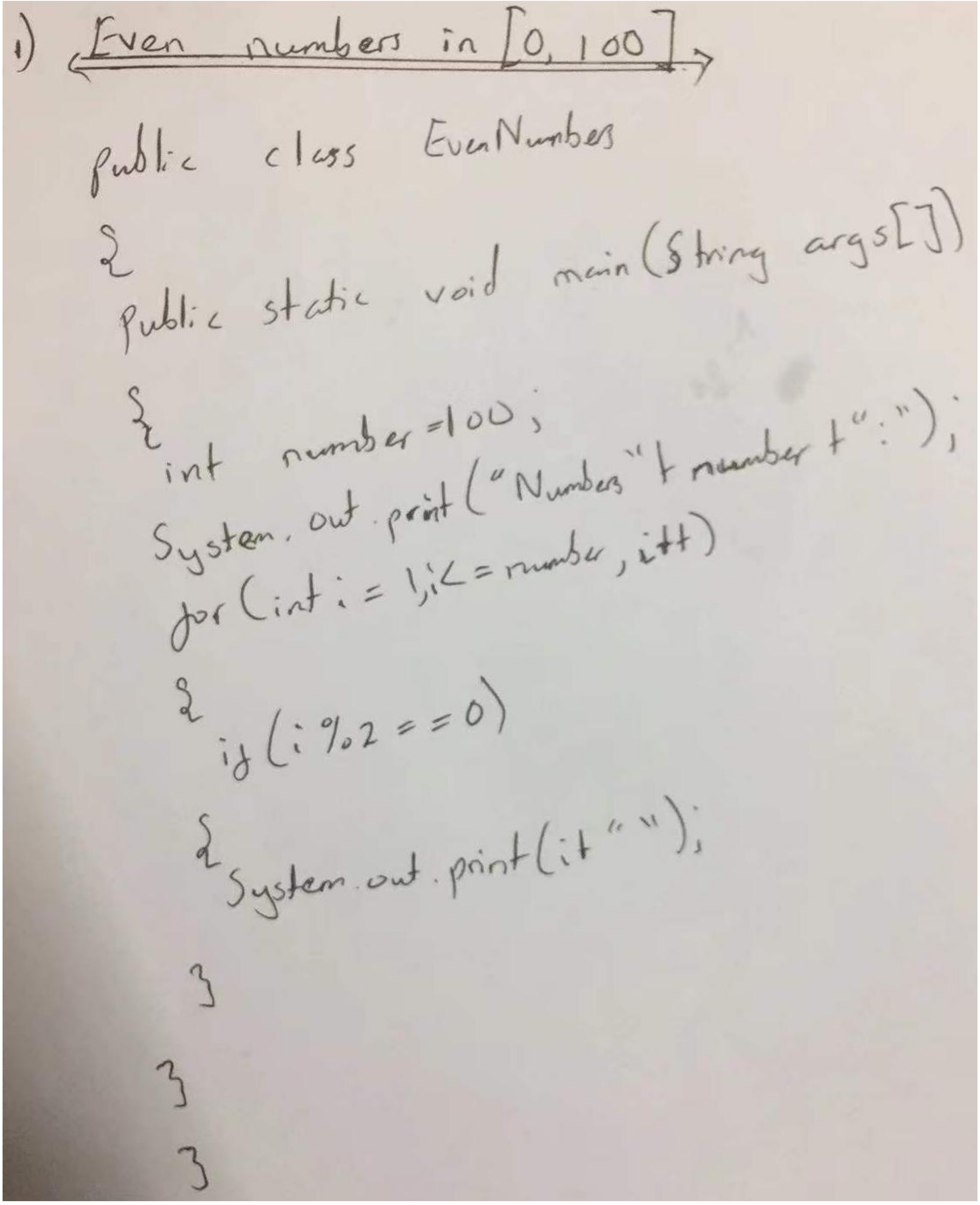
2021290010 - Mahadi Sajjad Neloy

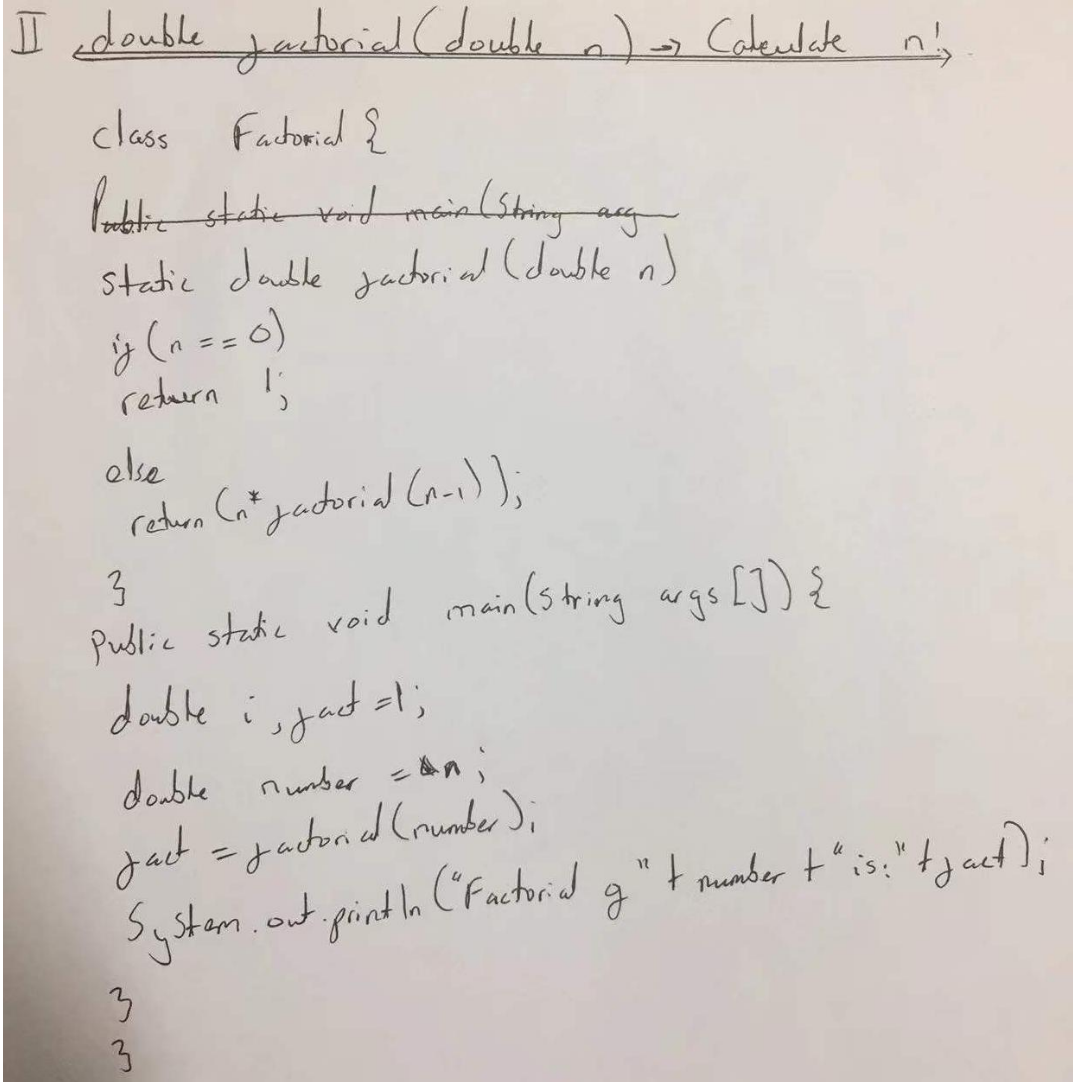
COMPUTER SCIENCE DEPARTMENT

JAVA - EXAM



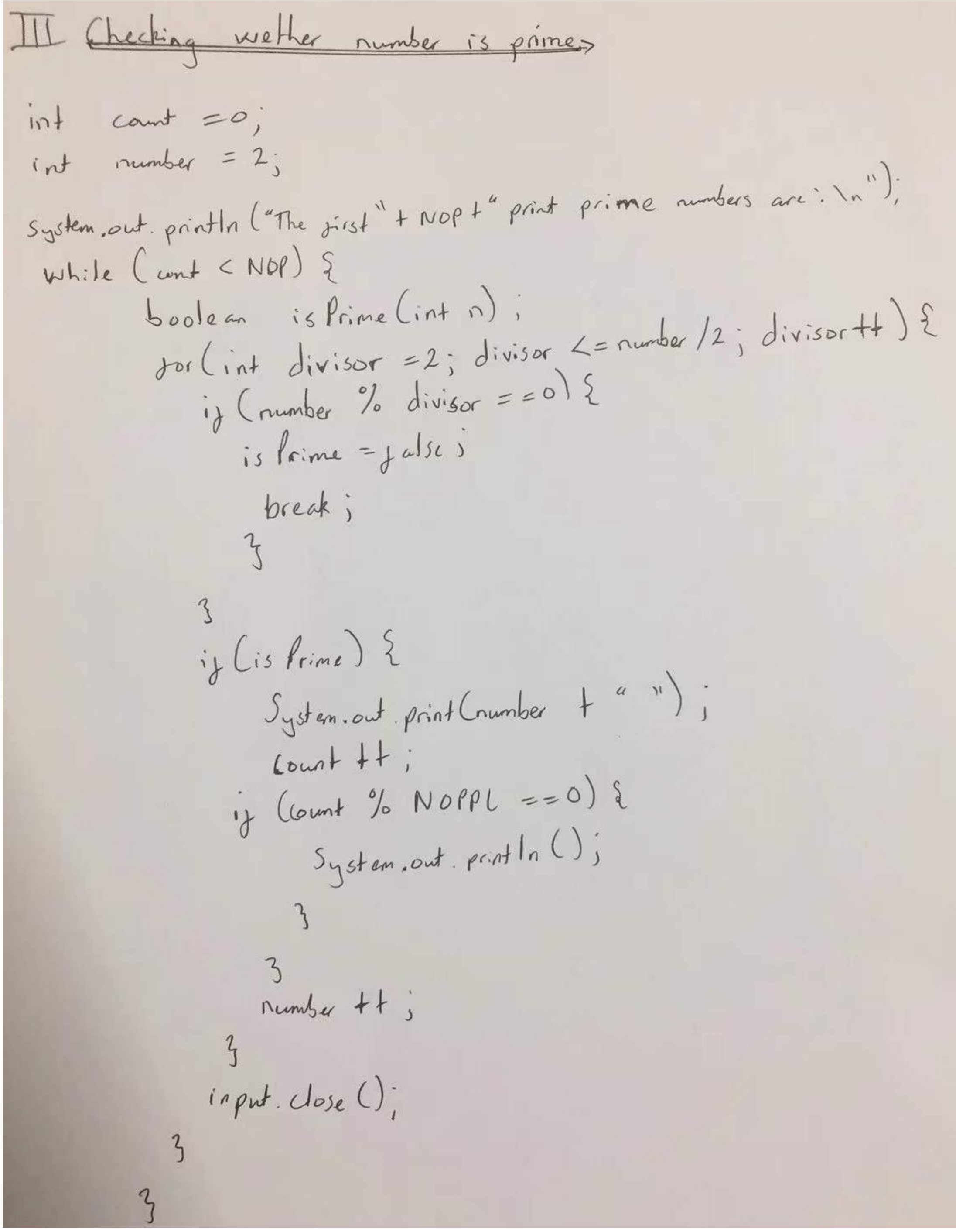
1) Even numbers in [0, 100]

```
public class EvenNumbers
{
 public static void main(String args[])
 {
  int number=100;
  System.out.print("Numbers"+ number +":");
  for(int i = 1;i<=number, i++)
  {
   if(i%2==0)
    {
     System.out.print(i+" ");
    }
  }
 }
}
```



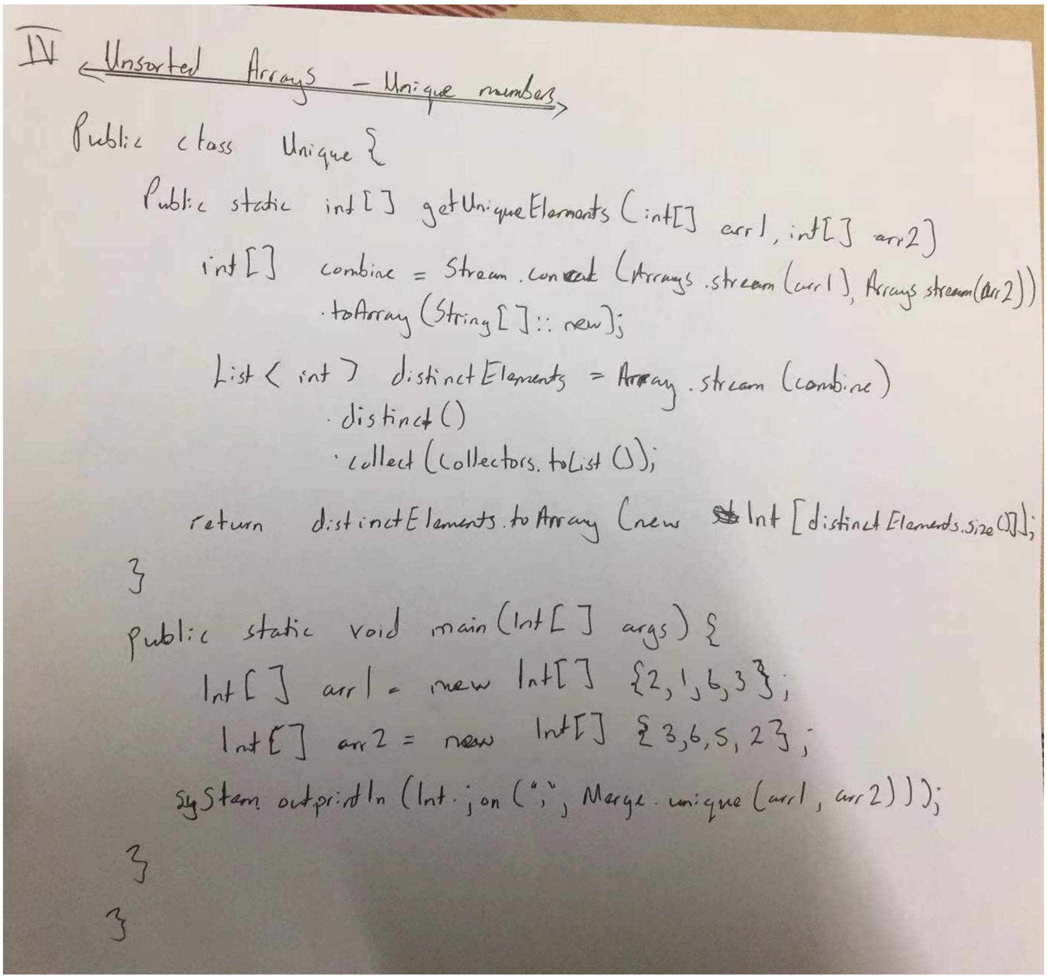
II double factorial(double n) → Calculate n!

```
class Factorial {
~~Public static void main(String arg~~
