Requirements

Make a computing model that implementats an automata system with a walking bomb and a walking robot:
1. Robot walks 2 step, Bomb will walk one.
2. Robot should avoid walking onto the bomb.
3. Robot should keep walking while any gold bar left uncollected. If there is no more gold bar left, the game ends.
4. If the bomb catches the robot, game end.
5. Otherwise they walk into random square around them.

Code Explain

The game is written in python with pygames. Four classes are defined that can create instances of the game, the bomb, the robot and the gold bars.
The Entity class creates a game. It initialize the game screen and generate a background depending on the setting. It also contains the conditions of the ending and process of the game according to the requirements. Sentence will be printed after the game reaches the end.
The Bomb class and Robot class creates bomb and robot that are initialized at random position and able to move while checking on the surroundings.
The Golds class creates golds that scatters on the grid and record the position of uncollected golds. Number of grids can be adjusted in the settings.

Result

Below are the sample runs:

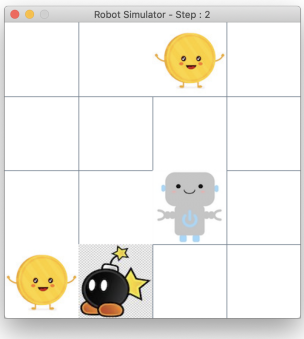

Figure 1: start of the game

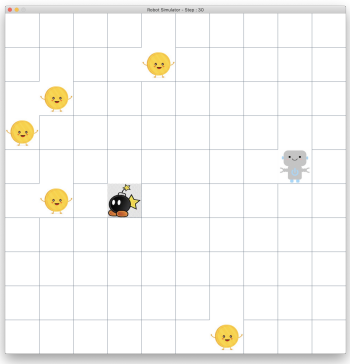

Figure 2: game is re-sizable

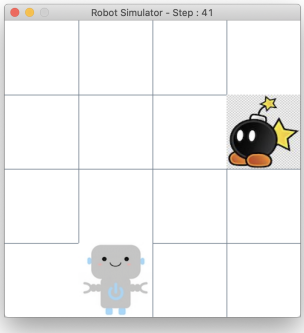

Figure 3: ending when the robot wins.

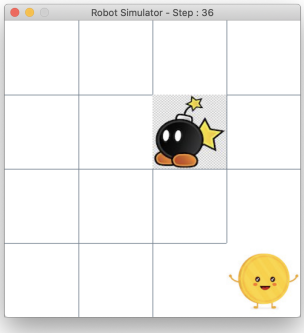

Figure 4: ending when the bomb wins