Problem Statement:

Consider a planar robotic arm consisting of two rigid links of equal length $l_1=l_2=1$, connected by two revolute joints. The arm is fixed at the origin, and its configuration is defined by two joint angles q_1 and q_2. The position of the end-effector in the Cartesian plane is given by the forward kinematics equations: $x = l_1\cos(q_1) + l_2\cos(q_1 + q_2)$, $y = l_1\sin(q_1) + l_2\sin(q_1 + q_2)$ You are required to complete the following tasks:

Task 1: Compute the position of the elbow joint and the position of the end effector joint.

Task 2: Create a 2D plot showing the visualization of the robotic arm (You could take the base as the origin and then plot the links, base to the elbow for first link and elbow to the end effector for the second link.

Do these tasks for atleast three configurations, say straight arm, bent elbow(elbow is visibly bent), folded (arm is folded back) or any other you can think of. A document with a short explanation describing how changes in q_1 and q_2 affect the arm's position and workspace and your python script or Jupyter notebook consisting of the above tasks is expected of you.

You are expected to submit the assignment by **18th EOD.** Submissions should be made via a GitHub repository (link will be shared on the whatsapp group)