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```
clc,clear,close

DH = [0 0 0 0;
      pi/2 0 .138 0;
      0 .425 -.131 0;
      0 .392 .127 0;
      pi/2 0 .1 0;
      -pi/2 0 .1 0];

[r,c] = size(DH);
NDH = zeros(r,c);

for row=1:r
    new_row = DH(row,:);
    new_row = new_row(end:-1:1);
    NDH(row,:) = new_row;
end

DH = NDH;

%L = zeros(1,6);
%L(1) = Link((DH(1,:))(end:-1:1),'modified','revolute')

robot = SerialLink(DH,'modified');
robot.name = 'UR5';
robot.display
%robot.plot(zeros(1,6))
```

robot =

UR5:: 6 axis, RRRRRR, modDH, slowRNE

j	theta	d	a	alpha	offset
1	q1	0	0	0	0
2	q2	0.138	0	1.5708	0
3	q3	-0.131	0.425	0	0
4	q4	0.127	0.392	0	0
5	q5	0.1	0	1.5708	0
6	q6	0.1	0	-1.5708	0

b c

```
T0G = transl(.3,.5,-.163)*trotx(pi);

q = robot.ikine(T0G,'q0',zeros(1,6));
figure
robot.plot(q)
hold on
trplot(T0G)

fprintf('This set of joint angles is not acceptable because one or more of the robot''s joints is currently in the table')
```

This set of joint angles is not acceptable because one or more of the robot's joints is currently in the table

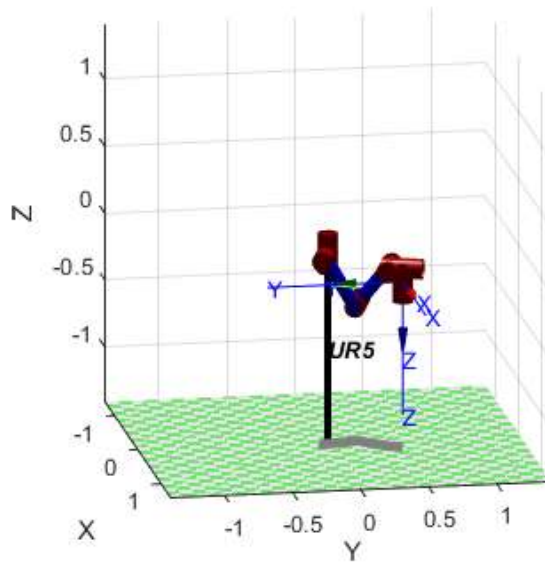
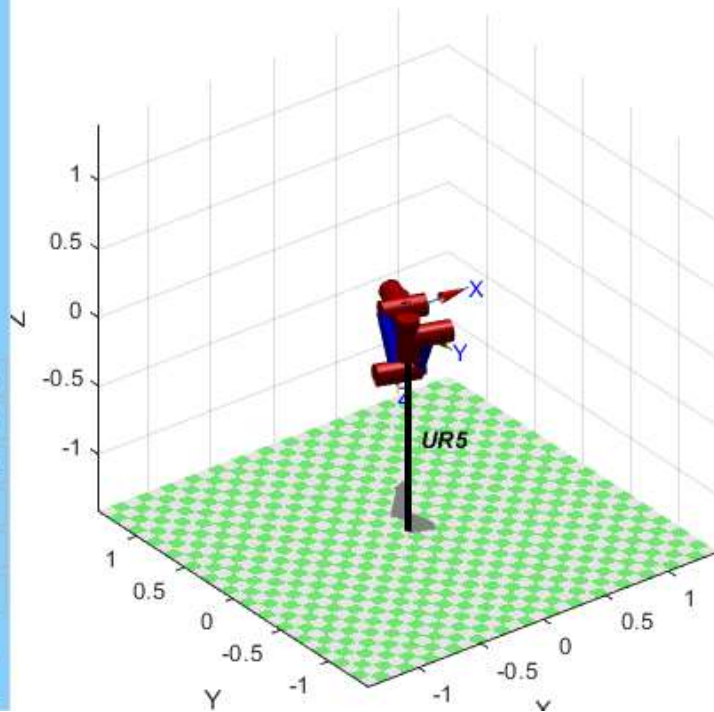
Teach

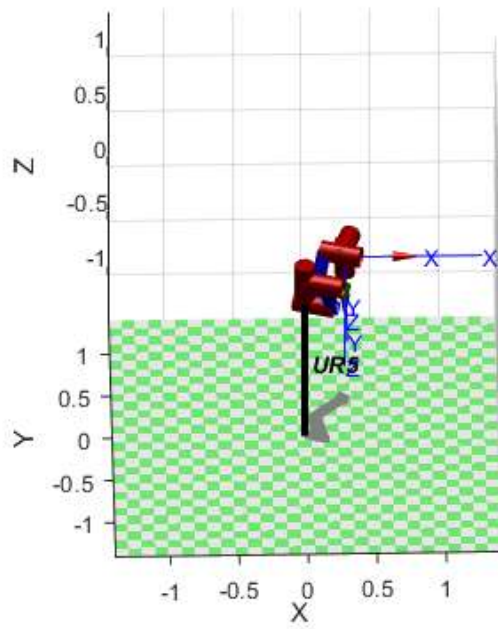
X: 0.603
Y: 0.105
Z: 0.510

R: 32.4
P: 32.4
Y: 90.0

q1			32.4
q2			64.8
q3			-32.4
q4			0
q5			0
q6			0

X





d

