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/**
 * Gets a command-line argument (int), and prints all the divisors of the given number.
 */
public class Divisors {
    public static void main (String[] args) {
        int x = Integer.parseInt(args[0]);
        boolean divisor = true;

        for (int count = 1; count <= x; count++){
            divisor = (x % count == 0);

            if (divisor){
                System.out.println(count);
            }
        }
    }
}
```

```
/**
 * 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){
        String word = args[0];
        String revword = "";

        for (int index = 0; index < word.length(); index++){
            char chr = word.charAt(index);
            revword = chr+revword;
        }
        System.out.println(revword);
        System.out.println(word.charAt(word.length() / 2));
    }
}
```

```
/**
 * 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) {
        int min = 0;
        int max = 9;
        int num1 = -1;
        int num2;

        do{
            num2 = (int) (Math.random() * (max - min + 1));

            if (num2 >= num1) {
                System.out.print(num2 + " ");
                num1 = num2;
            } else {
                break;
            }

        }while(true);

    }
}
```

```

/**
 * Gets a command-line argument (int), and chekcs if the given number is perfect.
 */
public class Perfect {
    public static void main (String[] args) {
        int x = Integer.parseInt(args [0]);
        String str = (x+" is a perfect number since "+x+" = 1");
        int sum = 1;

        for (int count = 2; count < x; count++){
            if (x % count == 0) {
                sum += count;
                str = str + " + " + count;
            }
        }
        if (sum == x){
            System.out.println(str);
        } else {
            System.out.println(x+" is not a perfect number");
        }
    }
}

```

```

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

        int i = 0;
        while (i < n) {
            int j = 0;
            while (j < n){
                if (i % 2 == 0){
                    System.out.print("* ");
                } else {
                    System.out.print(" *");
                }

                j++;

            }
            System.out.println();
            i++;
        }
    }
}

```

```

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 input = 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 counter = 0;
        int stat2 = 0;
        int stat3 = 0;
        int stat4 = 0;
        double totalChildren = 0;

        while (input > counter){
            int i = 0;
            int j = 0;

            while (i == 0 || j == 0) {
                double x = Math.random();

                if (x >= 0.5){
                    i++;
                } else {
                    j++;
                }
            }

            int sum = i + j;
            totalChildren += sum;

            if (sum == 2){
                stat2++;
            } else if (sum == 3){
                stat3++;
            } else if (sum >= 4){
                stat4++;
            }
            counter++;
        }
        double average = totalChildren / input;
    }
}

```

```
gender.");
    System.out.println("Average: "+average+" children to get at least one of each
gender.");
    System.out.println("Number of families with 2 children: "+stat2);
    System.out.println("Number of families with 3 children: "+stat3);
    System.out.println("Number of families with 4 or more children: "+stat4);
    if (stat2 > stat3 && stat2 > stat4){
        System.out.println("The most common number of children is 2");
    } else if (stat3 > stat2 && stat3 > stat4){
        System.out.println("The most common number of children is 3");
    } else if (stat4 > stat2 && stat4 > stat3){
        System.out.println("The most common number of children is 4 or
more");
    }
    }
}
```