



Multi-agent Systems Project

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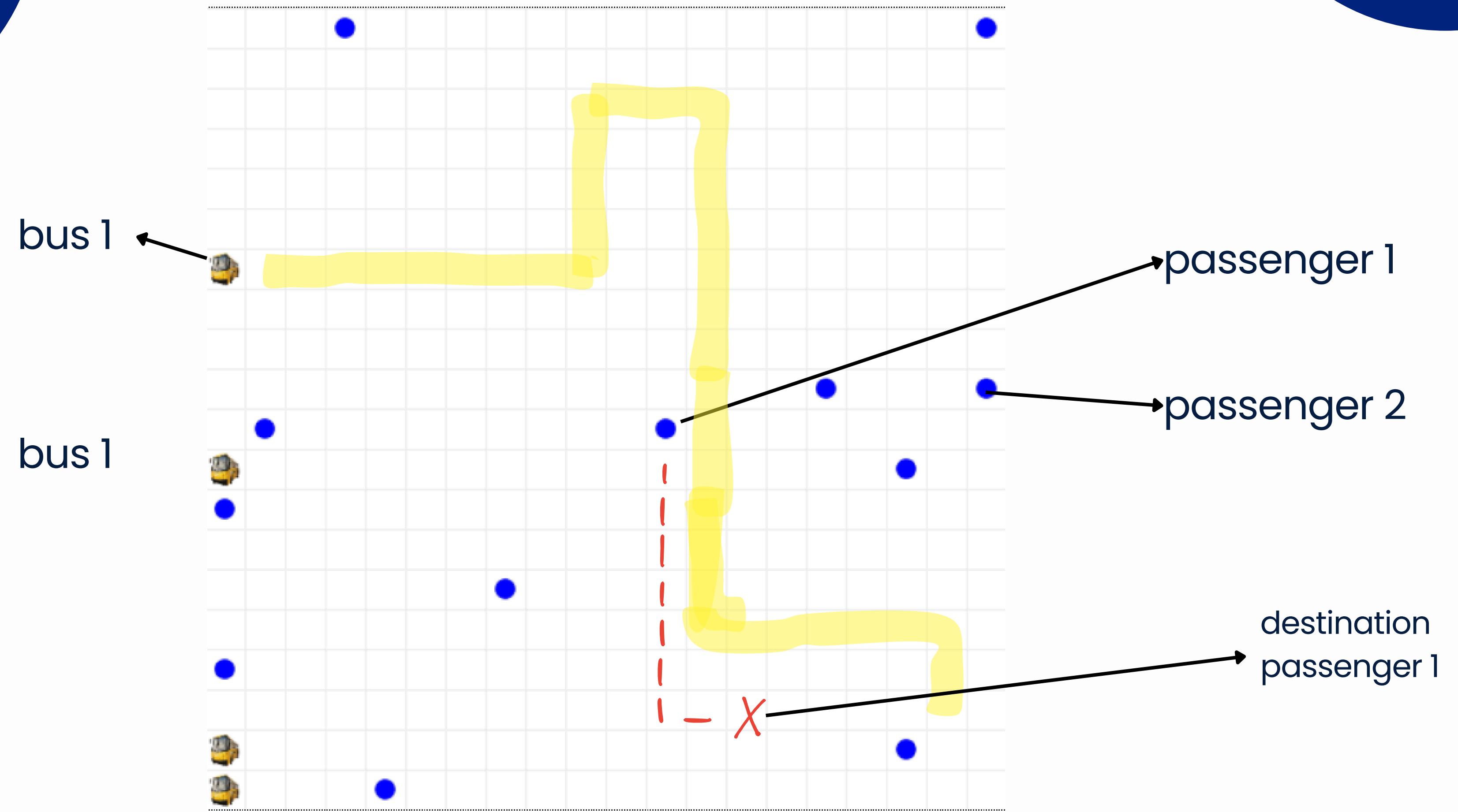
2024-2025

