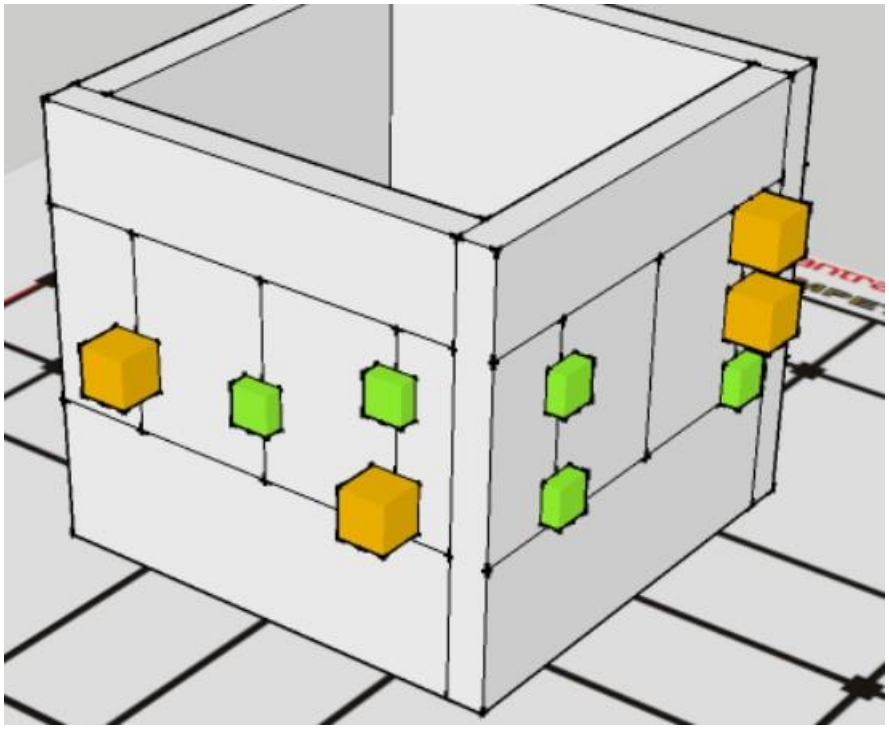
Problem Statement

1. Need for this task

Let us first understand the use of the robotic arm in our theme. The Fig. 1 shown below is a sample tree.



Such type of tree will be present in our final task at different positions and height. We will be requiring a robotic arm which will help in plucking and placing the required fruit.

In later tasks, we will be placing your robotic arm on top of a line following bot for navigating the arena.

2. Problem Statement

In this task 3, you will be designing your own robotic arm.

As we know a robotic arm consists of the following things at minimum:

Links, Base, Joints & Gripper

You are required to design the base, links and joints in this task.
Design of gripper should be done in later tasks.

3. Rules-

NOTE: Not following the given convention will lead to poor evaluation. Hence read it carefully.

While building the model hierarchy, you need to follow the conventions given below:

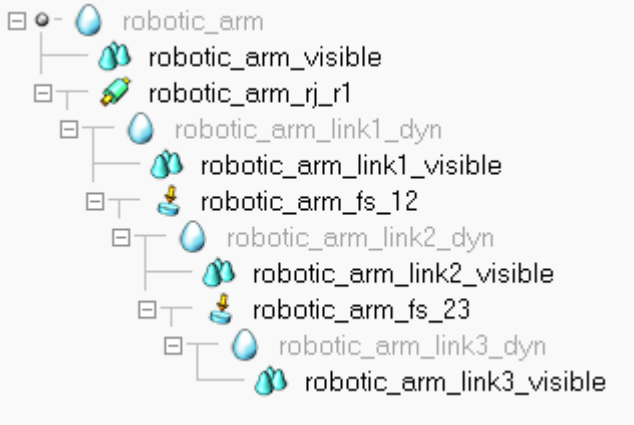


Fig. 7: Example hierarchy
(Note: This is just an example picture. The number of joints, force sensors, links may vary in your design)

The base of the robotic arm should be named as robotic_arm
Its visible part should be named as robotic_arm_visible

Links should be named as x_y_z
where
z → Dynamic(dyn) or Visible(visible)
y → linkn … where n is the link number
x → to which object it belongs(robotic_arm)

example: robotic_arm_link1_dyn , robotic_arm_link1_visible etc.

Joints should be named as x_a_b
where,
x → to which object it belongs (robotic_arm)
a → type of joint:
rj for revolute joint
pj for prismatic joint
fs for force sensor
b → parent and child link

example:
robotic_arm_rj_r1 A revolute joint belonging to robotic arm which connects robotic arm object to link 1
(Note: Here r was used in r1 since the parent was the base of our arm)

robotic_arm_fs_12 A force sensor (acting as a rigid joint in Fig. 7) belonging to robotic arm which connects link 1 to link 2
(Note: Here 12 was used since both the parent and child were links)

To rename the objects, double click on the name of the object in the scene hierarchy.