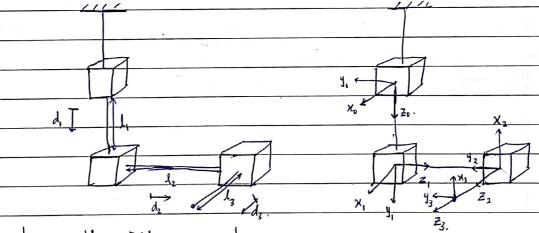
ASSIGNMENT - 4

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A 3D printer has the following PPP linkage. It is exactly similar to the cartesian manipulator. Interpreted the only difference that would occur is that the ground is set at the top of the 3D printer frame. Hence the first prismatic joint would go down instead of moving up. Hence, the only change will be that the displacement of would be considered the in the downward direction. The rest will be exactly similar to the three link cartesian manipulator. Since of is a variable, we can eadjust the sign according to our needs. We get the 3D printer to be same as the cartesian robot with december negative. We have:



We have the DH parameters as-

					*	
Link	θ;		a; X;		jela eti	6 4
	2		-			
1	0	_l, † d,*	0 90			
2	-90	l + d*	0 -90	- * =	variable	£.
3	0	l + d*	0 0			
		3				

. Writing the transformation matrices, we get:

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Table . los	1 0 0 0 0 1 0
	A = 0 0 -1 0 A = -1.00 0
	0 •1 0 l+d, 0 -1 0 l+d,
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1	00 = 0 (010) + 1
Lintalug	Writing the forward kinematic equations, we get in matrix
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8)	In a 3-D printer, three prismatic joints are							
	perpendicular to each other. Hence the net motion							
	of the end effector is a result of three independent							
61	motions along three perpendicular directions.							
Personal Property and Property	Menu we can directly seperate the displacements							
260	in all three directions. From the diagram, we can write							
	at ve the same when with most one wings							
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	and and yellow the state of the							
f*r	$d_3 = z$ (x, y, z) d_2							
<u> </u>	at which an appendit touchod in (x,y,z) d2							
	These equations are defined as per the around mis							
	chord as shown in the above digaram 1 the and							
	effector position is given as shown.							
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