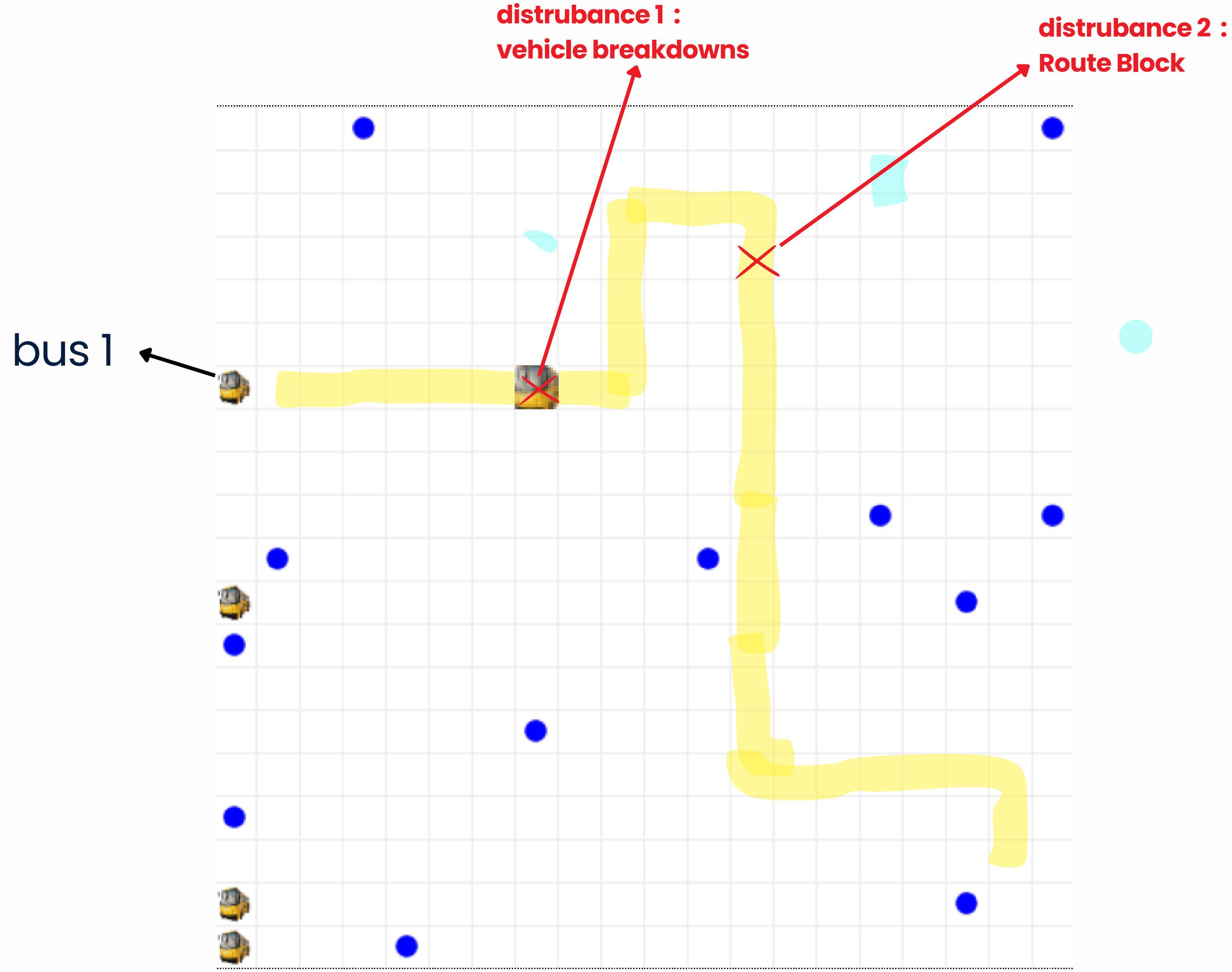
Overview

