Reminder: this document is supposed to be confidential. Please do not show this to anyone else.

Bulgarian Table

See that you have 45 cards in each pile. You separate these cards into several piles. Then you pull one card from each pile and put it into a new pile of card. Repeat this step for some times and you will eventually end up with piles that contains 1,2,3,4,5,6,7,8,9 cards.

This program is to show this process. One can choose to separate these cards in random piles by computer or certain piles by manual, which can be achieved by adding "-u" to command line. One can also choose to show every steps of moving piles by adding "-s" to command line.

The program was achieved on eclipse:

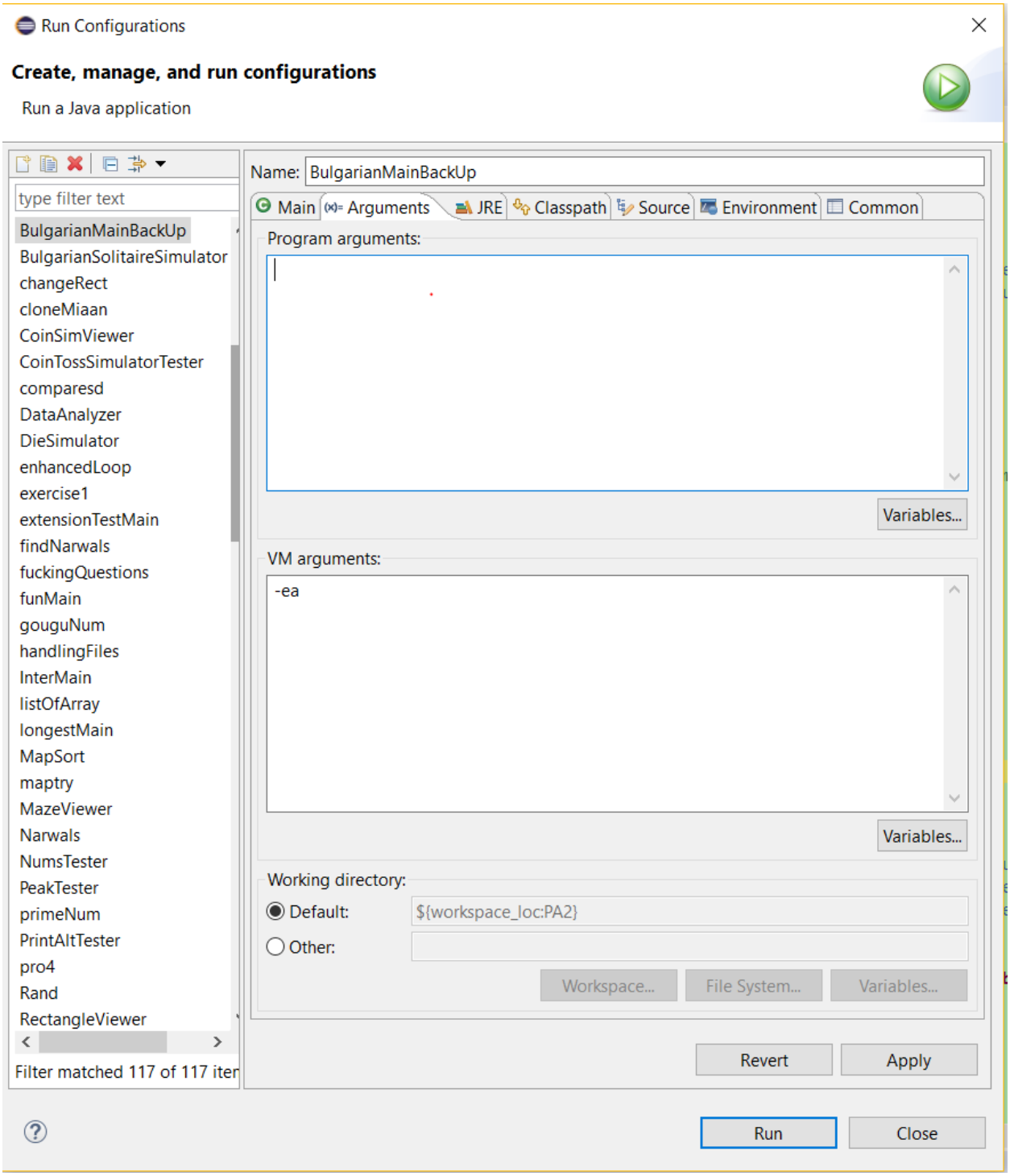
BulgarianMainBackUp.java | BulgarianSolitaireSimulator.java

```
1  import java.util.ArrayList;
3
4  public class BulgarianMainBackUp
5  {
6     /**
7      * This main method is to receive and determine which model and display are instructed,
8      * run the game in the model and display choosed by instruction and show the results.
9      * @param args
10     */
11    public static void main(String[] args)
12    {
13       boolean singleStep = false;
14       boolean userConfig = false;
15
16          // Read from instructions flags which decide the game model and display.
17          for (int i = 0; i < args.length; i++)
18          {
19             if (args[i].equals("-u"))
20             {
21                userConfig = true;
22             }
23             else if (args[i].equals("-s"))
24             {
25                singleStep = true;
26             }
27          }
```

