Walking gait

In the following sessions, you'll use the tools acquired during the previous classes on a robotic hexapod in order to create a walking gait. In this particular session, you'll check the mechanical integrity of your robot, and you'll configure the robot in order to begin the walking gait development.

1. Set up a simple demonstration of your inverse kinematic implementation. 30 min max. You'll use only one the leg from your hexapod. The demonstration will be a success if you manage to do the following steps : a) go to x=170, y=-45, z=35 b) go to x=170, y=-45, z=0 c) go to x=170, y=-45, z=35 d) go to x=170, y=0, z=35 e) go to x=170, y=0, z=0 f) go to x=170, y=0, z=35 g) go to x=170, y=45, z=35 h) go to x=170, y=45, z=0 i) go to x=170, y=45, z=35 j) start over from a) -> The delay between each step is up to you. 1 sec is a safe first try value.

After this, the file "kinematics.py" will be made available (ask the teacher, in the same email with the passwords 😄). It contains an implementation of the IK and DK solutions. You can continue with your own implementation but you're encouraged to check that both codes are identical in their behaviour.

2. You'll be given an Hexapod, tighten each screw, verify the connections. Do not underestimate Murphy.
3. Set the correct ID for each one of the 18 motors. Allowed IDs are 11, 12, 13, 21, 22, 23, 31, 32, 33 41, 42, 43, 51, 52, 53, 61, 62, 63. The ID convention will be showed in class.
4. Go to the pypot's documentation page and read about the 'autodetect_robot' functionality and the JSON dumping system. Then make it work for your robot
5. How would you do to make your hexapod walk? Research, discuss and conquer the world.