

```
1 import java.util.Random;
2 /**
3  * Computes some statistics about families in which the parents decide
4  * to have children until they have at least one child of each gender.
5  * The program expects to get two command-line arguments: an int value
6  * that determines how many families to simulate, and an int value
7  * that serves as the seed of the random numbers generated by the program.
8  * Example usage: % java OneOfEachStats 1000 1
9  */
10 public class OneOfEachStats {
11     public static void main (String[] args) {
12         // Gets the two command-line arguments
13         int T = Integer.parseInt(args[0]);
14         int seed = Integer.parseInt(args[1]);
15         // Initailizes a random numbers generator with the given seed value
16         Random generator = new Random(seed);
17
18         double numberOfExperiments = Double.parseDouble(args[0]);
19         int tryNum = 1;
20         int sumOfAllKids = 0;
21         int parentsWith2kids = 0;
22         int parentsWith3kids = 0;
23         int parentsWith4orMorekids = 0;
24
25         while (tryNum <= numberOfExperiments) {
26             double numOfGirls = 0;
27             double numOfBoys = 0;
28
29             while (numOfGirls == 0 || numOfBoys == 0 || numOfBoys < 1 || numOfGirls < 1) {
30                 double theRandom = generator.nextDouble();
31                 String boyOrGirl = theRandom > 0.5 ? "b" : "g";
32
33                 if (boyOrGirl == "b") {
34                     numOfBoys++;
35                 } else {
36                     numOfGirls++;
37                 }
38             }
39
40             double numOfKids = numOfGirls + numOfBoys;
41
42             if (numOfKids == 2) {
43                 parentsWith2kids++;
44             } else if (numOfKids == 3) {
45                 parentsWith3kids++;
46             } else if (numOfKids >= 4) {
47                 parentsWith4orMorekids++;
48             }
49
50             sumOfAllKids += numOfKids;
51             tryNum++;
52         }
53
54         double average = sumOfAllKids / numberOfExperiments;
55         String message2 = "Average: " + average + " children to get at least one of each gender.";
56         System.out.println(message2);
57
58         String message3 = "Number of families with 2 children: " + parentsWith2kids;
59         System.out.println(message3);
60
61         String message4 = "Number of families with 3 children: " + parentsWith3kids;
62         System.out.println(message4);
63
64         String message5 = "Number of families with 4 or more children: " + parentsWith4orMorekids;
65         System.out.println(message5);
66
67         String mostCommon = "";
68
69         if (parentsWith2kids >= parentsWith3kids) {
70             if (parentsWith2kids >= parentsWith4orMorekids) {
71                 mostCommon = "2";
72             } else {
73                 mostCommon = "4 or more";
74             }
75         } else {
76             if (parentsWith3kids >= parentsWith4orMorekids) {
77                 mostCommon = "3";
78             } else {
79                 mostCommon = "4 or more";
80             }
81         }
82
83         String message6 = "The most common number of children is " + mostCommon + ".";
84         System.out.println(message6);
85     }
86 }
```