ARO Homework 6: RRT Planning in 2D Occupancy Grid

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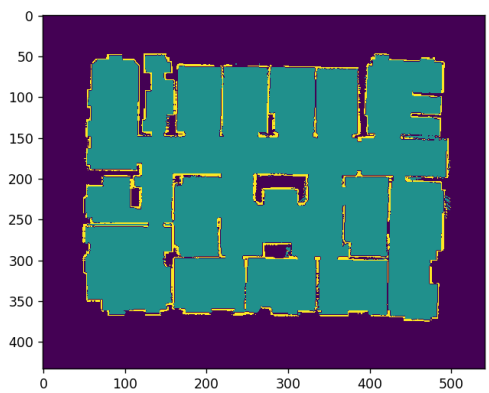

Figure 1: Occupancy grid plotted as image, adopted from *http://robotang.co.nz/projects/robotics/custom-player-plugins/*

Implement the RRT algorithm and find a collision-free piece-wise linear path in the 2D occupancy grid for the TurtleBot. The TurtleBot has diameter 40cm, it can move along the line in a specified direction. Size of occupancy grid bins is 5×5cm. Each bin contains class 1 (occupied), class 0 (unoccupied) or class -1 (unknown). Path starts in the bottom-left corner on coordinates $[309, 109]$ and ends in the upper-right corner $[82, 427]$ of the occupancy grid.