Home Work Assignment 2

Divisors

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

Reverse

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

In Order

```
public class InOrder {
   public static void main(String[] args) {
      int prev = -1;
      do {
         int next = (int) (Math.random() * 10);

         if (next >= prev) {
            System.out.print(next + " ");
            prev = next;
         } else {
            break;
         }
      } while (true);
   }
}
```

Perfect

```
public class Perfect {
   public static void main(String[] args) {
      int input = Integer.parseInt(args[0]);
      int sum = 1;
      String divisorString = "1";

      for (int div =2; div < input; div++) {
         if (input % div == 0) {
            sum += div;
           divisorString = divisorString+ " " + "+ div ;

         }
      }

      if (sum == input) {
         System.out.println(input + " is a perfect number since " + input + " = " +
divisorString);
      } else {
         System.out.println(input + " is not a perfect number");
      }
   }
}
```

Damka Board

```
public class DamkaBoard {
   public static void main(String[] args) {
      int input = Integer.parseInt(args[0]);
                String row_ev =("* ") ;
                String row_odd =(" *") ;
                for (int cols=0 ; cols < input ; cols++) {
                        if (cols % 2 == 0) {
                                for (int rows_e=0 ; rows_e < input ; rows_e++) {
                                 System.out.print(row_ev );
                                }
                                System.out.println("");
                        }else {
                                for (int rows_o=0 ; rows_o < input ; rows_o++) {
                                System.out.print(row_odd);
                                }
                                System.out.println("");
                                }
                }
                }
          }
```

One of Each Stats

```
import java.util.Random;
public class OneOfEachStats {
   public static void main(String[] args) {
        int tests = Integer.parseInt(args[0]);
        int seed = Integer.parseInt(args[1]);
        int family2 = 0;
        int family3 = 0;
        int family4 = 0;
        double countC = 0.0 ;
        Random generator = new Random(seed);
        for (int i=0 ; i<tests ; i++) {
        boolean boy = false;
        boolean girl = false;
        int count = 0 ;
         do {
                double x = generator.nextDouble() ;
                countC++ ;
                        if (x < 0.5) {
                        boy = true ;
                        count += 1 ;
                }else {
                        girl = true ;
                        count += 1 ;
                }
                } while ((boy == false) || (girl == false)) ;
                if (count == 2){
                        family2+=1 ;
                } else if (count == 3) {
                        family3+=1;
                } else if (count >=4) {
                        family4+=1;
                }
        }
```

```
        double averageChildren = countC / tests;
        System.out.println("Average: " + averageChildren + " children to get at least one of each gender.") ;
        System.out.println("Number of families with 2 children: " + family2);
        System.out.println("Number of families with 3 children: " + family3);
        System.out.println("Number of families with 4 or more children: " +family4);

        if (family2>family3 && family2>family4) {
                System.out.println("The most common number of children is 2.");
                }else if (family3>family2 && family3>family4) {
                System.out.println("The most common number of children is 3.");
                        }else if (family4>family2 && family4>family3) {
                        System.out.println("The most common number of children is 4.");
                        }
}
}
```