

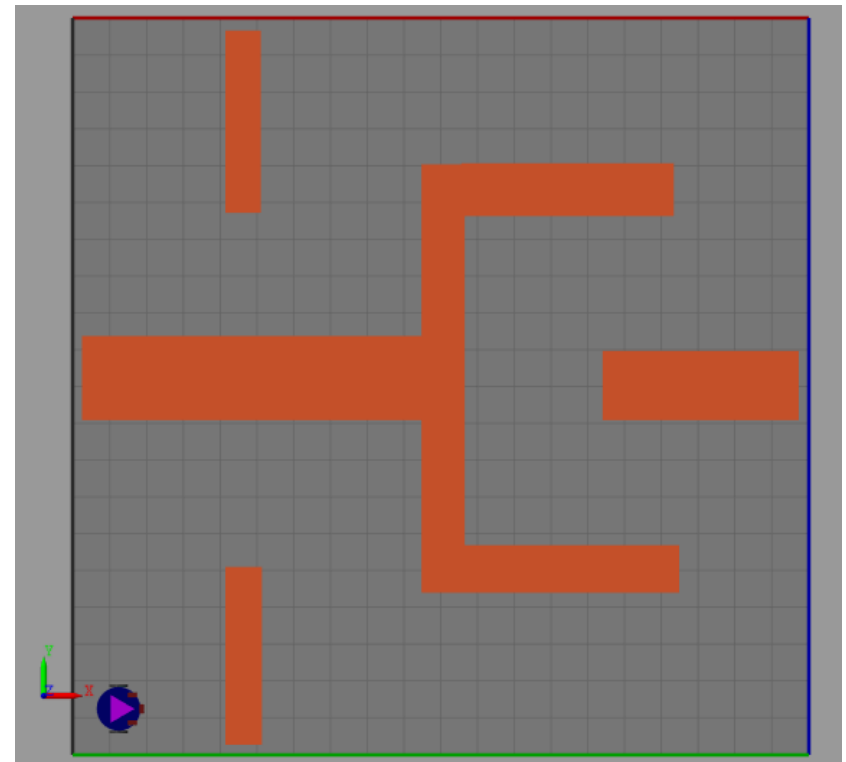
Introduction to Mobile Robotics with MATLAB and Simulink

Unit 8 (Final Project): Create a Maze Solving robot

By MathWorks Student Competition team

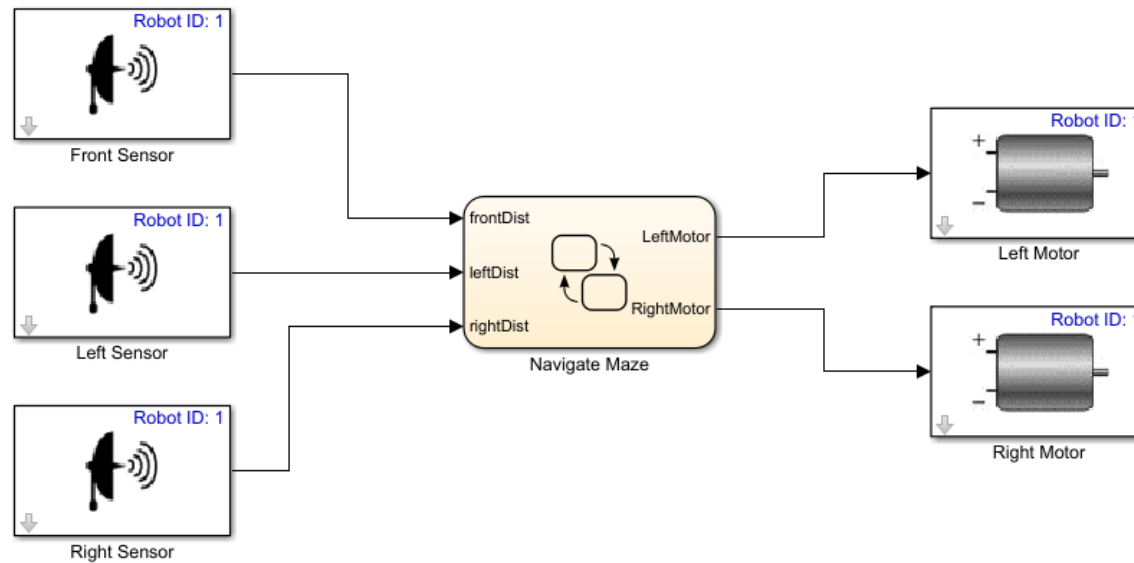
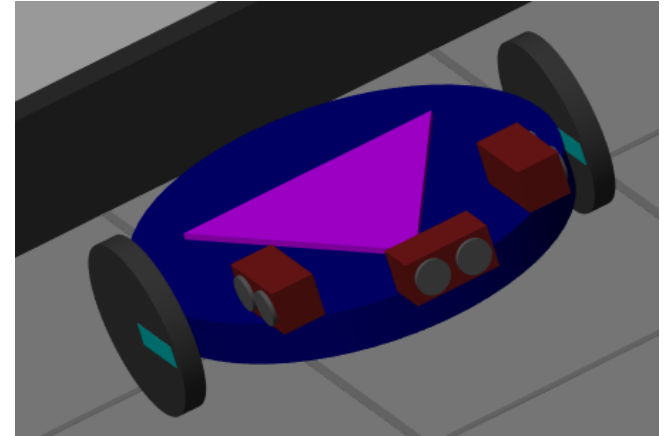
How to Solve a Maze