1. Run default mode (random piles by computer, no step by step):

Reminder: this document is supposed to be confidential. Please do not show this to anyone else.

R



Results:

Reminder: this document is supposed to be confidential. Please do not show this to anyone else.

```
Initial configuration: 8 35 1 1
[1] Current Configuration: 7 34 4
[2] Current Configuration: 6 33 3 3
[3] Current Configuration: 5 32 2 2 4
[4] Current Configuration: 4 31 1 1 3 5
[5] Current Configuration: 3 30 2 4 6
[6] Current Configuration: 2 29 1 3 5 5
[7] Current Configuration: 1 28 2 4 4 6
[8] Current Configuration: 27 1 3 3 5 6
[9] Current Configuration: 26 2 2 4 5 6
[10] Current Configuration: 25 1 1 3 4 5 6
[11] Current Configuration: 24 2 3 4 5 7
[12] Current Configuration: 23 1 2 3 4 6 6
[13] Current Configuration: 22 1 2 3 5 5 7
[14] Current Configuration: 21 1 2 4 4 6 7
[15] Current Configuration: 20 1 3 3 5 6 7
[16] Current Configuration: 19 2 2 4 5 6 7
[17] Current Configuration: 18 1 1 3 4 5 6 7
[18] Current Configuration: 17 2 3 4 5 6 8
[19] Current Configuration: 16 1 2 3 4 5 7 7
[20] Current Configuration: 15 1 2 3 4 6 6 8
[21] Current Configuration: 14 1 2 3 5 5 7 8
[22] Current Configuration: 13 1 2 4 4 6 7 8
[23] Current Configuration: 12 1 3 3 5 6 7 8
[24] Current Configuration: 11 2 2 4 5 6 7 8
[25] Current Configuration: 10 1 1 3 4 5 6 7 8
[26] Current Configuration: 9 2 3 4 5 6 7 9
[27] Current Configuration: 8 1 2 3 4 5 6 8 8
[28] Current Configuration: 7 1 2 3 4 5 7 7 9
[29] Current Configuration: 6 1 2 3 4 6 6 8 9
[30] Current Configuration: 5 1 2 3 5 5 7 8 9
[31] Current Configuration: 4 1 2 4 4 6 7 8 9
[32] Current Configuration: 3 1 3 3 5 6 7 8 9
[33] Current Configuration: 2 2 2 4 5 6 7 8 9
[34] Current Configuration: 1 1 1 3 4 5 6 7 8 9
[35] Current Configuration: 2 3 4 5 6 7 8 10
[36] Current Configuration: 1 2 3 4 5 6 7 9 8
```