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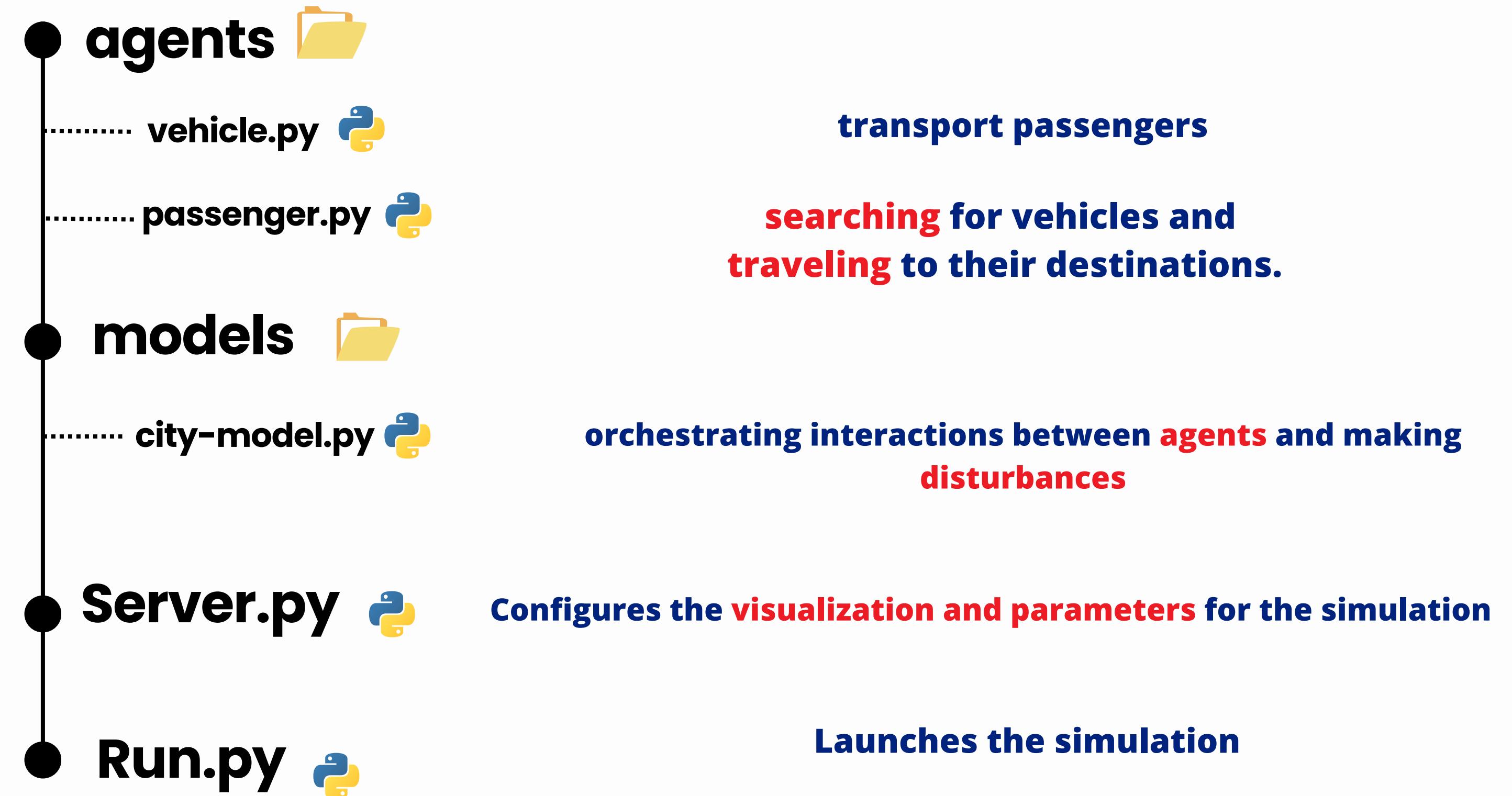