static double factorial(double n)
 if (n == 0)
 return 1;

else
 return (n*factorial(n-1));

3
Public static void main(String args[]) {

 double i, fact =1;
 double number = n;
 fact = factorial(number);
 System.out.println("Factorial of" + number + "is:" + fact);

 3
 3
```



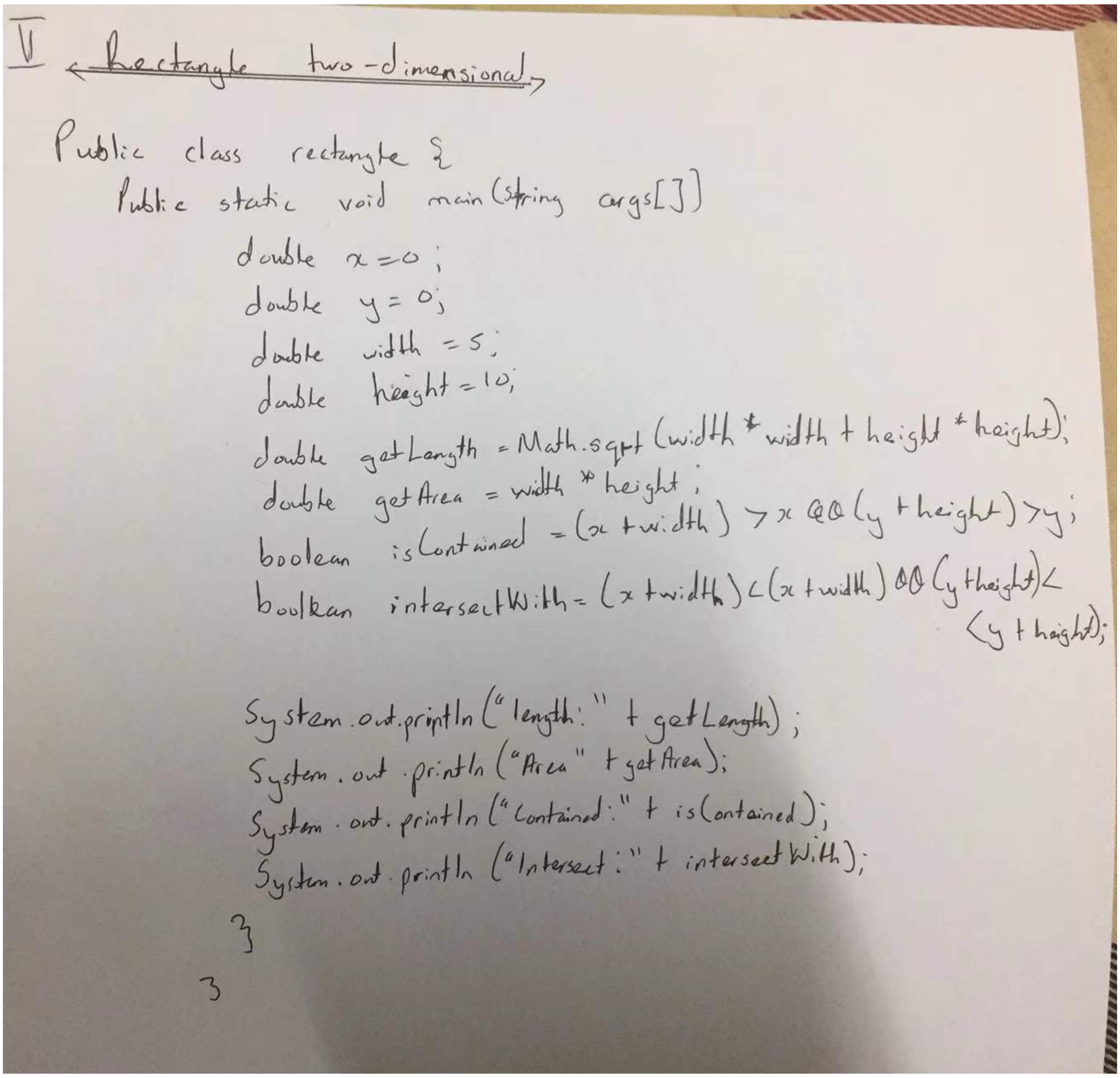
III Checking wether number is prime

```
int count =0;
int number = 2;

System.out.println("The first" + NOP + " print prime numbers are:\n");
 while (cont < NOP) {
        boolean isPrime(int n);
        for(int divisor =2; divisor <= number/2; divisor++) {
           if (number % divisor ==0) {
