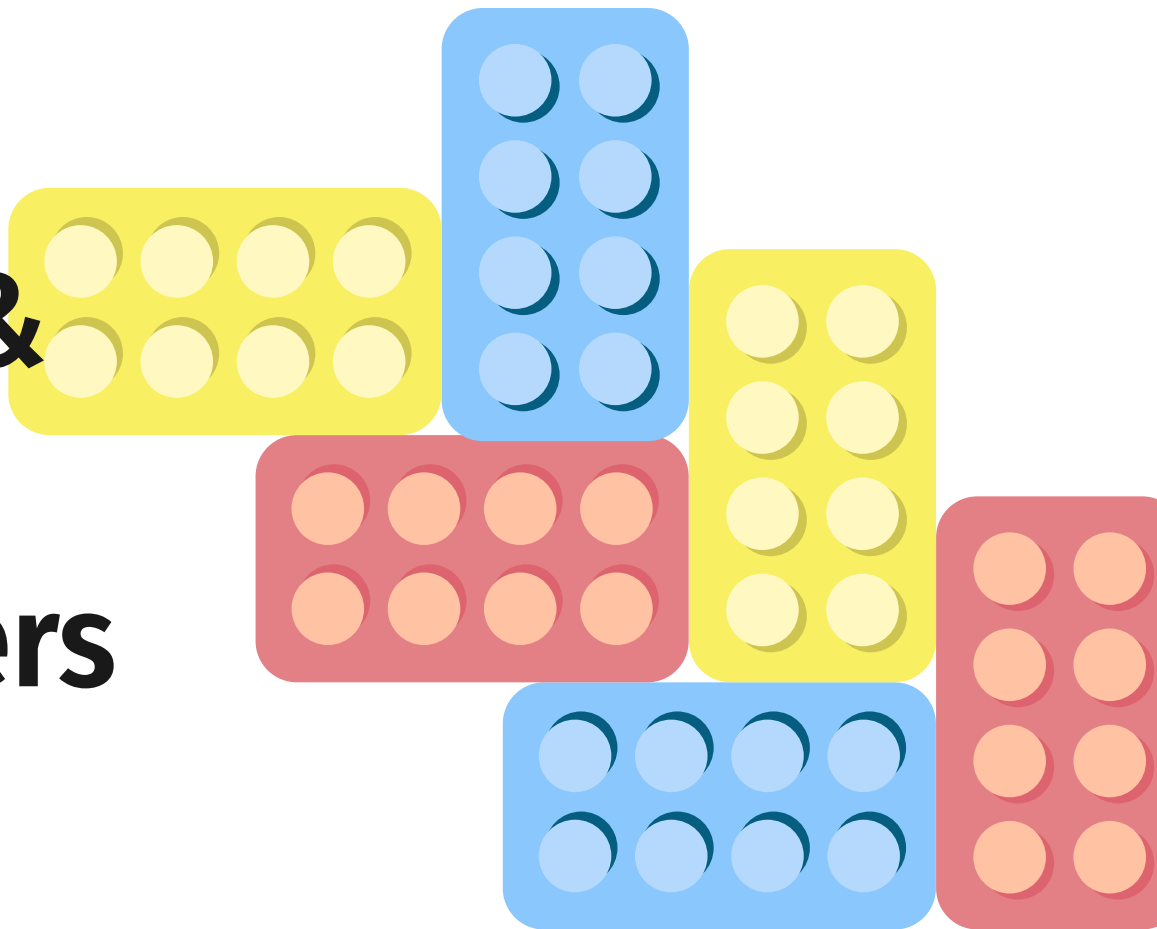


# Data Structures & Algorithms Pizza Runners

Soh Hong Yu  
P2100775  
DAAA/FT/2B/01



# Additional Features

## Additional Features



### Custom Maze

Users can make custom  
maze



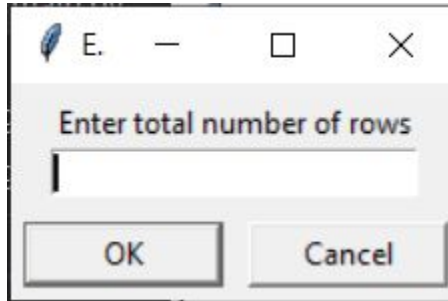
### Random Maze

Users can randomly  
generate maze

# Random Maze Generator

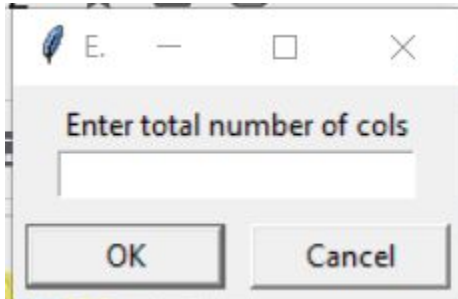
By clicking R or the Generate Random Map button, users will be prompted the following questions.

E.g. rows = 7 cols = 15



Enter total number of rows

OK Cancel



Enter total number of cols

OK Cancel

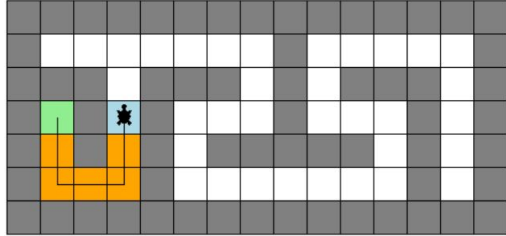
PIZZA RUNNER: Left Hand Rule | Number of steps: 6 | Timer: 00:01

## PIZZA RUNNERS:

Done by Soh Hong Yu and Samuel Tay Tze Ming from DAAA/FT/2B/01

**Controls**

1. Press Tab to switch algorithms
2. Press Space Key to start algorithm
3. Press P Key to pause to switch algorithm
4. Press R Key to generate random maze
5. Press C Key to create custom maze
6. Use the different toggle buttons to access different options

