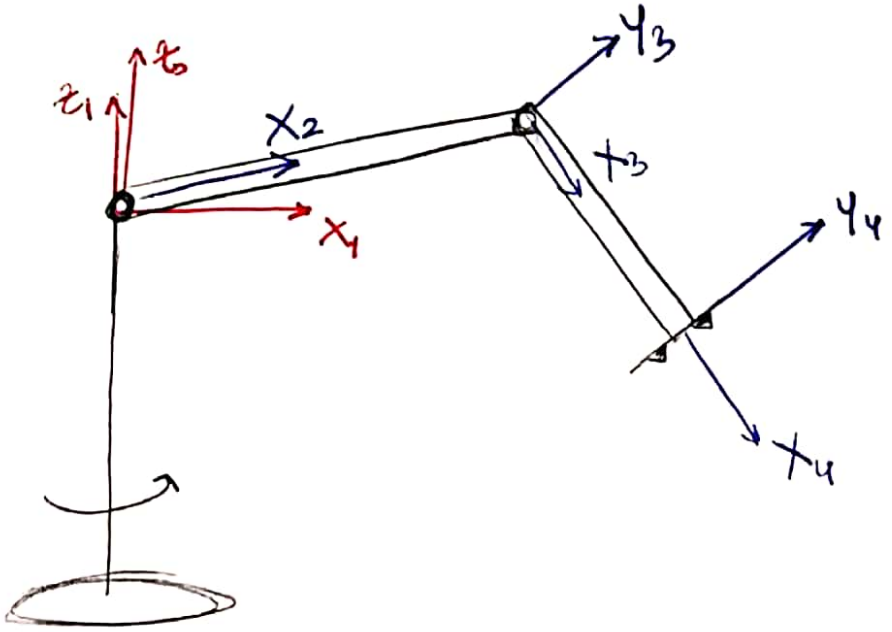
Forward Kinematics



DH Table

	α_{i-1}	a_{i-1}	θ_i	d_i
1	0	0	θ_1	0
2	$\pi/2$	0	θ_2	0
3	0	L_1	θ_3	0
4	0	L_2	0	0

CamScanner ile tarandı

$$ {}^{0}_{1}T = \begin{bmatrix} c_1 & -s_1 & 0 & 0 \\ s_1 & c_1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix} \qquad {}^{1}_{2}T = \begin{bmatrix} c_2 & -s_2 & 0 & 0 \\ 0 & 0 & -1 & 0 \\ s_2 & c_2 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix} $$

$$ {}^{2}_{3}T = \begin{bmatrix} c_3 & -s_3 & 0 & L_1 \\ s_3 & c_3 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix} \qquad {}^{3}_{4}T = \begin{bmatrix} 1 & 0 & 0 & L_2 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix} $$

$$ {}^{0}_{4}T = \begin{bmatrix} c_1c_2c_3 - c_1s_2s_3 & -c_1c_2s_3 - c_1s_2c_3 & s_1 & (c_1c_2c_3 - c_1s_2s_3)L_2 + c_1c_2L_1 \\ s_1c_2c_3 - s_1s_2s_3 & -s_1c_2s_3 - s_1s_2c_3 & -c_1 & (s_1c_2c_3 - s_1s_2s_3)L_2 + s_1c_2L_1 \\ s_2c_3 + c_2s_3 & -s_2s_3 + c_2c_3 & 0 & (s_2c_3 + c_2s_3)L_2 + s_2L_1 \\ 0 & 0 & 0 & 1 \end{bmatrix} $$

$$ {}^{0}_{4}T = \begin{bmatrix} c_1c_{23} & -c_1s_{23} & s_1 & \underbrace{c_1c_{23}L_2 + c_1c_2L_1}_{x} \\ s_1c_{23} & -s_1s_{23} & -c_1 & \underbrace{s_1c_{23}L_2 + s_1c_2L_1}_{y} \\ s_{23} & c_{23} & 0 & \underbrace{s_{23}L_2 + s_2L_1}_{z} \\ 0 & 0 & 0 & 1 \end{bmatrix} \qquad (*) $$

CamScanner ile tarandı