CENG206 - Project-2, Due date: 28 May 2023

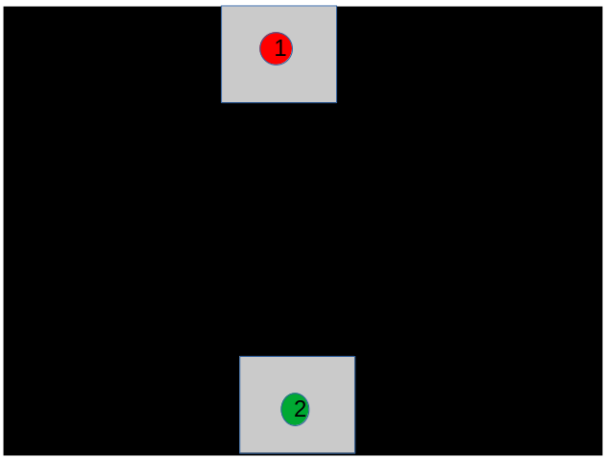
Hide-and-seek game

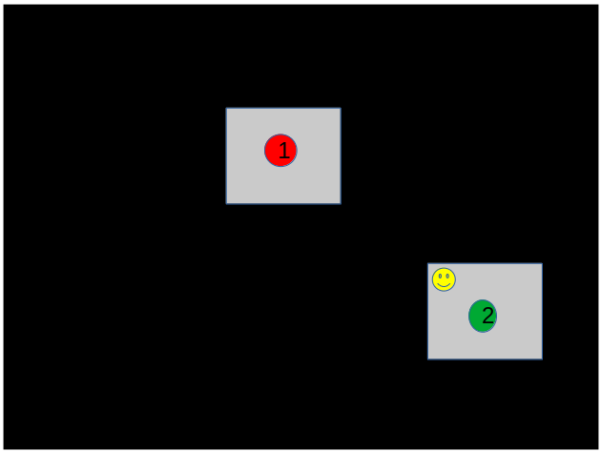
In this project, you are going to implement a hide-and-seek game by using C++ with GUI. This is an original and genuine game created by us and we are the copyright holder of it. Therefore you cannot share this assignment with others or upload it anywhere on the web.

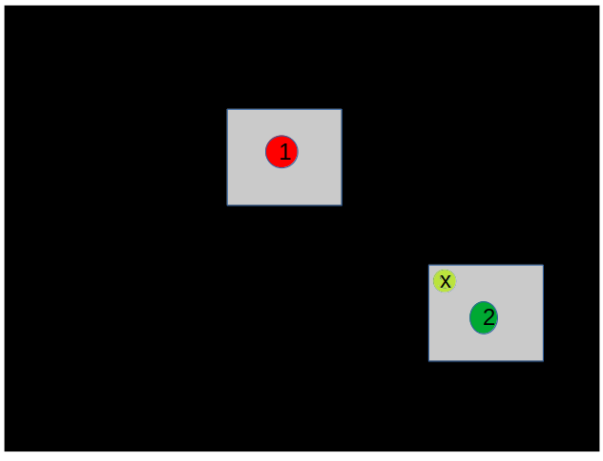
There will be 2 players that are located on opposite sides of the area. The vision of these players is limited so that they can see things near them.

In the area, there are a number of ghosts that are randomly walking around the area. If one of the players is close enough to them, the player gets a point and the ghost will disappear. The game continues until all ghosts are seen by the players and the player that has the highest score wins the game.

For a better understanding, you may look at the following figures. However, do not use this design, use your own imagination for your design in your game.







For GUI, you may use one of two popular libraries: Qt or wxWidgets. As far as I know, Qt is very popular in the sector and is used in many projects of Defense and Aviation companies such as Thales Avionics, and TUSAS. wxWidgets is another library that is used in many C++ projects. You are free to choose any GUI library in your project. The game is required to be implemented in 2D graphics, however, if you implement it with 3D graphics with OpenGL libraries it will also be welcomed.

Your C++ program must include the following programming features;

a. Inheritance

b. Exception handling; for file operations and any other necessary cases you should adopt the exception handling mechanism properly.

c. Default parameter; One of your functions in the program should support function with default arrangements.

d. Operator overloading; you should use at least one operator-overloaded function. For example, you can use it for checking some values of two objects of the same class by overloading == operator. However, you are free to implement which operator you want.

e. Inline function; Implement one of your functions by using the inline function.

f. Constructor/destructor; For each class you implemented should include a constructor and destructor.

g. Vectors; you are suggested to use “vector” data structure for array implementations in your code. Try to efficiently use vectors by using C++ functions, such as ‘sort’ if you need to sort the elements in the vector. You may look at C++ API for the methods: https://cplusplus.com/reference/vector/vector/

h. Explicit heap dynamic variable; Create at least one explicit heap dynamic variable with “new” command.

- In your report, you should show the usage of these features with small code segments or with a screenshot. For example, you can put some portion of code that depicts the usage of Exception Handling in your project.
- For each of the features, you must put the respective code segment or ss in your report.
- You must put at least 3 screenshots of your program after you start the game (do not put ss of the source codes!) in your report.

❖ You should implement your program with proper usage of headers (hpp) and source codes (cpp). Your project must contain at least 2 hpp and 2 cpp files.