AHMET EMIN SAGLIK

Solution Algorithm Report

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GAME RULES

Game can be played with 10-10 squares which makes totally 100 squares. There are some rules :

* Player can start from anywhere.
* After started :  
  player can move 2 square away in straight directions.  
  player can move 1 square away in cross directions.
* Player can not move on visited squares. Player can move over visited squares.

A picture containing background pattern

Description automatically generated

Game can played minimum 5-5 squares which makes totally 25 squares.  
Text

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Found a solution with 100 squares.

A picture containing keyboard, electronics

Description automatically generated

First algorithm:

This algorithm tries whole combination in game. Go every step in every direction. It is not import will it be reach the max score or not. And I run this algorithm about 2 years ago for 10-10 squares. After 24 hours , changed minimum step was 50. Step. (Actually it may take more time too. But I keep this value as a average value). This means that every 24 hour just 50. Step will change. There are 8 directions. But when we move somewhere maximum direction will be 7 and minimum direction will be 1. So let’s say there are 4 (average) direction. 49. Step has 4 times 50. Step… Let me tell you in Mathematical way instead of writing way.

(4^0) 50. step 🡪 (4^0) = 1 (day) > 50. Step 🡪 1 day

(4^1) 49.step 🡪 (4^1) = 4 (days) > 4\* 50. Step 🡪 4 days

(4^2) 48. step 🡪 (4^2) = 16 (days) > 4\* 49. Step 🡪 16 days.

…

(4^50) 1. Step 🡪 (4^50) = ?

4^15 days equals 3 millions years.

So it is exactly impossible to see all solutions in this world with using this algorithm.

Lets have a look to Solution result for First Solution :

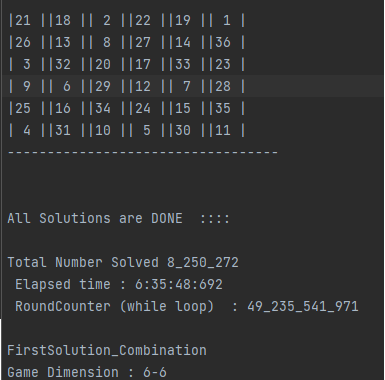
5-5 :

12\_400 solution was found by running 4\_809\_736 times in while loop in 2.7 seconds.

6-6 :

8\_250\_272 solution was found by running 49\_235\_541\_971 times in while loop about 6 hours 35 mins seconds.

Text

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Second algorithm:

A basic math function is created for this algorithm to predict next step. So algorithm run much faster than first solution. The least this one finds a lot of solution in 10-10.

Lets have a look to Solution result for First Solution :

5-5 :

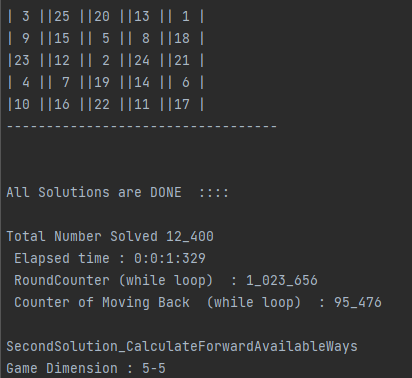
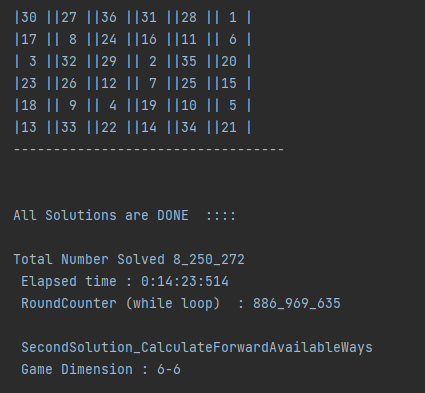
12\_400 solution was found by running 1\_023\_656 times in while loop in 1.3 seconds.

6-6 :

8\_250\_272 solution was found by running 886\_969\_635\_ times in while loop about 14 mins seconds.

7-7 :

Actually this is not wholly completed. Just first square is calculated. And results :

468\_698\_008 solution was found by running 72\_254\_456\_447 times in while loop about 21 hours 19 mins seconds.  
 A picture containing calendar

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Comparing these algorithm

Table

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