**To:** Dr. Berry  
**From:** Matthew Schack, Peter Heath, and Data  
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In this lab we implemented 3 forms of path planning, topological, metric, and a hybrid metric topological method. For the topological navigation we used the table shown as Table 1 to determine the state the robot is in. Using the state the robot is in and directions in the form of left, right, or straight put in by the user, Data was able to successfully navigate the given path in the world.



**Table 1:** Table used to determine state which Data is in, red represents false and green represents true.

For Metric path planning Data starts with a map of the world on the robot the user then inputs its start and end location. Data then runs a recursive wave front algorithm to assign each cell a distance from the goal. Data moves along the path from by moving to the cell with the lowest number each time, this allows Data to move the most efficient path.