```java
/**
 *  Gets a command-line argument (int), and prints all the divisors of the given number.
 */
public class Divisors {
    public static void main (String[] args) {
        //// Put your code here
        int num = Integer.parseInt(args[0]);
        for (int i = 1; i <= num; i++){
            if ((num % i) == 0) {
                System.out.println(i);
            }
        }
    }
}
```

```java
/**
 * Prints a given string, backward. Then prints the middle character in the string.
 * The program expects to get one command-line argument: A string.
 */
public class Reverse {
    public static void main (String[] args){
        //// Put your code here
        String inS = args[0];
        int lengthS = inS.length();
        for (int i = lengthS - 1; i >=0; i--) {
            System.out.print(inS.charAt(i));    // prints the given string in reverse
        }
        System.out.println();   // new line
        int middleIndex = (lengthS - 1) / 2;
        char middleC = inS.charAt(middleIndex);
        System.out.println("The middle character is " + middleC);   // prints the char in
        the middle of the given string
    }
}
```

```java
/**
 *  Generates and prints random integers in the range [0,10),
 *  as long as they form a non-decreasing sequence.
 */
public class InOrder {
    public static void main (String[] args) {
        //// Write your code here
        int firstRand = (int) (Math.random() * 10);
        int secondRand = firstRand + 1;
        while (firstRand < secondRand) {
            System.out.print(firstRand);
            secondRand = (int) (Math.random() * 10);
            if ( Math.max (firstRand, secondRand) != secondRand ){
                firstRand = secondRand; // to get out of the while loop
            }
            else {
                firstRand = secondRand;
                secondRand = firstRand + 1;
            }
        }
    }
}
```

```java
/**
 *  Gets a command-line argument (int), and chekcs if the given number is perfect.
 */
public class Perfect {
    public static void main (String[] args) {
        //// Put your code here
        int num = Integer.parseInt(args[0]);
        String outS = num + " is a perfect number since " + num + " = 1";
        int i = 2;
        int sum = 1;
        for (i = 2; i < num; i++) {
            if (num % i == 0 ) {
                outS += " + " + i;
                sum += i;
            }
        }
        if (sum == num) {
            System.out.println(outS);
        }
        else {
            System.out.println(num + " is not a perfect number");
        }
    }
}
```

```java
/**
 *  Gets a command-line argument n (int), and prints an n-by-n damka board.
 */
public class DamkaBoard {
    public static void main(String[] args) {
        //// Put your code here
        int boardLength = Integer.parseInt(args[0]);
        for (int i = 0; i < boardLength; i += 2) {
            for (int j = 0; (j < boardLength); j++) {
                System.out.print("* ");
            }
            System.out.println();
            if((i + 1) != boardLength) { //so that it would work with odd numbers
                for (int j = 0; (j < boardLength); j++) {
                    System.out.print(" *");
                }
                System.out.println();
            }
        }
    }
}
```

C:\Users\ארז\university\intro2cs\homework\hw02-ErezYousfan\DamkaBoard.java   20:01 2023 דצמבר 25 יום שני

/**
 * Gets a command-line argument n (int), and prints an n-by-n damka board.
 */
public class DamkaBoard {
    public static void main(String[] args) {
        //// Put your code here
        int boardLength = Integer.parseInt(args[0]);

```java
/**
 *  Simulates the formation of a family in which the parents decide
 *  to have children until they have at least one child of each gender.
 */
public class OneOfEach {
    public static void main (String[] args) {
        //// Put your code here
        int num = (int) (Math.random() * 2);
        boolean boy = num == 0;
        boolean girl = !boy;
        int kidsNum = 1;
        if (boy) {
            System.out.print("b");
        }
        else {
            System.out.print("g");
        }
        while (!boy || !girl) {
            num = (int) (Math.random() * 2);
            if (num == 0) {
                System.out.print(" b");
                boy = true;
            }
            else {
                System.out.print(" g");
                girl = true;
            }
            kidsNum++;
        }
        System.out.println();
        System.out.println("You made it... and you now have " + kidsNum + " children");
    }
}
```

```java
/**
 *  Computes some statistics about families in which the parents decide
 *  to have children until they have at least one child of each gender.
 *  The program expects to get one command-line argument: an int value
 *  that determines how many families to simulate.
 */
public class OneOfEachStats1 {
    public static void main (String[] args) {
        //// Put your code here
        int T = Integer.parseInt(args[0]); // number of families given
        int twoKids = 0, threeKids = 0, fourOrMore = 0;
        int totalKids = 0;
        for (int i = 0; i < T; i++){
            int num = (int) (Math.random() * 2);
            boolean boy = num == 0;
            boolean girl = !boy;
            int kidsNum = 1;
            while (!boy || !girl) {
                num = (int) (Math.random() * 2);
                if (num == 0) {
                    boy = true;
                }
                else {
                    girl = true;
                }
                kidsNum++;
            }
            if(kidsNum == 2) twoKids++;
            else if (kidsNum == 3) threeKids++;
            else fourOrMore++;
            totalKids += kidsNum;
        }
        double avg = totalKids / ((double) T);
        System.out.println("Average: " + avg + " children to get at least one of each
        gender.");
        System.out.println("Number of families with 2 children: " + twoKids);
        System.out.println("Number of families with 3 children: " + threeKids);
        System.out.println("Number of families with 4 or more children: " + fourOrMore);
        int commonNumber = 0;
        if (twoKids >= threeKids && twoKids >= fourOrMore){
            commonNumber = 2;
        }
        else if(threeKids >= twoKids && threeKids >= fourOrMore) {
            commonNumber = 3;
        }
        else {
            commonNumber = 4;
        }
        System.out.println("The most common number of children is " + commonNumber + ".");
    }
}
```

```java
import java.util.Random;
/**
 *  Computes some statistics about families in which the parents decide
 *  to have children until they have at least one child of each gender.
 *  The program expects to get two command-line arguments: an int value
 *  that determines how many families to simulate, and an int value
 *  that serves as the seed of the random numbers generated by the program.
 *  Example usage: % java OneOfEachStats 1000 1
 */
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);
        int twoKids = 0, threeKids = 0, fourOrMore = 0;
        int totalKids = 0;
        for (int i = 0; i < T; i++){
            int num = (int) (generator.nextDouble() * 2);
            boolean boy = num == 0;
            boolean girl = !boy;
            int kidsNum = 1;
            while (!boy || !girl) {
                num = (int) (generator.nextDouble() * 2);
                if (num == 0) {
                    boy = true;
                }
                else {
                    girl = true;
                }
                kidsNum++;
            }
            if(kidsNum == 2) twoKids++;
            else if (kidsNum == 3) threeKids++;
            else fourOrMore++;
            totalKids += kidsNum;
        }
        double avg = totalKids / ((double) T);
        System.out.println("Average: " + avg + " children to get at least one of each
        gender.");
        System.out.println("Number of families with 2 children: " + twoKids);
        System.out.println("Number of families with 3 children: " + threeKids);
        System.out.println("Number of families with 4 or more children: " + fourOrMore);
        int commonNumber = 0;
        if (twoKids >= threeKids && twoKids >= fourOrMore){
            commonNumber = 2;
        }
        else if(threeKids >= twoKids && threeKids >= fourOrMore) {
            commonNumber = 3;
        }
        else {
            commonNumber = 4;
        }
        System.out.println("The most common number of children is " + commonNumber + ".");
    }
}
```