INTRODUCTION

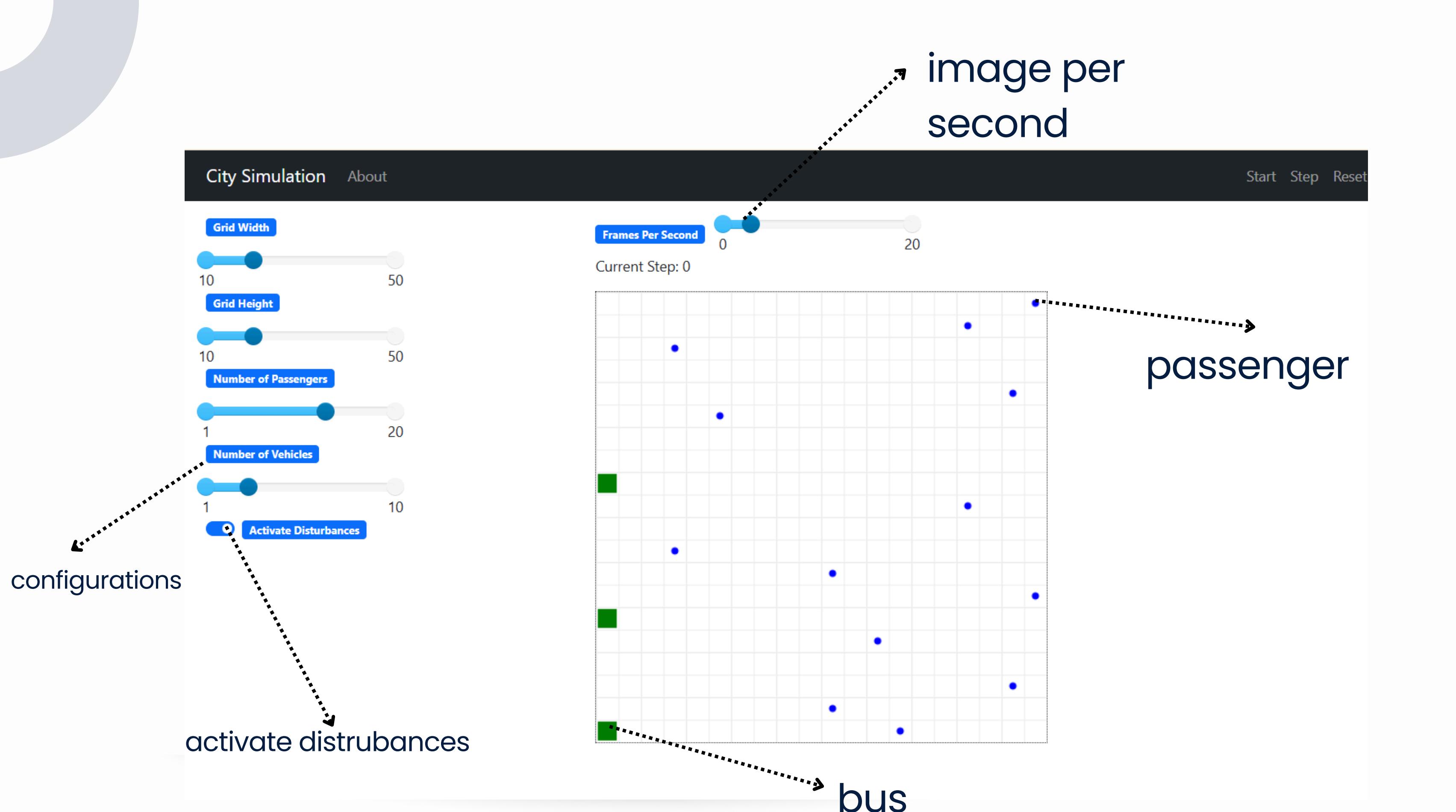




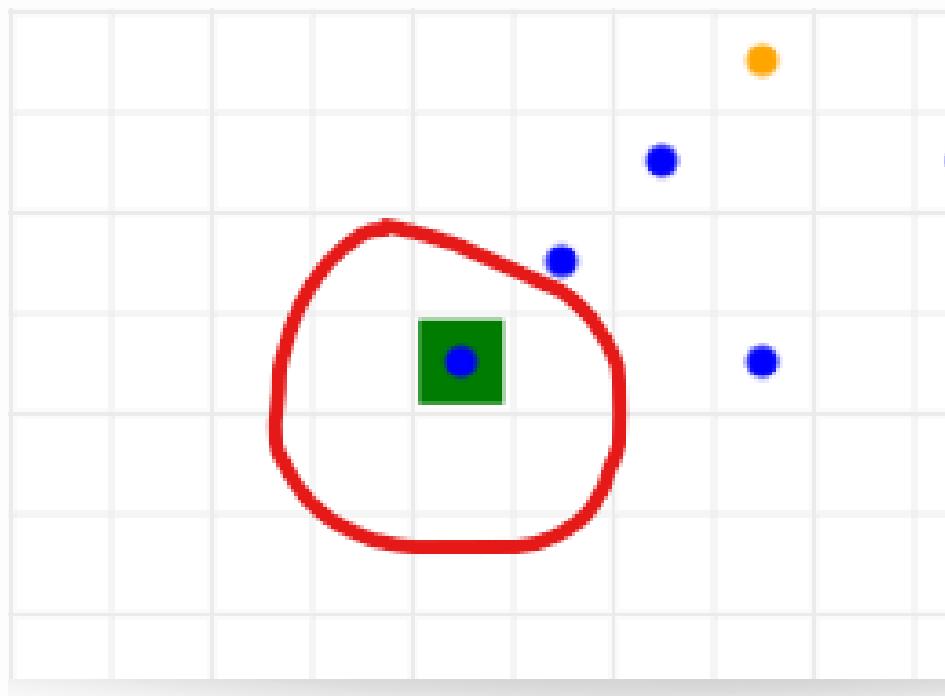
SYSTEM ARCHITECTURE



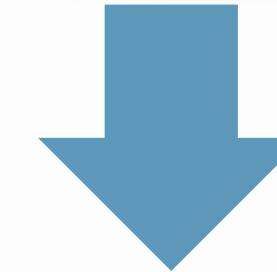
RESULTS AND OBSERVATIONS



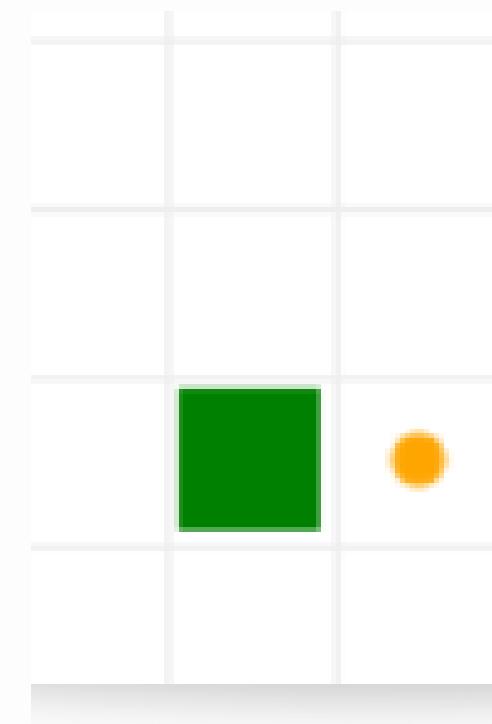
Pick up Passenger



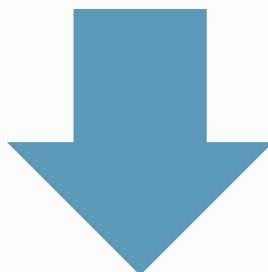
Passenger 0 picked up by Vehicle 10 at (5, 7)



drop Passenger



Passenger 6 has reached their destination at (12, 9)
Total travel time for Passenger 6 is : 7 steps.



Vehicle is broken down



Road Block

i think we have : roadblock
Roadblock introduced at (4, 2)

Vehicle 10 is broken down at (4, 11)
Vehicle 11 moved to (10, 7)

Before Disturbance

Passenger 0 has reached their destination at (14, 19).
Total travel time for Passenger 0 is : 3 steps.
Passenger 1 has reached their destination at (16, 4).
Total travel time for Passenger 1 is : 7 steps.
Passenger 2 has reached their destination at (17, 6).
Total travel time for Passenger 2 is : 6 steps.
Passenger 3 has reached their destination at (15, 0).
Total travel time for Passenger 3 is : 12 steps.
Passenger 4 has reached their destination at (14, 6).
Total travel time for Passenger 4 is : 7 steps.
Passenger 5 has reached their destination at (1, 16).
