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Description of your theory of operation of my reactive program: -

1. First I find where the object is located w.r.t the robot. So, I started with finding the centroid of the object and moving it till its centroid position w.r.t camera is (0,0).
2. Now I need to find another component that is yaw rotation of the camera. To get the yaw rotation about the z-axis of the angle α w.r.t the camera , I moved the object in the x-direction (robot frame) and then saw at what angle it moved in the camera's frame.

$$R_z(\alpha) = \begin{pmatrix} \cos\alpha & -\sin\alpha & 0 \\ \sin\alpha & \cos\alpha & 0 \\ 0 & 0 & 1 \end{pmatrix}.$$

3. I then used these coordinates and published to the example_block_grabber to grab and place at the input coordinates.

Observations regarding its behavior:-

One thing I noticed is that after the first run, on the second run the grabber doesn't pick up the block, so I need to restart it again and again.
Secondly the chance if picking up the object is around 60% even if there is a collision between the vacuum and the block.

Thirdly, the orientation of the block needs to calculated based on the current position w.r.t the camera. The orientation must be such that it must be aligned to the x-axis and opposite to the y axis such that it is aligned to the gripper alignment.