```
clc,close  
  
robot.teach()
```

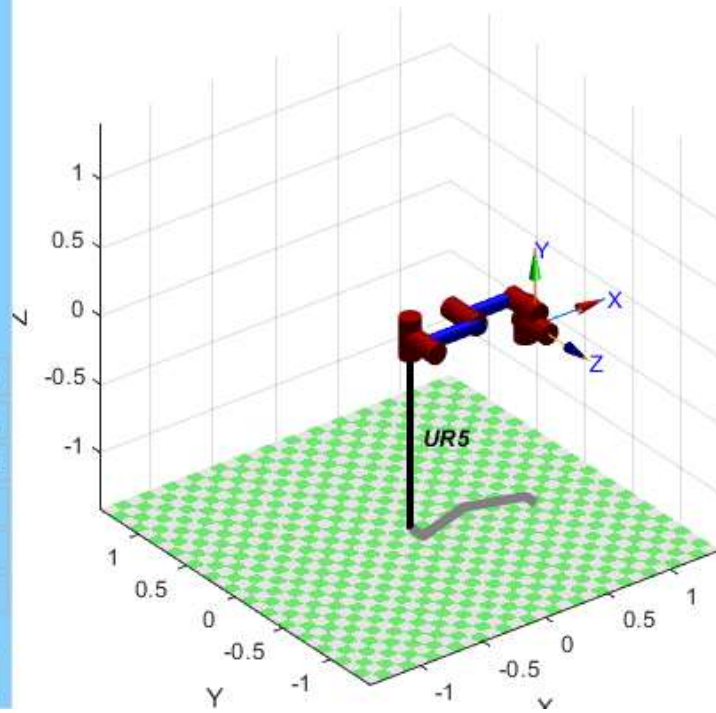
Teach

X: 0.603
Y: 0.105
Z: 0.510

R: 32.4
P: 32.4
Y: 90.0

q1			32.4
q2			64.8
q3			-32.4
q4			0
q5			0
q6			0

X



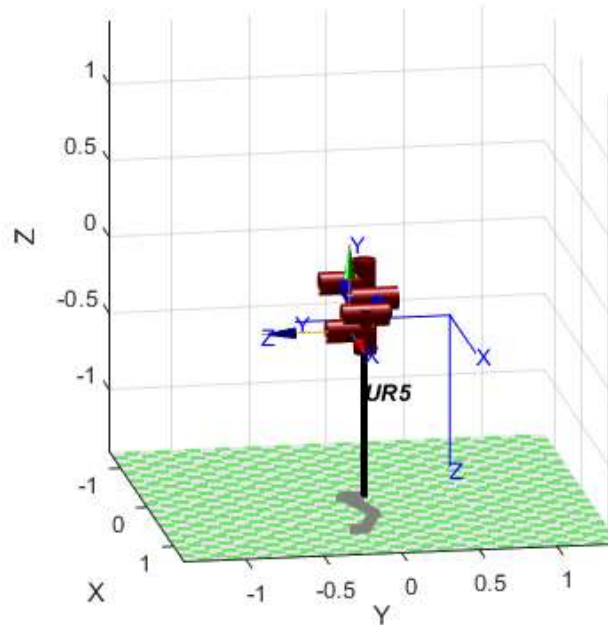
Teach

X: 0.817
Y: -0.234
Z: -0.100

R: -0.0
P: 0.0
Y: 90.0

q1			0
q2			0
q3			0
q4			0
q5			0
q6			0

X



d2

