Report

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1. Testing

(1) Test cases

- Can avoid blindly testing.
- Leading programmer to write code according to test cases.
- make the function of this program project clearer

(2) Mocks

- Mocking is to create some virtual object that can simulate the behavior of the real ones to replace dependencies.
- Advantage1: Mocking let the external dependencies no more be a constraint to unit tests.
- Advantage2: "All units of a project can progress in parallel. Thus, testing can start early."
- Disadvantag1: Programmers need to understand dependencies well.
- Disadvantage2: Programmers can't mock everything.
- Mocks generally are used in unit tests.

(3) Example

- "An official of Airbus Group has affirmed that the crash of an Airbus A400M. Military transport was brought about by a flawed programming design which is lack of testing".

2. Solver

(1) BFS

- Strengths: It can find the shortest accurate solution path of the maze and seems spend less time when searching through a complex maze with many forks.
- Weaknesses: It needs much larger memory space.
- When player/client need the shortest path to win the game, I would like to use BFS.

(2) DFS

- Strengths: DFS algorithm can find all correct solution paths, and compared with BFS, it needs less memory space to run the program.
- Weakness: The efficiency of finding path will be lower when the maze is very complex with many forks.
- When player/client only needs a solution path for the game, I will use DFS algorithm.

(2) If the ending cell is very close to the starting cell

- Yes. In that situation the solution path will be very short, and DFS always go to the first node it next sees which makes it reach end point faster, but BFS need to visit all nodes in first layer it next sees.

(4) Visited list

- The feature changeable map of this game stops me from directly using normal visited list. This game has water and fire cells, so for example, when player step on water cell, the water cell will change to air cell, so the game map changes, also all the visited nodes are different from nodes in current new map.
- So, I save the game state in visited node, such as also taking current number of water buckets into consideration except recording coordinate of current node.

3. Reference

(1)

- Author: narendra, arvindpdmn
- Article title: Mock Testing
- Website title: Devopedia
- URL: https://devopedia.org/mock-testing
- Last updated by arvindpdmn on 21 Mar 2019
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(2)

- Author: ADMIN
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- Website title: Outfresh.com
- URL: https://outfresh.com/knowledge-base/6-famous-software-disasters-due-lack-testing/)
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