Sukhvinder Singh
CS-155
Project 5
4/8/2021

Project 5 Design Document

Project Requirements:

In this project, we've to make a memory game in which we are randomly inserting number in the array from 1-10 & there are 2 arrays. The user has to guess the index which would contain the same number in both arrays. So, if they would match that number should be marked as 'X' & this would be continue till user would get all matches done.

Program Inputs:

- **Number** in array1 & array2 for guessing.

Program Output:

- The given number index contains the same number for the second array. If yes then marked as X.

Test Plan:

Program inputs

Number input from the user for array1 & array2

num is Integer

Integer limit (10 > num > 0)

Test Output:

1) **Test 1**

   1 2 3 4 5 6 7 8 9 10

   11 12 13 14 15 16 17 18 19 20

   What number card would you like to check from the first row?

   11 is a(n) 4

   What number card would you like to check from the second row?

   11

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11 is a(n) 8

No match!

1 2 3 4 5 6 7 8 9 10
11 12 13 14 15 16 17 18 19 20
What number card would you like to check from the first row?
11 is a(n) 4
What number card would you like to check from the second row?
12
12 is a(n) 3
No match!
1 2 3 4 5 6 7 8 9 10
11 12 13 14 15 16 17 18 19 20

What number card would you like to check from the first row?

11 is a(n) 4

What number card would you like to check from the second row?

13

13 is a(n) 5

No match!

1 2 3 4 5 6 7 8 9 10

11 12 13 14 15 16 17 18 19 20

What number card would you like to check from the first row?

11 is a(n) 4

What number card would you like to check from the second row?

14

14 is a(n) 10

No match!

1 2 3 4 5 6 7 8 9 10

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11 12 13 14 15 16 17 18 19 20

What number card would you like to check from the first row?

11 is a 4

What number card would you like to check from the second row?

15

15 is a 6

No match!

1 2 3 4 5 6 7 8 9 10

11 12 13 14 15 16 17 18 19 20

What number card would you like to check from the first row?

11 is a(n) 4

What number card would you like to check from the second row?

16

16 is a(n) 1

No match!

1 2 3 4 5 6 7 8 9 10

11 12 13 14 15 16 17 18 19 20

What number card would you like to check from the first row?

11 is a(n) 4

What number card would you like to check from the second row?

17

17 is a(n) 7

No match!

1 2 3 4 5 6 7 8 9 10

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11 12 13 14 15 16 17 18 19 20

What number card would you like to check from the first row?

11 is a(n) 4

What number card would you like to check from the second row?

18

18 is a(n) 2

No match!

1 2 3 4 5 6 7 8 9 10

11 12 13 14 15 16 17 18 19 20

What number card would you like to check from the first row?

11 is a(n) 4

What number card would you like to check from the second row?

19

19 is a(n) 9

No match!

1 2 3 4 5 6 7 8 9 10

11 12 13 14 15 16 17 18 19 20

What number card would you like to check from the first row?

11 is a(n) 4

What number card would you like to check from the second row?

20

20 is a(n) 4

Match!

X 2 3 4 5 6 7 8 9 10

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11 12 13 14 15 16 17 18 19 X

What number card would you like to check from the first row?

22 is a(n) 3

What number card would you like to check from the second row?

12

12 is a(n) 3

Match!

X X 3 4 5 6 7 8 9 10

11 X 13 14 15 16 17 18 19 X

What number card would you like to check from the first row?

33 is a(n) 9

What number card would you like to check from the second row?

19

19 is a(n) 9

Match!

X X X 4 5 6 7 8 9 10

11 X 13 14 15 16 17 18 X X

What number card would you like to check from the first row?

44 is a(n) 10

What number card would you like to check from the second row?

14

14 is a(n) 10

Match!

X X X X 5 6 7 8 9 10

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11 X 13 X 15 16 17 18 X X

What number card would you like to check from the first row?

55 is a(n)1

What number card would you like to check from the second row?

16

16 is a(n) 1

Match!

X X X X 6 7 8 9 10

11 X 13 X 15 X 17 18 X X

What number card would you like to check from the first row?

66 is a(n)8

What number card would you like to check from the second row?

11

11 is a(n)8

Match!

X X X X X 7 8 9 10

X X 13 X 15 X 17 18 X X

What number card would you like to check from the first row?

77 is a(n) 2

What number card would you like to check from the second row?

13

13 is a(n) 5

No match!

X X X X X 7 8 9 10

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X X 13 X 15 X 17 18 X X

What number card would you like to check from the first row?

77 is a(n) 2

What number card would you like to check from the second row?

1515 is a(n) 6

No match!

X X X X X X 7 8 9 10

X X 13 X 15 X 17 18 X X

What number card would you like to check from the first row?

77 is a(n) 2

What number card would you like to check from the second row?

17

17 is a(n) 7

No match!

X X X X X X 7 8 9 10

X X 13 X 15 X 17 18 X X

What number card would you like to check from the first row?

77 is a(n)2

What number card would you like to check from the second row?

18

18 is a(n) 2

Match!

X X X X X X X 8 9 10

X X 13 X 15 X 17 X X X

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What number card would you like to check from the first row?

