Completion Testing

What is being tested	Expected Output	Actual Output
First corner	Follow line	Cuts corner of turn
First junction	Turns to the right and follows the path horizontally	turns to the right by cutting the corner
Second corner	Follows the right line and turns downwards	cuts the corner but ends up on the correct path facing downwards
Second Junction	Turns right into the dead end	Turns right into the dead end
Dead End	Turns around	Turns Around
Third corner	Turn up onto the vertical path	Turns up onto the vertical path
Fourth and fifth corner	Robot turns through both corners	Robot Turns through both corners cutting the hard turns
Final corner and straight to finish	Robot turns through corner and goes straight to the end	Robot cuts the corner and makes it to the end of the line

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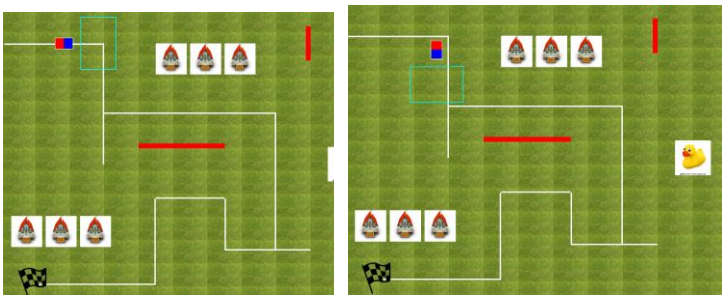
What is being tested	Expected Output	Actual Output
First corner	Follow line	Cuts corner of turn

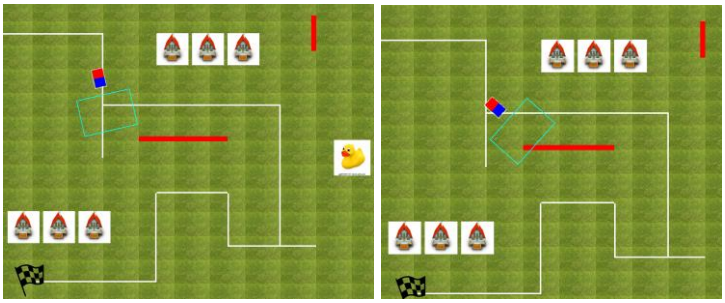
After the robot.cpp has started running after the correct method has been selected in the UI the robot starts moving. It cuts the corner slightly but gets back on track quickly.



This is not perfect for the desired outcome, but it is close enough at this stage where it is deemed too costly to alter.

What is being tested	Expected Output	Actual Output
First junction	Turns to the right and follows the path horizontally	turns to the right by cutting the corner

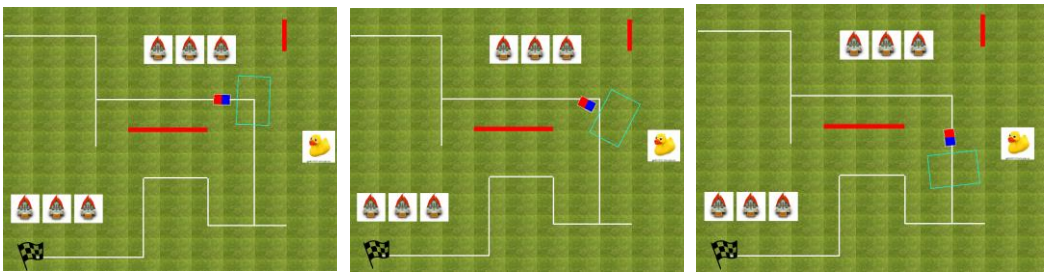
Once the robot has passed the first corner it turns to the right by cutting across the corner to get to the horizontal white line. It doesn't go down the path towards the dead end.



The expected outcome was for it to follow the white line and not carry down the dead end. This means that this is the correct outcome.

What is being tested	Expected Output	Actual Output
Second corner	Follows the right line and turns downwards	cuts the corner but ends up on the correct path facing downwards

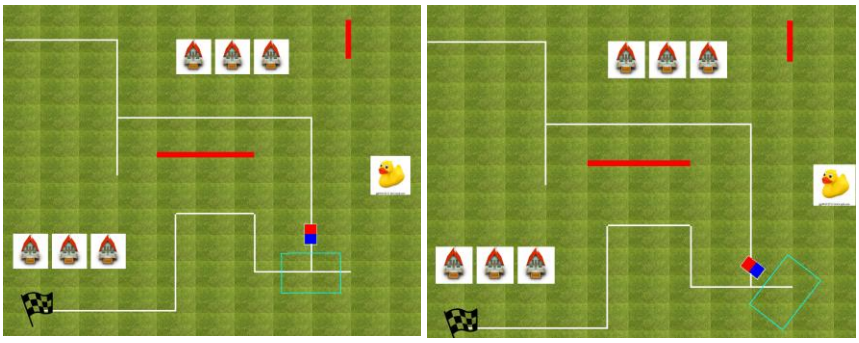
Once the robot has passed the first junction and got to the horizontal section it needs to turn downwards through another corner. It slightly cuts the corner, but it results in the correct path



This was the expected outcome, for it to reach the vertical section of white line.