2. Run “-u” mode (customized piles):

Reminder: this document is supposed to be confidential. Please do not show this to anyone else.

```
Number of total card is 45
You will be entering the initial configuration of the cards (i.e., how many in each
Please enter a space-separated list of positive integers followed by newline:
1 12 5 8 10 9
Initial configuration: 1 12 5 8 10 9
[1] Current Configuration: 11 4 7 9 8 6
[2] Current Configuration: 10 3 6 8 7 5 6
[3] Current Configuration: 9 2 5 7 6 4 5 7
[4] Current Configuration: 8 1 4 6 5 3 4 6 8
[5] Current Configuration: 7 3 5 4 2 3 5 7 9
[6] Current Configuration: 6 2 4 3 1 2 4 6 8 9
[7] Current Configuration: 5 1 3 2 1 3 5 7 8 10
[8] Current Configuration: 4 2 1 2 4 6 7 9 10
[9] Current Configuration: 3 1 1 3 5 6 8 9 9
[10] Current Configuration: 2 2 4 5 7 8 8 9
[11] Current Configuration: 1 1 3 4 6 7 7 8 8
[12] Current Configuration: 2 3 5 6 6 7 7 9
[13] Current Configuration: 1 2 4 5 5 6 6 8 8
[14] Current Configuration: 1 3 4 4 5 5 7 7 9
[15] Current Configuration: 2 3 3 4 4 6 6 8 9
[16] Current Configuration: 1 2 2 3 3 5 5 7 8 9
[17] Current Configuration: 1 1 2 2 4 4 6 7 8 10
[18] Current Configuration: 1 1 3 3 5 6 7 9 10
[19] Current Configuration: 2 2 4 5 6 8 9 9
[20] Current Configuration: 1 1 3 4 5 7 8 8 8
[21] Current Configuration: 2 3 4 6 7 7 7 9
[22] Current Configuration: 1 2 3 5 6 6 6 8 8
[23] Current Configuration: 1 2 4 5 5 5 7 7 9
[24] Current Configuration: 1 3 4 4 4 6 6 8 9
[25] Current Configuration: 2 3 3 3 5 5 7 8 9
[26] Current Configuration: 1 2 2 2 4 4 6 7 8 9
[27] Current Configuration: 1 1 1 3 3 5 6 7 8 10
[28] Current Configuration: 2 2 4 5 6 7 9 10
[29] Current Configuration: 1 1 3 4 5 6 8 9 8
[30] Current Configuration: 2 3 4 5 7 8 7 9
[31] Current Configuration: 1 2 3 4 6 7 6 8 8
```

3. Run “-s” mode (press return for each step):

```
Initial configuration: 10 4 4 3 3 21
[1] Current Configuration: 9 3 3 2 2 20 6
<Type return to continue>
[2] Current Configuration: 8 2 2 1 1 19 5 7
<Type return to continue>
[3] Current Configuration: 7 1 1 18 4 6 8
<Type return to continue>
[4] Current Configuration: 6 17 3 5 7 7
<Type return to continue>
[5] Current Configuration: 5 16 2 4 6 6 6
<Type return to continue>
[6] Current Configuration: 4 15 1 3 5 5 5 7
<Type return to continue>
[7] Current Configuration: 3 14 2 4 4 4 6 8
<Type return to continue>
[8] Current Configuration: 2 13 1 3 3 3 5 7 8
<Type return to continue>
[9] Current Configuration: 1 12 2 2 2 4 6 7 9
<Type return to continue>
[10] Current Configuration: 11 1 1 1 3 5 6 8 9
<Type return to continue>
[11] Current Configuration: 10 2 4 5 7 8 9
<Type return to continue>
[12] Current Configuration: 9 1 3 4 6 7 8 7
<Type return to continue>
[13] Current Configuration: 8 2 3 5 6 7 6 8
<Type return to continue>
[14] Current Configuration: 7 1 2 4 5 6 5 7 8
<Type return to continue>
[15] Current Configuration: 6 1 3 4 5 4 6 7 9
<Type return to continue>
[16] Current Configuration: 5 2 3 4 3 5 6 8 9
<Type return to continue>
[17] Current Configuration: 4 1 2 3 2 4 5 7 8 9
<Type return to continue>
[18] Current Configuration: 3 1 2 1 3 4 6 7 8 10
<Type return to continue>
```

4. Run “-u -s” mode (manual and one step each time):

Reminder: this document is supposed to be confidential. Please do not show this to anyone else.

```
Number of total card is 45
You will be entering the initial configuration of the cards (i.e., how many in each pi
Please enter a space-separated list of positive integers followed by newline:
44 1
Initial configuration: 44 1
[1] Current Configuration: 43 2
<Type return to continue>
[2] Current Configuration: 42 1 2
<Type return to continue>
[3] Current Configuration: 41 1 3
<Type return to continue>
[4] Current Configuration: 40 2 3
<Type return to continue>
[5] Current Configuration: 39 1 2 3
<Type return to continue>
[6] Current Configuration: 38 1 2 4
<Type return to continue>
[7] Current Configuration: 37 1 3 4
<Type return to continue>
[8] Current Configuration: 36 2 3 4
<Type return to continue>
[9] Current Configuration: 35 1 2 3 4
<Type return to continue>
[10] Current Configuration: 34 1 2 3 5
<Type return to continue>
[11] Current Configuration: 33 1 2 4 5
<Type return to continue>
[12] Current Configuration: 32 1 3 4 5
<Type return to continue>
[13] Current Configuration: 31 2 3 4 5
<Type return to continue>
[14] Current Configuration: 30 1 2 3 4 5
<Type return to continue>
[15] Current Configuration: 29 1 2 3 4 6
<Type return to continue>
[16] Current Configuration: 28 1 2 3 5 6
<Type return to continue>
```

Two classes were created to realize this function.