Total travel time for Passenger 5 is : 13 steps.

After Disturbance

Total travel time for Passenger 0 is : 4 steps.
Passenger 1 has reached their destination at (10, 17).
Total travel time for Passenger 1 is : 10 steps.
Passenger 2 has reached their destination at (12, 14).
Total travel time for Passenger 2 is : 10 steps.
Passenger 3 has reached their destination at (11, 17).
Total travel time for Passenger 3 is : 8 steps.
Passenger 4 has reached their destination at (8, 9).
Total travel time for Passenger 4 is : 5 steps.
Passenger 5 has reached their destination at (9, 13).
Total travel time for Passenger 5 is : 3 steps.
Cell at 11, 17 is occupied, passenger 7 can't move there.
Passenger 9 has reached their destination at (3, 0).
Total travel time for Passenger 9 is : 19 steps.

CONCLUSION

Perspectives

**Dynamic Simulation
Engine**



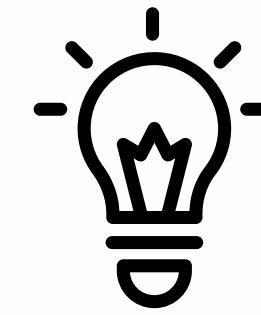
**Disturbance
Analysis**



**Interactive
Visualization**



Perspectives



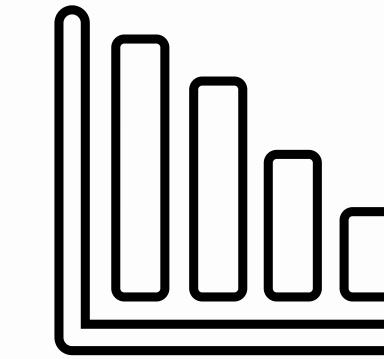
Idea 1

adding machine
learning to predict
traffic flow



Idea 2

integrating with
real-time GPS
data,



Idea 3

enhancing the
visual
representation

THANK YOU!