COMP 521 Assignment 4
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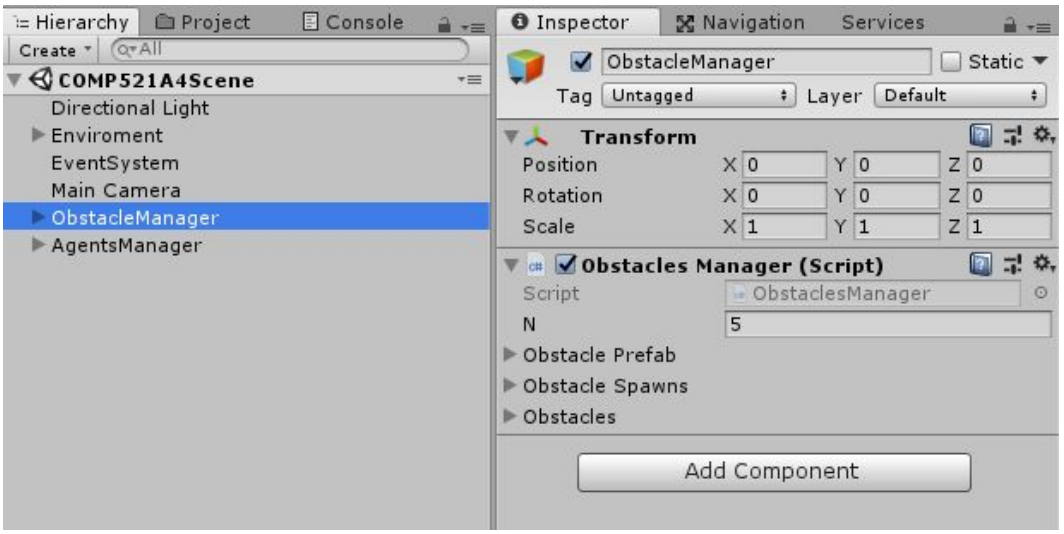
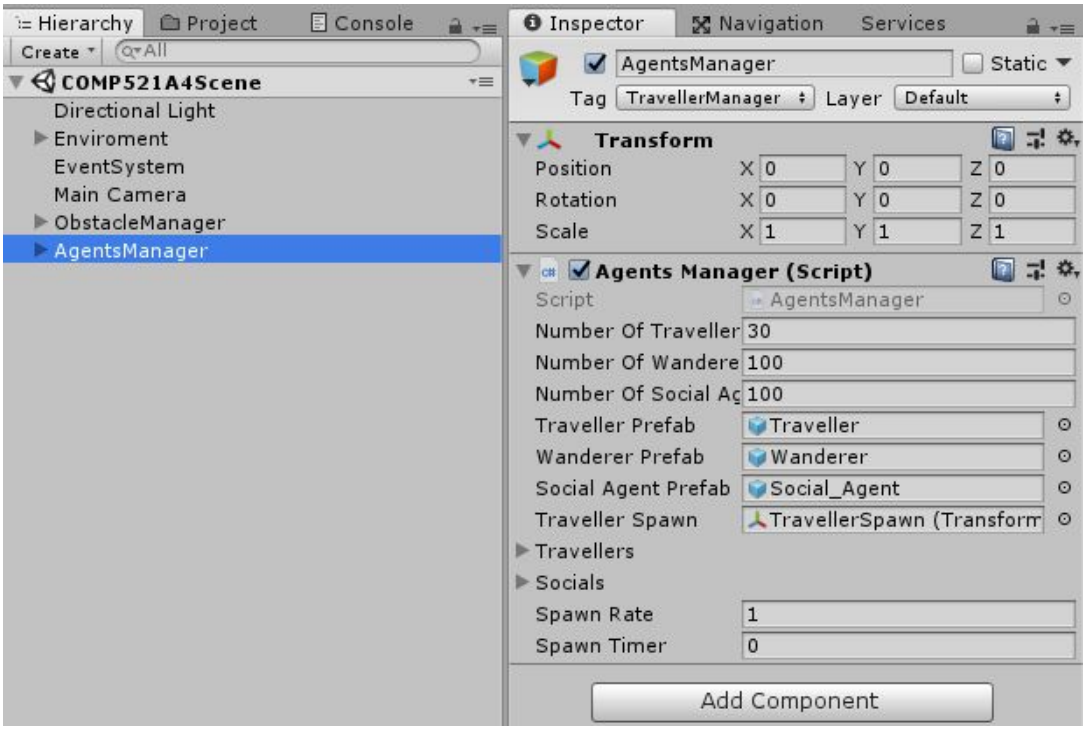
Instruction for setting parameters:

