Denavit-Hartenberg parameters of a 3DoF robotic arm

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The following four transformation parameters are known as Denavit-Hartenberg parameters:

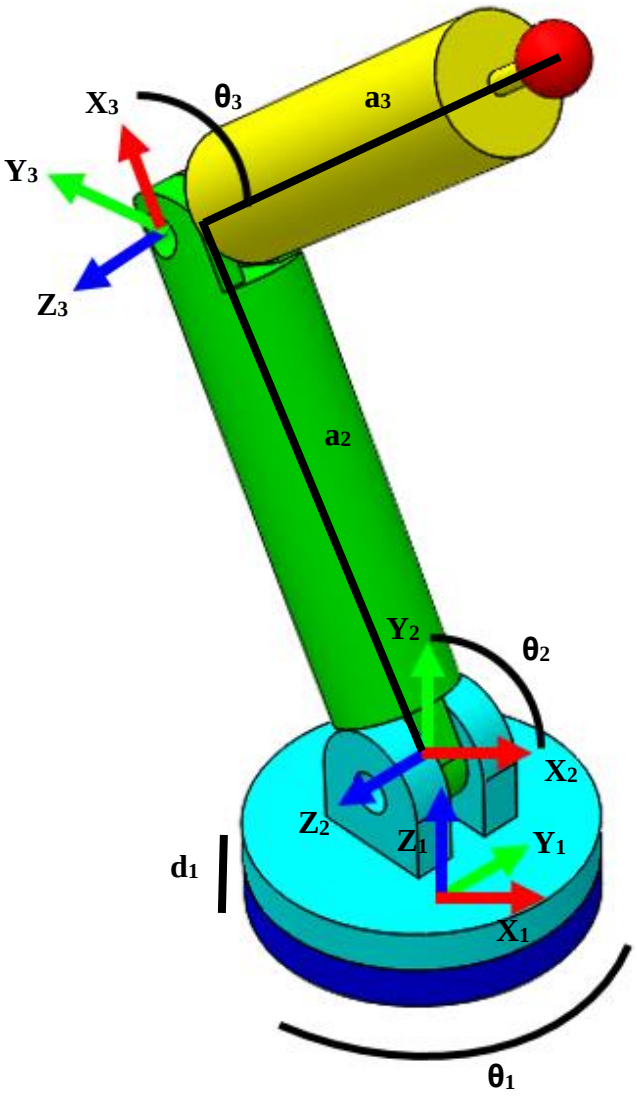
d : offset along previous ***z-axis*** to the common normal

θ : angle about previous ***z-axis***, from old ***x-axis*** to new ***x-axis***

a : length of the common normal. In a revolute joint, this is the radius about old ***z-axis***.

α : angle about common normal, from old ***z-axis*** to new ***z-axis***.

First we have to define our axes and rotations:



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For the used robot, we have the following table:

Joint **i**	α_i (deg)	a_i (mm)	d_i (mm)	θ_i (deg)
1	90	**0**	$\mathbf{d_1}$	$\boldsymbol{\theta_1}$
2	0	$\mathbf{a_2}$	**0**	$\boldsymbol{\theta_2}$
3	0	$\mathbf{a_3}$	**0**	$\boldsymbol{\theta_3}$

Which, using the values of the model, will result in:

Joint **i**	α_i (deg)	a_i (mm)	d_i (mm)	θ_i (deg)
1	90	0	17.5	$\boldsymbol{\theta_1}$
2	0	65	0	$\boldsymbol{\theta_2}$
3	0	67.5	0	$\boldsymbol{\theta_3}$