What is being tested	Expected Output	Actual Output
Second Junction	Turns right into the dead end	Turns right into the dead end

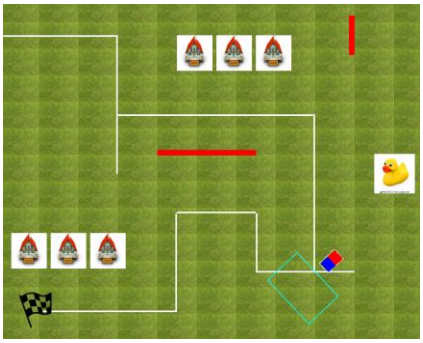
After the robot has passed down the vertical section it turns onto the right section of white path, which is a dead end.



This is the desired outcome as the code makes it check the rightmost side of the image first.

What is being tested	Expected Output	Actual Output
Dead End	Turns around	Turns Around

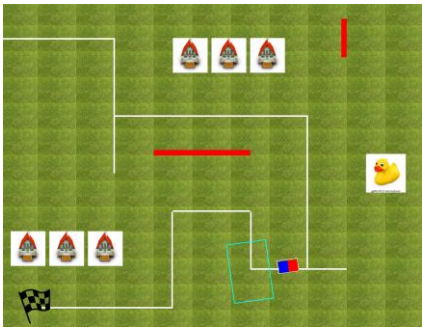
Once the robot has turned into the dead end from the second junction it is on a dead end so must turn around.

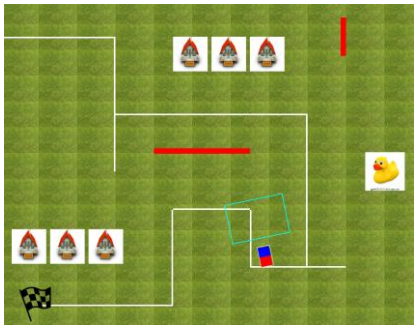


This is the expected outcome for this scenario.

What is being tested	Expected Output	Actual Output
Third corner	Turn up onto the vertical path	Turns up onto the vertical path

After turning around from the dead end the code will pass past the vertical white section and carry onto the third corner which it will take in a slightly rounded fashion.

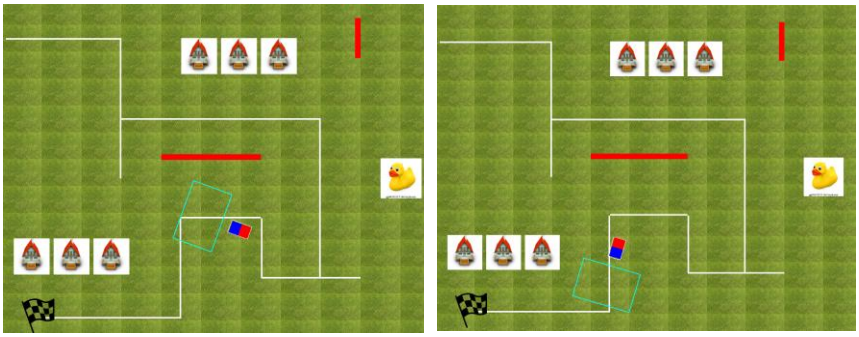




This is the correct outcome for the code.

What is being tested	Expected Output	Actual Output
Fourth and fifth corner	Robot turns through both corners	Robot Turns through both corners cutting the hard turns

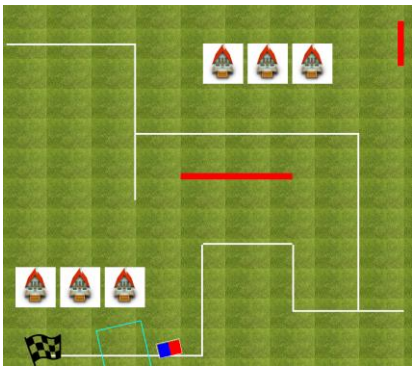
After the robot has passed the third corner it has two tight corners close together to go through. The robot will go in an arc shape, cutting the steep corners.



This is the expected outcome from the code.

What is being tested	Expected Output	Actual Output
Final corner and straight to finish	Robot turns through corner and goes straight to the end	Robot cuts the corner and makes it to the end of the line

After the two consecutive corners the robot is at the final turn to the left which will result in it being on a straight path to the finish line. The robot cuts the sharp corner on the inside and continues straight to the finish flag.



This is the expected outcome from the code.