

# INFO8006: Project 1 - Report

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## 1 Problem statement

- a.
  - The set of possible states is defined by a matrix representing the map in which for each element there is a boolean value indicating the presence of a food dot and another indicating the presence of Pac-Man in this cell of the map.  
The initial state is set by the layout.
  - At any moment, Pac-Man can move up, down, right or left as long as he does not go through a wall (illegal action).
  - When Pac-Man performs one of the previous legal actions, some elements of the previously defined matrix are then updated according to the current state of the game.
  - The goal is reached when the elements of the matrix indicating the presence of a food dots are all at the 'False' value : there are no food dots on the map.
  - The step cost can be defined as follows : each move of Pac-Man to a cell without a food dot costs 10 and each move to a cell with a food dot costs 1.

## 2 Implementation

- a.
- b. **LEAVE EMPTY**
- c.
- d.
- e. **LEAVE EMPTY**
- f.

### **3 Experiment 1**

- a.
- b.
- c.
- d.

### **4 Experiment 2**

- a.
- b.
- c.