LAB 2: Inverse kinematics

Preparation:

Solve the inverse kinematics problem of the given robot manipulator considered in the first laboratory exercise by applying Pieper's solution.

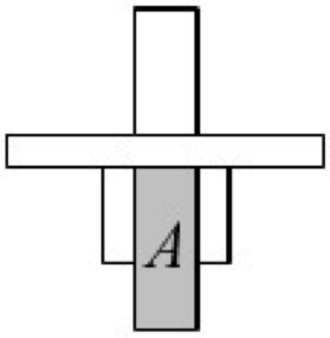
Exercise:

1.Write a Python function *invkin* that represents an implementation of the solution to the inverse kinematics problem performed in preparation for the exercise for a given robotic manipulator and a given homogeneous transformation matrix **T**, which represents the desired position of the tool tip relative to the base coordinate system. The function should return **q** - a vector of joint variables that allows the tool to be placed in the position given by the matrix **T**.

2. Display the considered robotic manipulator on the computer screen in the configuration defined by the vector q.

3. Place cube A with dimensions 40x20x50 on the surface on which the robot manipulator is placed, where the coordinates of the center of the cube in relation to the base coordinate system of the robot are (300, -120).

4. Display on the computer screen the robotic manipulator in the position to grip block A. The gripper should grip the block as shown in the figure.



Report:
The report should contain:

A modified Python script lastname_2.py that performs the tasks assigned in the *Exercise* (LAB2 - Inverse Kinematics) and a written report with a description of the exercise and several images of the visualization of the robotic manipulator under points 2 and 4 of the *Exercise*.
Zip the files and upload them by April 10th.