# Potential functions for rigid-body robots

1. Pick n control points (this is done by calling: m\_simulator->GetRobotVertices())
2. For each control point:
   1. Calculate forward kinematics:
   2. Take the forward kinematics (from above) and calculate attractive potential: (gx, gy are goal center positions)

* 1. Take the forward kinematics (from above) and calculate the repulsive potential, for each obstacle
     1. for each obstacle (
  2. Pass points into a Jacobian matrix:

* 1. Now for each of the attractive portions above, multiply with the jacobian, filling in the values from the points and current state of the robot.
  2. Now for each of the repulsive portions above, multiply with the Jacobian, filling in the values from the points and current state of the robot.