- Solving this particular maze means the following:
 - Move forward until you reach a wall
 - Turn right if there is an open path
 - Turn left if there is an open path
 - Keep moving forward



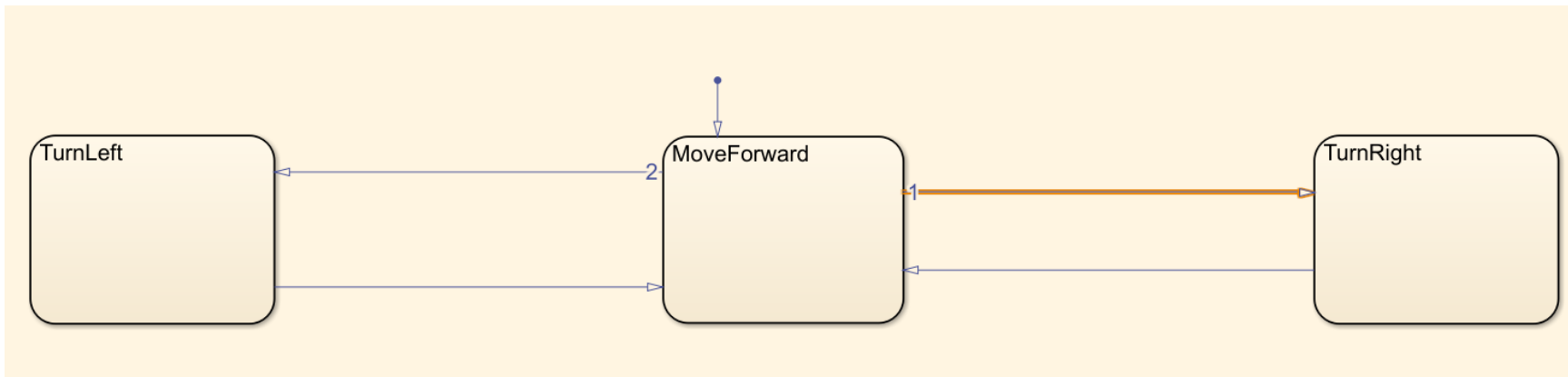
The Model

- Open the model “MazeRobot_start.slx”
- Each distance sensor can tell you whether there is a wall in front, left or right of the robot



The Chart

- The Stateflow chart contains 3 states and the necessary transitions
- Fill out the states and transitions with statements using the provided variables to help the robot get to the other side of the maze
- Use a combination of logical comparison and temporal logic
- Speed up the simulation to accelerate your algorithm testing



Symbols			
filter			
TYPE	NAME	PORT	
101 0 0	LeftMotor	1	
101 0 0	RightMotor	2	
101 0 0	frontDist	1	
101 0 0	leftDist	2	
101 0 0	rightDist	3	

End of Unit 8: Maze Solving Robot

- Congrats !

- Here are some of the takeaways from this unit
 - How to integrate multiple robot sensors
 - How to program dynamic robot behavior
 - How to solve a real life task using Simulink and Stateflow 😊