Rough Notes

* Create a 2 dimensional array
* Add up the values of each side and diagonal to check if they are equal
* Use if statements to check if each section adds up to the same value

|  |  |  |
| --- | --- | --- |
| Input | Processing | Output |
| * Prompt user to input a number for the size of the square | - create an array with side lengths of the inputted number  - fill each element of the array with numbers 1 – n^2 by using a for loop to generate each number and use random number statements to input each number in a different location  - make sure the program inputs each number once and does not override a previously used location  - check to see if a magic square exists by (in another method) using 3 different for loops to check each row, column, diagonal and using if statements with a Boolean charchter | - display the magic square created  - tell the user if it is a magic square |

|  |  |
| --- | --- |
| Variable | Type |
| - x  - n  - y  - z  - magic  - temporary  - reference  - square  - test | - int  - int  - int  - int  - method  - int  - int  - array  - boolean |

Algorithm

for (z = 1 ; z < n^2 ; z = z + 1 )

{

random [x]

random [y]

z = square [x][y]

}

Magic ()

{

for (x=0;x < square.length; x = x + 1)

{

referance = referance + square [x][0]

}

for (x=1;x < square.length; x = x + 1)

{

for (y=0;y < square.length; y = y + 1)

{

temporary = temporary + square [x][y]

}

if (temporary == referance)

{

test = true

}

}

.

.

.

do the following two more times

return test

}

Test Cases

1.

5

8 11 18 5 13

14 1 22 3 7

21 16 4 9 17

23 19 15 2 12

24 25 10 20 6

This is not a magic square

2.

3

8 1 6

3 5 7

4 9 2

This is a magic square

3.

10

39 33 21 53 62 37 64 43 77 51

87 11 52 16 93 100 89 73 20 10

36 99 18 90 42 54 12 67 97 28

75 48 30 17 6 96 35 13 50 15

24 1 92 32 59 58 69 40 60 46

23 25 7 19 34 68 82 72 83 94

78 85 41 31 76 91 47 57 45 3

4 79 55 81 66 8 74 14 84 5

98 27 61 22 86 44 71 56 65 70

26 80 49 9 95 63 2 29 88 38

This is not a magic square