```
 1   /*
 2   -------------------------------------------------------------------------------
 3   Laboratory  : labo_11
 4   File        : treasure.h
 5   Author(s)   : Yannick Schaufelberger et David Gallay
 6   Date        : 18.01.2020
 7
 8   Goal        : Library containing the commands to run a simulation on a given map
 9    a
10   Remark(s)   :
11
12                    There is the github repository:
13                    https://github.com/dgheig/labo11
14
15   Compilator  : MinGW-g++ 6.3.0 and g++ 7.4.0
16   -------------------------------------------------------------------------------*/
17
18   #ifndef TREASURE_H
19   #define TREASURE_H
20
21   #include "map.h"
22   #include "searchers.h"
23
24   /**
25    * @brief Simulates nbSimulation searchers starting at the coordinates startX and startY
26    * on the map
27    * @param map
28    * @param startX
29    * @param startY
30    * @param nbSimulation
31    * @return a list containing the status and steps of every simulated searcher
32    */
33   SearcherList runSimulation(const Map& map, size_t startX, size_t startY, int nbSimulation);
34
35   /**
36    * @brief walks a searcher on the map, defines the status and steps taken at the end.
37    * @param map
38    * @param startX
39    * @param startY
40    * @param searcher
41    */
42   void runSearcher(const Map& map, size_t startX, size_t startY, Searcher& searcher);
43
44   /**
45    * @brief calculates the probability for a searcher to find the treasure, and the
46    * average steps taken to find it
47    * @param list
48    * @param probability
49    * @param avgSteps
50    * @return true if success, false if not
51    */
52   bool getStatistics(const SearcherList& list, double& probability, double& avgSteps);
53
54   #endif // TREASURE_H
```