

## Class Attendance

16h10

submission of work done at the end of class

### IMPORTANT

#### 1<sup>st</sup> project delivery

9<sup>th</sup> April

- mathematical formulation
- pseudocode

### IMPORTANT

#### 2<sup>nd</sup> project delivery

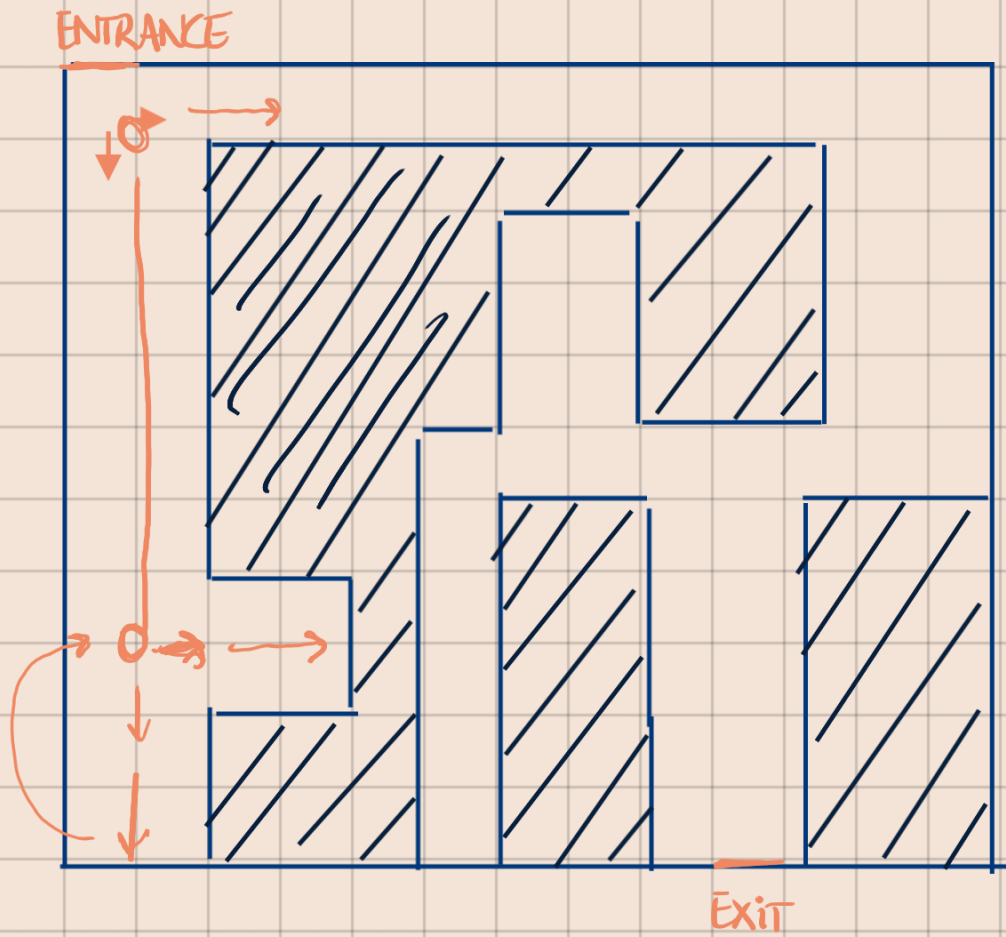
21<sup>st</sup> May

- implementation
- analysis

### Other evaluation points:

- Exam (Theoretical + Practical components)
- Kahoot! (Theoretical Questions)
- HackerRank (Programming Exercises/competition)

# Backtracking



MAZE\_WALL  $\leftarrow$  0

MAZE\_PATH  $\leftarrow$  1

MAZE\_EXIT  $\leftarrow$  2

findGoal

Input:  $x, y$  // cell

initialize visited()

return findGoalRec( $x, y$ )

Worst-case  
 $O(n^2)$

findGoalRec

Input:  $x, y$  // cell

if labyrinth [ $y$ ][ $x$ ] == MAZE\_WALL OR visited [ $y$ ][ $x$ ] then  
return false

visited [ $y$ ][ $x$ ]  $\leftarrow$  true

if labyrinth [ $y$ ][ $x$ ] == MAZE\_EXIT then  
return true

return findGoalRec ( $x-1, y$ ) OR  
findGoalRec ( $x+1, y$ ) OR  
findGoalRec ( $x, y-1$ ) OR  
findGoalRec ( $x, y+1$ )