```
T0G = transl(.3,.5,-.163)*trotx(pi);

current_pose = robot.getpos();

q = robot.ikine(T0G,'q0',current_pose);
figure
robot.plot(q)
hold on
trplot(T0G)
```

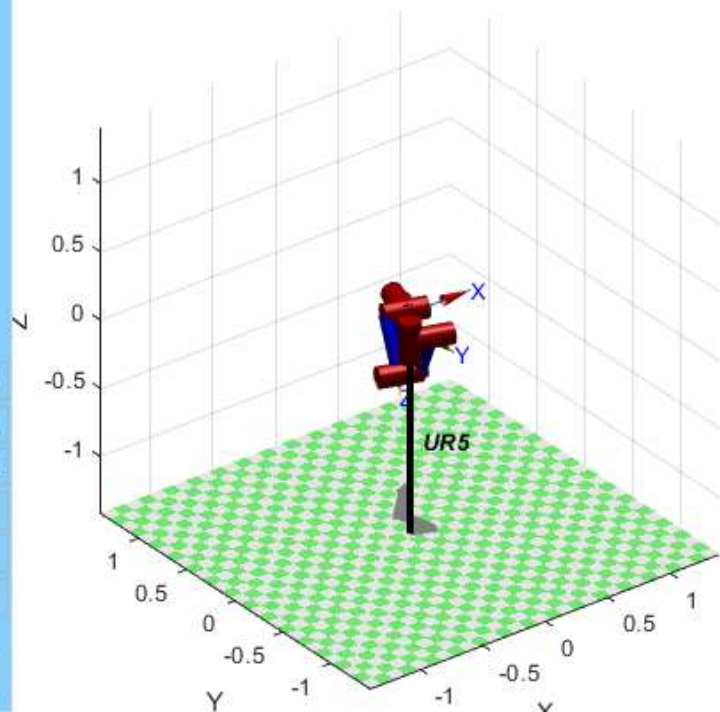
Teach

X: 0.603
Y: 0.105
Z: 0.510

R: 32.4
P: 32.4
Y: 90.0

q1			32.4
q2			64.8
q3			-32.4
q4			0
q5			0
q6			0

X



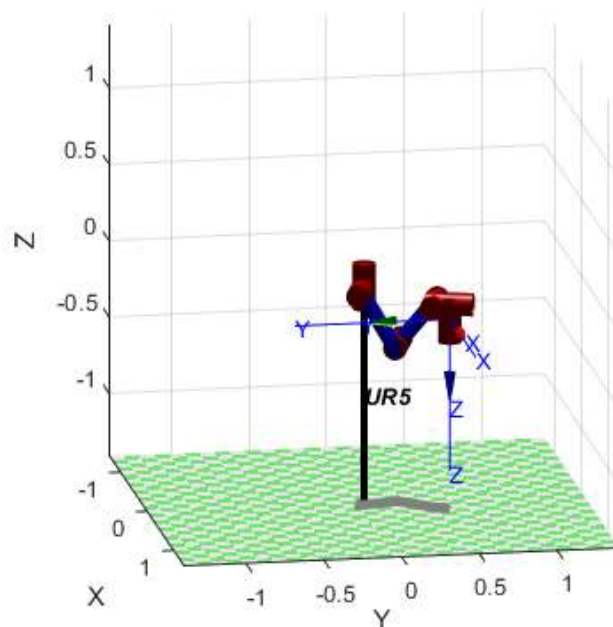
Teach

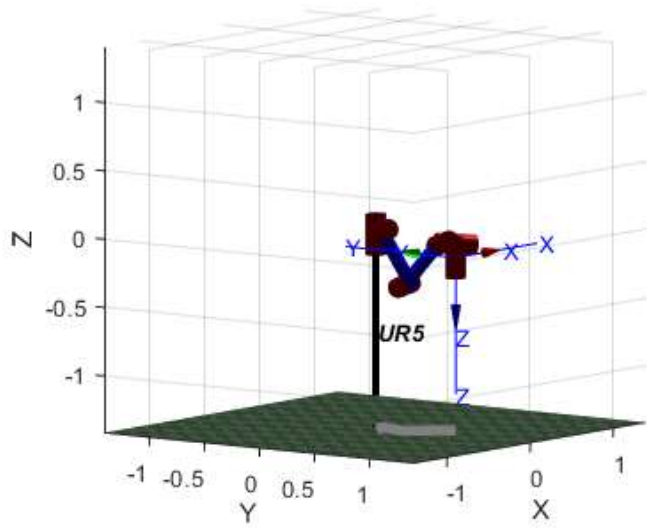
X: 0.817
Y: -0.234
Z: -0.100

R: -0.0
P: 0.0
Y: 90.0

q1			0
q2			0
q3			0
q4			0
q5			0
q6			0

X





Az: 53 El: -8