              isPrime = false;
               break;
              }

           }
           if (isPrime) {
                System.out.print(number + " ");
                count ++;
             if (count % NOPPL ==0) {
                   System.out.println();
                 }

               }
              number ++;
            }
           input.close();
        }
     }
```



IV Unsorted Arrays - Unique numbers

```
Public class Unique {
    Public static int[] getUniqueElements (int[] arr1, int[] arr2)
        int[] combine = Stream.concat (Arrays.stream (arr1), Arrays stream(arr2))
                        .toArray (String[]:: new);
        List < int > distinctElements = Array.stream (combine)
                        .distinct()
                        .collect (Collectors.toList ());
      return distinctElements.toArray (new Int [distinctElements.size()]);
  }
  public static void main(Int[] args) {
        Int[] arr1 = new Int[] {2,1,6,3};
         Int[] arr2 = new Int[] {3,6,5,2};
      system out.println (Int.join(";", Merge.unique(arr1, arr2)));
  }
}
```



V <Rectangle two-dimensional>

```
Public class rectangle {
    Public static void main(string args[])
        double x=0;
        double y = 0;
        double width = 5;
        double height = 10;
        double getLength = Math.sqrt (width * width + height * height);
        double getArea = width * height;
        boolean isContained = (x + width) > x && (y + height) > y;
        boolean intersectWith = (x + width) < (x + width) && (y + height) <
                                                            < y + height);

        System.out.println("length:" + getLength);
        System.out.println("Area" + getArea);
        System.out.println("Contained:" + isContained);
        System.out.println("Intersect:" + intersectWith);
    }
}
```