

# Challenge 1

Introduction to Robotics  
Instructor: Michael Wolf & Jeremy Ma

## 2-DOF Robot Arm

Using the Lego Mindstorms kit, build a robot arm with 2 degrees of freedom. The robot will be placed on a desk and should move in a horizontal plane. The workspace of this robot should be (at least) a “donut” with inner radius of 6\* and outer radius of 30 (see below). The workspace may be larger if you wish - that is, you can make your donut larger / cover more space. Have some marker on your Lego arm that marks its “endpoint”.

The task of your robot arm is as follows:

Move the endpoint of the robot arm to the locations given in the homework assignment. You should have a strategy worked out before week 2 of the Challenge for how you will accomplish this (see assignment).

\*Units are given in “Lego Spaces” (LS). One LS is the distance between the centers of two adjacent Lego studs / holes.

