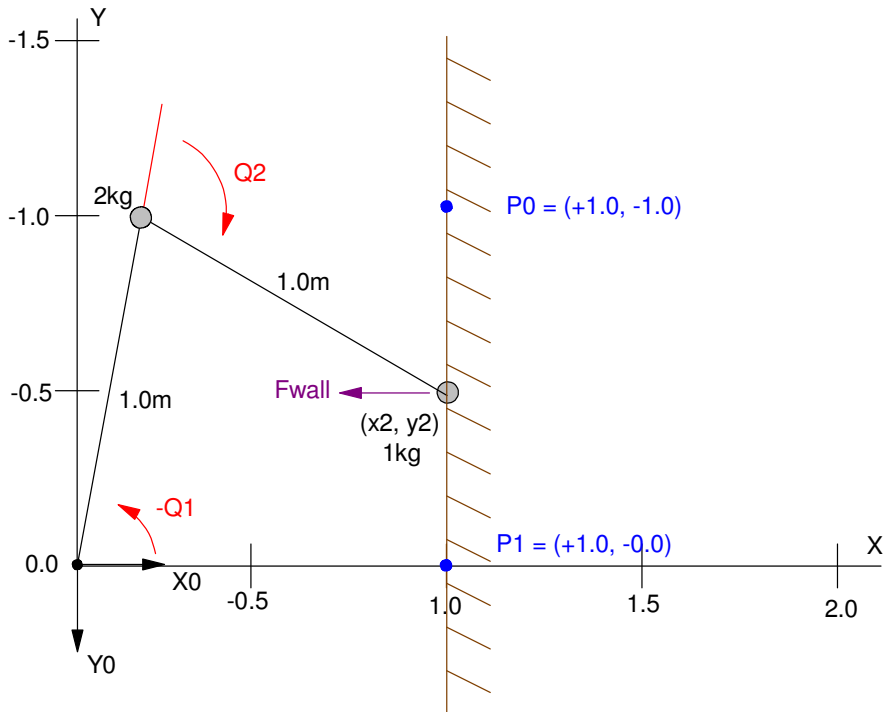
ECE 761: Homework #13: Contact Forces

For a 2-link arm, assume a wall exists at x = 1



1) Assume the robot is in contact with the wall at (x = 1.0, y = -0.5). Determine
   - The joint torques required to push against the wall with a force of (Fx = 1.0N. Fy = 0.0N)
   - The tip force (Fwall) which results from the joint torques being (T1 = -1.0N, T2 = -1.0N)

2) Find the dynamics of the robot with the constraint that it is in contact with the wall: x2 = 1.0

3) Determine a control law which moves the robot from
   - P0 = (+1.0, -1.0), to
   - P1 = (+1.0, -0.0)
   - In 2.0 seconds,
   - While maintaining a force of +1.0N against the wall at all times.

4) Simulate the RR robot under these conditions.