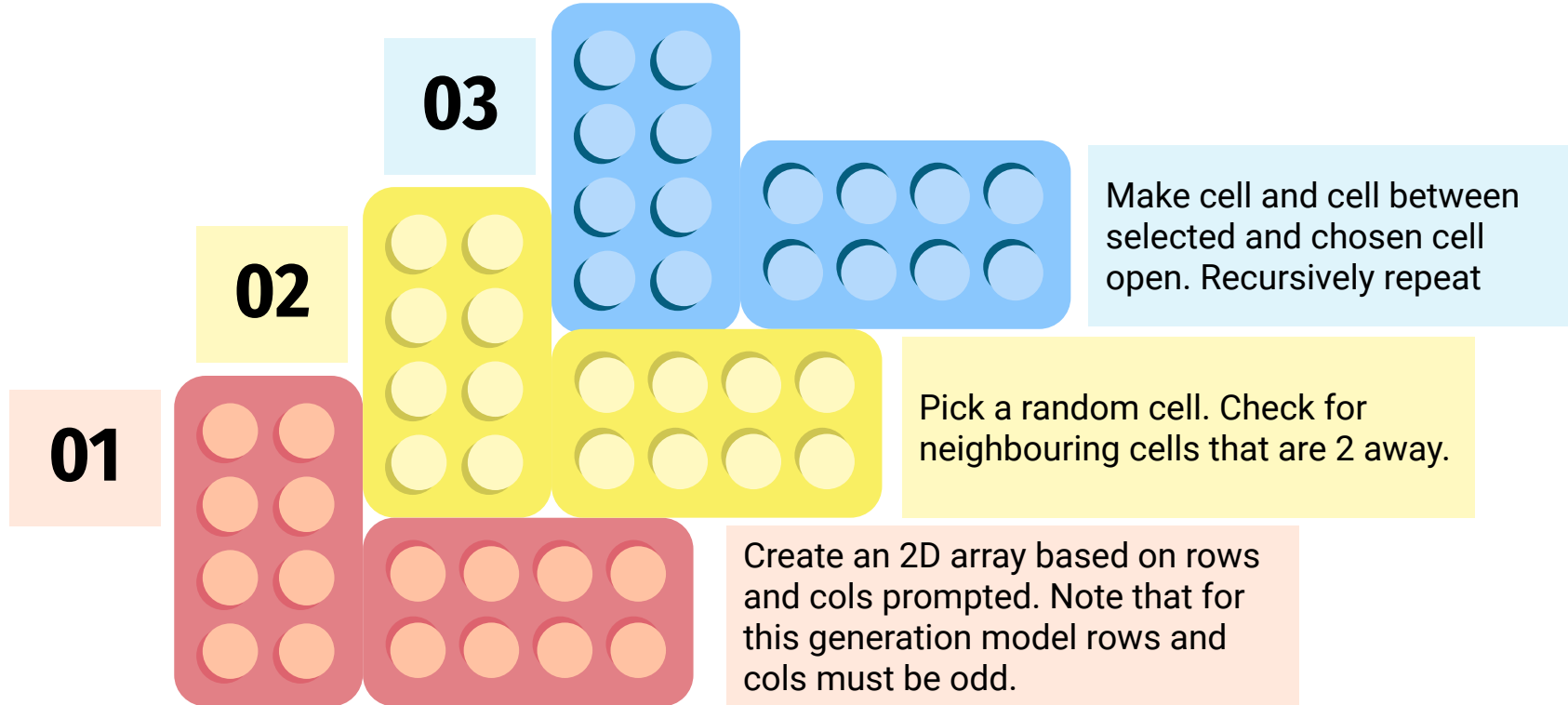


**Algorithm Information:**  
Left Hand Rule

The 'Left Hand Rule' approach is to make your way through the maze, while choosing how to turn at intersections as follows: Always turn left if you can. If you cannot turn left, go straight. If you cannot turn left, or go straight, turn right.

Click to add Start Click to add End Add Wall START Custom Map Generate Random Map Save Map

# Random Maze Generator - Backtracking



# Reasons why Random Maze Generator



## Robustness

This allows the company to do a wider range of comparison and test the robustness of the algorithms

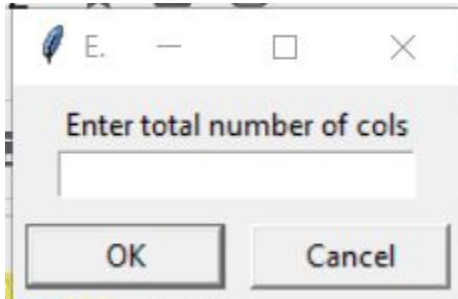
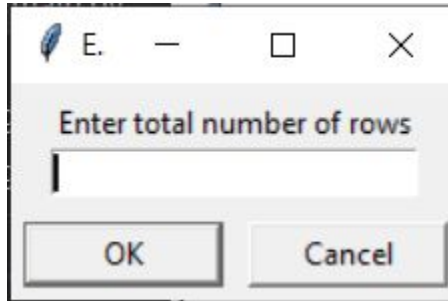
## Experiments

Before sending drones out, internal testing are required to ensure drone's efficiency

# Custom Maze Maker

By clicking C or the Custom Map button, users will be prompted the following questions.

An empty map will be generated, click on cells to add walls. To stop, click on the Custom Map button



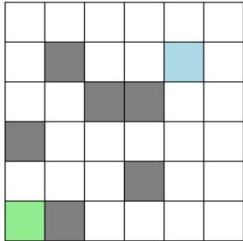
PIZZA RUNNER: Greedy Best First Search | Number of steps: 0 | Timer: 00:00

## PIZZA RUNNERS:

Done by Soh Hong Yu and Samuel Tay Tze Ming from DAAA/FT/2B/01

**Controls**

1. Press Tab to switch algorithms
2. Press Space Key to start algorithm
3. Press P Key to pause to switch algorithm
4. Press R Key to generate random maze
5. Press C Key to create custom maze
6. Use the different toggle buttons to access different options




**Algorithm Information:**  
Greedy Best First Search

This algorithm is an informed search algorithm that only utilises one heuristic function that always chooses the path which appear best at the moment. Does not guarantee shortest path.