88 is a(n) 7

What number card would you like to check from the second row?

17

17 is a(n) 7

Match!

X X X X X X X X 9 10

X X 13 X 15 X X X X X

What number card would you like to check from the first row?

99 is a(n) 5

What number card would you like to check from the second row?

13

13 is a(n) 5

Match!

X X X X X X X X X 10

X X X X 15 X X X X X

What number card would you like to check from the first row?

10

10 is a(n) 6

What number card would you like to check from the second row?

15

15 is a(n) 6

Match!

X X X X X X X X X X

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X X X X X X X X X X

Game Over!

Solution Overview:

Algorithm steps for the Program.

1) Set the seed for the random numbering in the system by providing the Linux based time.
2) Initialize the both arrays with -1.
3) Insert the Random numbers at random indexes by providing the arrays & the size of arrays.
4) Print the both board/arrays by their indexes add 1 for 1-10 & 11-20, for array1 we would add 1 while printing the index & for array2 we would add 11 while printing index of it.
5) Looping till the total found value reaches the 10 which means all cards are matched now.
6) Start calling Guess function inside the loop which would control the total found variable & change the state of array if it's matched.
7) End of Program

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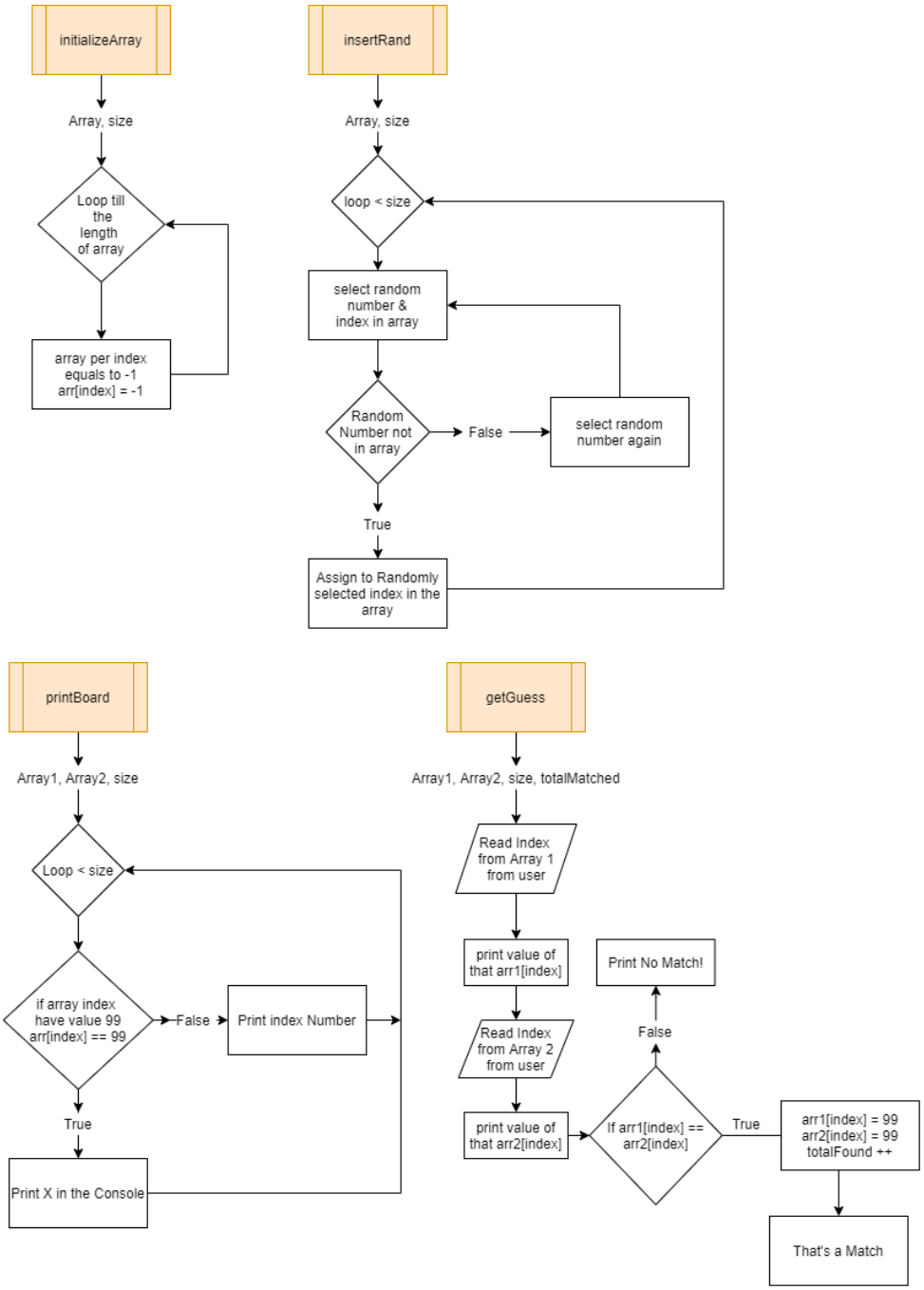
Algorithm Flowchart:



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