(1) To set the number of obstacle, go to the “ObstacleManager” in Hierarchy tab. Then, in the inspector window, you can set “N” to be the number of obstacles in the scene. N should be a number between 2 to 5. Any invalid number will truncated to [2,5]

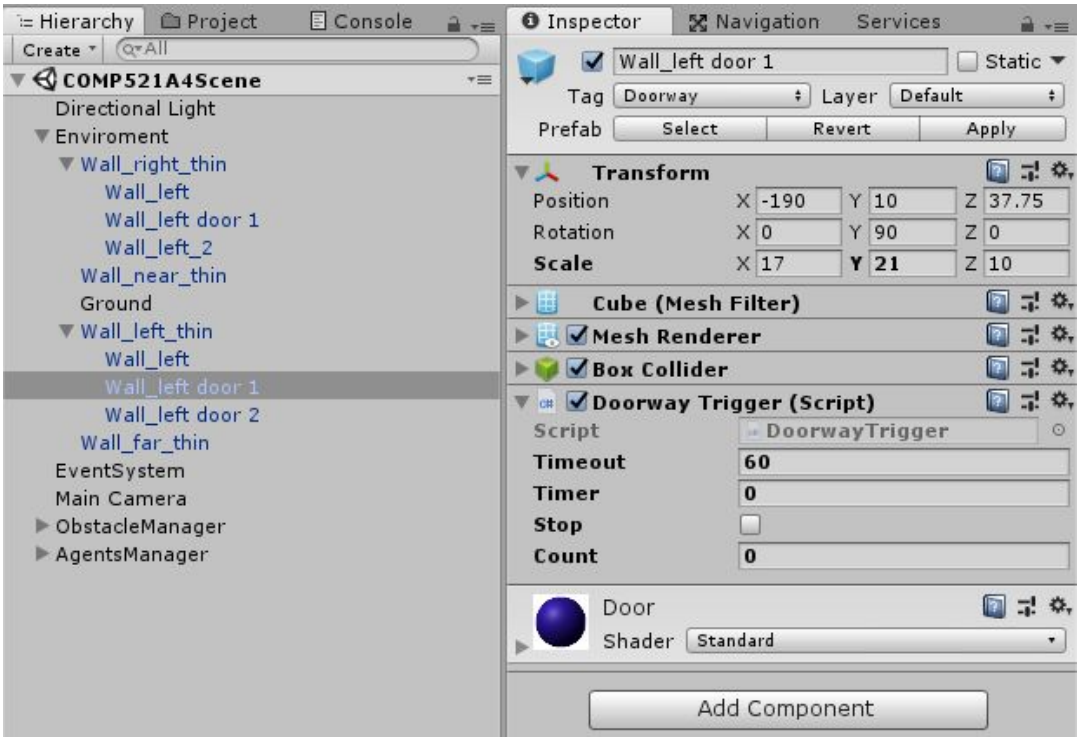


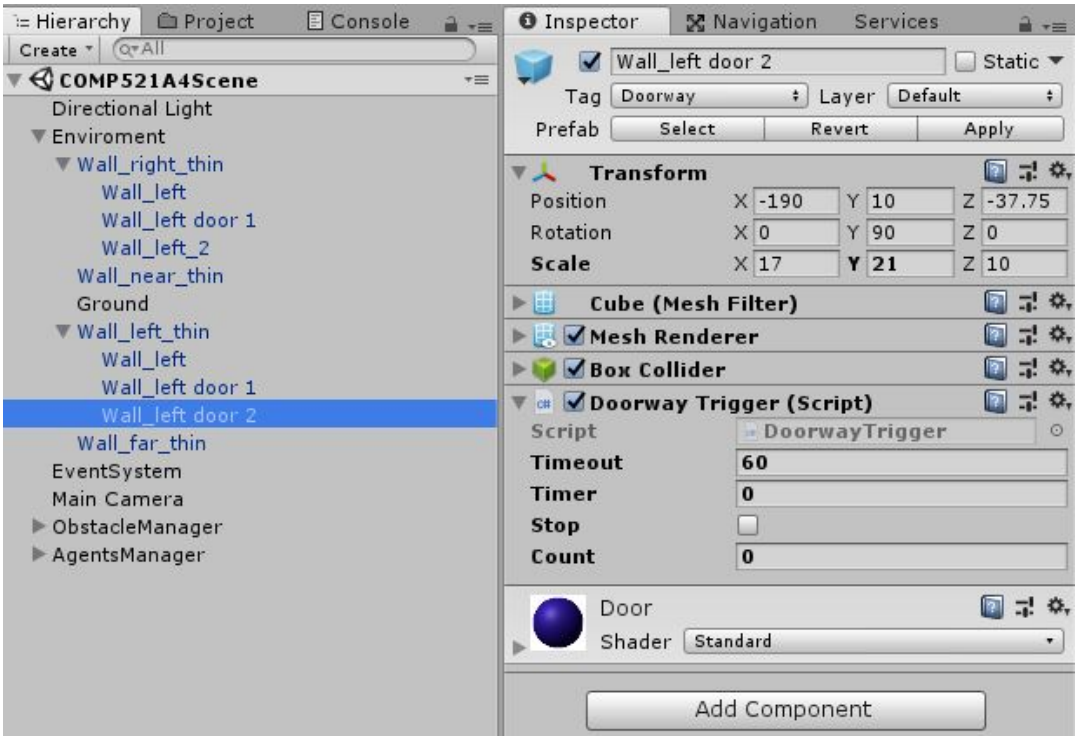
(2) To set the number of travellers, wanderers and social agents, go to the “AgentsManager” in Hierarchy tab. Then, in the inspector window, you can set those 3 numbers accordingly.



(3) To find out the throughput, go to the “Environment” -> “Wall_left_thin” ->” Wall_left door 1”. In the inspector, you can set up the timeout for time span. You can also manually stop by checking “Stop”. The count is the number of travellers reached to

door 1. You can do the same in “Wall_left door 2” to find out number of travellers reached to door 2. The total throughput is the sum of these 2 numbers.





Some design choice:

(1) The social agents become green once they enter the cooling off time. However, they do not intercept travellers.

(2) The probably that social agents decides to chat or communicate is set to 0.5.

Question 5

(1) Obstacles. The obstacles make travellers to avoid them on their ways to the doors. This will make the path longer or even get travellers stuck in the corner(rarely in presence of wanderer interceptions). With an increase in the number of obstacles, travellers take more time to reach the door and hence reduce the throughput for a given short time span.

(2) Wanderers. The wanderers are the main cause of traveller's failure to reach the doors. They actively block the way between the traveller and the door. Therefore, with an increase in the number of wanderers, travellers take more time to reach the door (or even get caught in the corner and hence never reach the doors) and hence reduce the throughput for a given short time span.

(3) Social Agents. They are less influential than wanderers. They may block the way between the travellers and the doors for a very short period of time. However, if large social groups is formed, they can be very influential on the throughput. So, overall, the more social agents in the scene, the less throughput we can get. The main difference between social agents and obstacles is that, travellers can plan to avoid the obstacles ahead of time, while travellers have to avoid social agents dynamically.

Results: with a population of 30 travellers and time span is 60 seconds

Test #	Obstacles #	Wanderer #	Social Agents #	Throughput
1	2	10	10	28
2	2	100	100	17
3	3	10	10	21
4	3	50	50	18
5	3	100	100	15
6	5	10	10	22
7	5	100	100	13

Test number 3 is roughly 3/4 travellers reaching the doors, while test number 5 is roughly 1/2 travellers reaching the doors. The results show the relative importance of 3 numbers.