Click to add Start

Click to add End

Add Wall

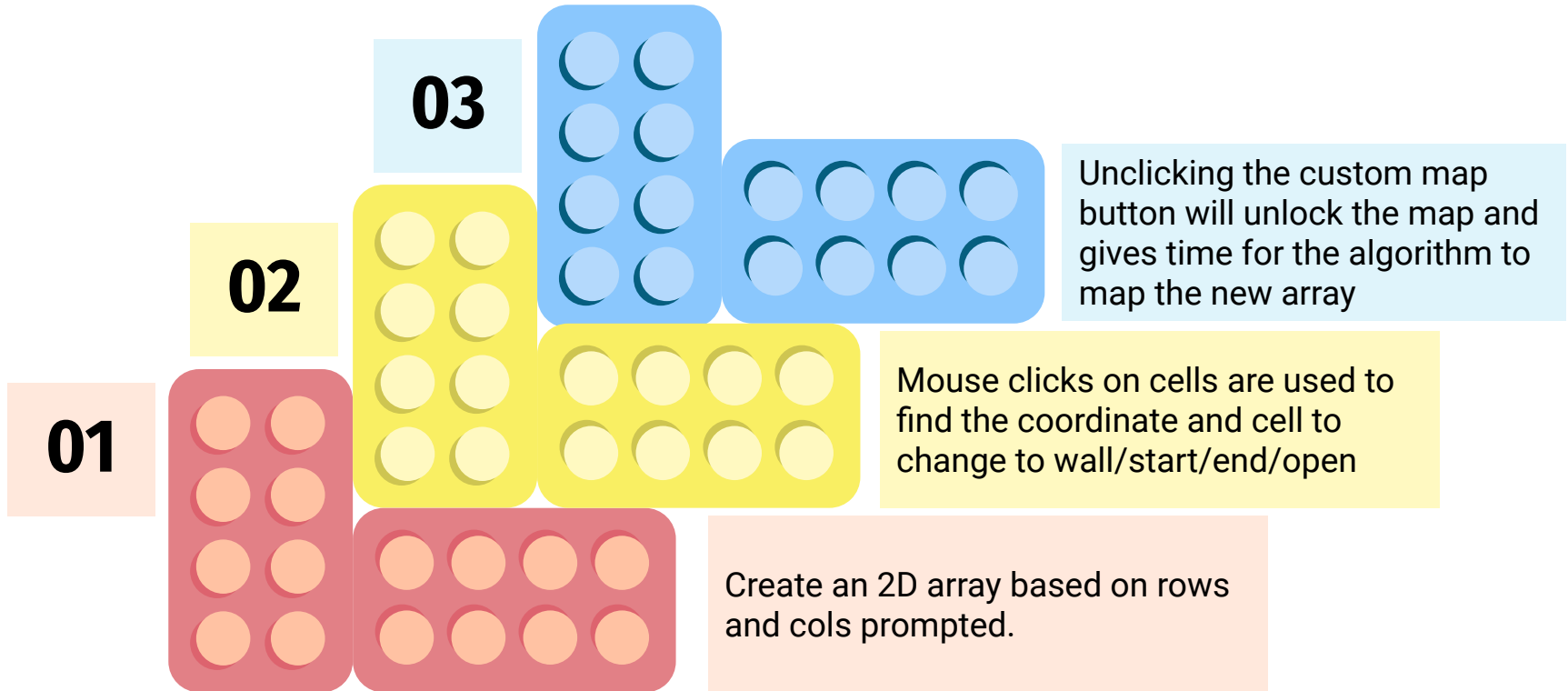
START

Running Custom Map

Generate Random Map

Save Map

# Custom Maze Maker



# Reasons why Custom Map Maker



## Future expansions

As business grow, more stores will be open. Using custom map to make the new city map for the stores

## Experiments

Before sending drones out, internal testing are required to ensure drone's efficiency