Tarea 5.
Parámetros DH y transformadas homogéneas.

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Grado y grupo:
8°A

Materia:
Cinemática de Robots.

Carrera:
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i	a_{i-1}	α_{i-1}	d_i	θ_i
1	0	0	0	Θ1
2	0	0	d2	Θ2
3	L3	90°	d3	Θ3

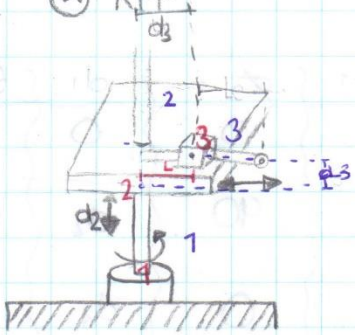
$$T_1^0 = \begin{bmatrix} C\theta1 & S\theta1 & 0 & 0 \\ S\theta1 & C\theta1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix} \quad T_2^1 = \begin{bmatrix} C\theta2 & S\theta2 & 0 & 0 \\ S\theta2 & C\theta2 & 0 & 0 \\ 0 & 0 & 1 & d2 \\ 0 & 0 & 0 & 1 \end{bmatrix}$$

$$T_3^2 = \begin{bmatrix} 0 & -1 & 0 & L3 \\ 0 & 0 & 0 & -d3 \\ 0 & 0 & 0 & 0 \\ 1 & 0 & 0 & 1 \end{bmatrix}$$

$$T_3^0 = \begin{bmatrix} -C\theta2S\theta1 - S\theta2S1 & -C\theta2C\theta1 - S\theta2S\theta1 & 0 & L3 \\ 0 & 0 & -1 & -d3 - d2 \\ 0 & 0 & 0 & 0 \\ C\theta2C1 + S\theta2S\theta1 & C\theta2S\theta1 + S\theta2C\theta1 & 0 & 1 \end{bmatrix}$$

Tarea DH y T_0^3 para el miercoles.

(A) RPP



	a_{i-1}	α_{i-1}	d_i	θ_i
1	0	0	0	θ_1
2	0	0	d_2	θ_2
3	L_3	90	d_3	90°

eslabones
articulaciones

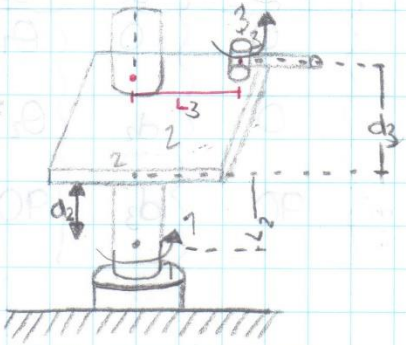
$$T_1^0 = \begin{bmatrix} C\theta_1 & S\theta_1 & 0 & 0 \\ S\theta_1 & C\theta_1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix} \quad T_2^1 = \begin{bmatrix} C\theta_2 & S\theta_2 & 0 & 0 \\ S\theta_2 & C\theta_2 & 0 & 0 \\ 0 & 0 & 1 & d_2 \\ 0 & 0 & 0 & 1 \end{bmatrix}$$

$$T_3^2 = \begin{bmatrix} 0 & -1 & 0 & L_3 \\ 0 & 0 & -1 & -d_3 \\ 0 & 0 & 0 & 0 \\ 1 & 0 & 0 & 1 \end{bmatrix}$$

$$T_3^0 = T_1^0 T_2^1 T_3^2 =$$

$$\begin{bmatrix} -C\theta_2 S\theta_1 - S\theta_2 S\theta_1 & -C\theta_2 C\theta_1 - S\theta_2 S\theta_1 & 0 & L_3 \\ 0 & 0 & -1 & -d_3 - d_2 \\ 0 & 0 & 0 & 0 \\ C\theta_2 C\theta_1 + S\theta_2 S\theta_1 & C\theta_2 S\theta_1 + S\theta_2 C\theta_1 & 0 & 1 \end{bmatrix}$$

⑤ RPR



	a_{i-1}	α_{i-1}	d_i	θ_i
1	0	0	0	θ_1
2	L_2	90	d_2	θ_2
3	L_3	0	d_3	θ_3

$$T_1^0 = \begin{bmatrix} A & B & & \\ C\theta_1 & S\theta_1 & 0 & 0 \\ S\theta_1 & C\theta_1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix} \quad T_2^1 = \begin{bmatrix} C & E & & F \\ C\theta_2 & S\theta_2 & 0 & L_2 \\ 0 & 0 & -1 & 0 \\ S\theta_2 & C\theta_2 & 0 & d_2 \\ 0 & 0 & 0 & 1 \end{bmatrix} G$$

$$T_3^2 = \begin{bmatrix} H & I & & \\ C\theta_3 & S\theta_3 & 0 & L_3 \\ S\theta_3 & C\theta_3 & 0 & -d_3 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix} \begin{matrix} J \\ K \end{matrix}$$

$$T_3^0 = T_1^0\, T_2^1\, T_3^2 =$$

$$\begin{bmatrix} C\theta_2 C\theta_1 C\theta_3 + S\theta_2 S\theta_1 C\theta_3 & C\theta_2 S\theta_1 C\theta_3 + S\theta_2 C\theta_1 C\theta_3 & 0 & C\theta_3 L_2 + L_3 \\ C\theta_2 C\theta_1 S\theta_3 + S\theta_2 S\theta_1 S\theta_3 & C\theta_2 S\theta_1 S\theta_3 + S\theta_2 C\theta S\theta_3 & 0 & S\theta_3 L_2 - d_3 \\ C\theta_2 S\theta_1 + S\theta_2 C\theta_1 & C\theta_2 C\theta_1 + S\theta_2 S\theta_1 & -1 & d_2 \\ C\theta_2 C\theta_1 + S\theta_2 S\theta_1 & C\theta_2 S\theta_1 + S\theta_2 C\theta_1 & 0 & L_2 + 1 \end{bmatrix}$$