Arm Lab-Group 13

* + 1. I would place the motors in between each link, on top of the arm. Positioning the motors in each joint will facilitate the motion transfer from each motor to the robot so that a belt or additional gears are not necessary. In addition, if the third dimension is considered, positioning the motors above the arm will prevent the motors from hitting the obstacles.
    2. A high gear ratio is better than a low one, because speed is not as important as the torque in order to control the arms with accuracy.
    3. Sturdiness and precision are important when making a robotic arm. A robot that is not study will shake and may not always do what is expected; sturdiness will make sure that the robot only moves when it is intended to move. The robot must also be precise because it must be able to know where it is to be able to know where to go.

2.1

Figure Configuration space for Arm Lab robot. Please note that all angles are with respect to the robot.

A screenshot of a cell phone

Description automatically generated

Joint limit for base angle is 0 ≤base\_angle ≤180 degrees and the middle joint angle is constrained by

-180 ≤mid\_angle ≤180.