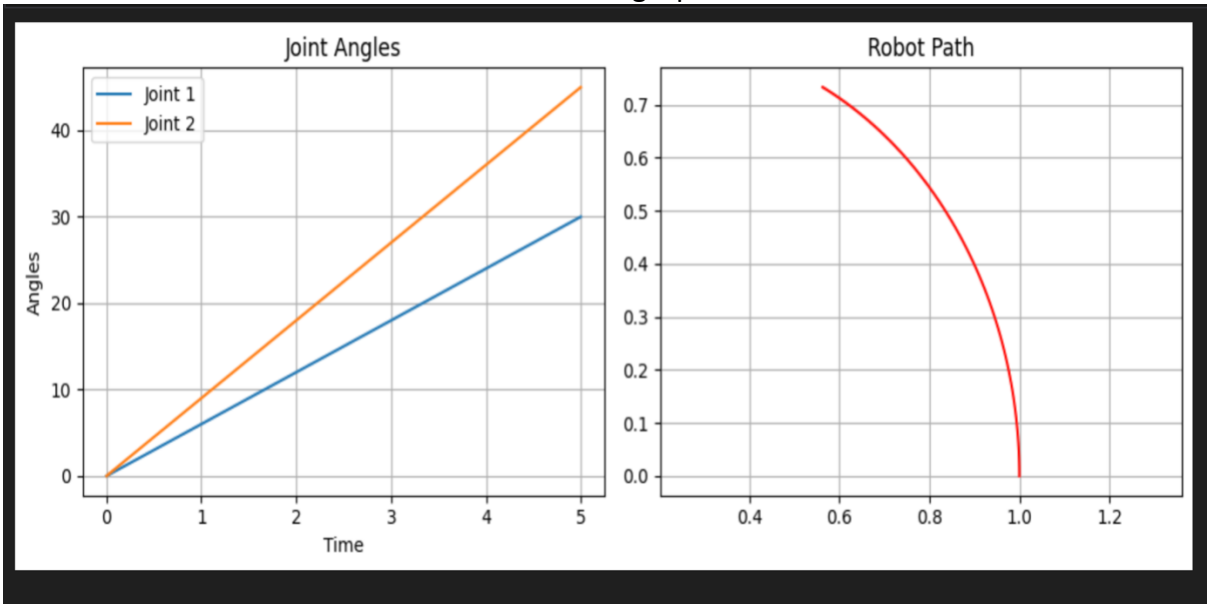
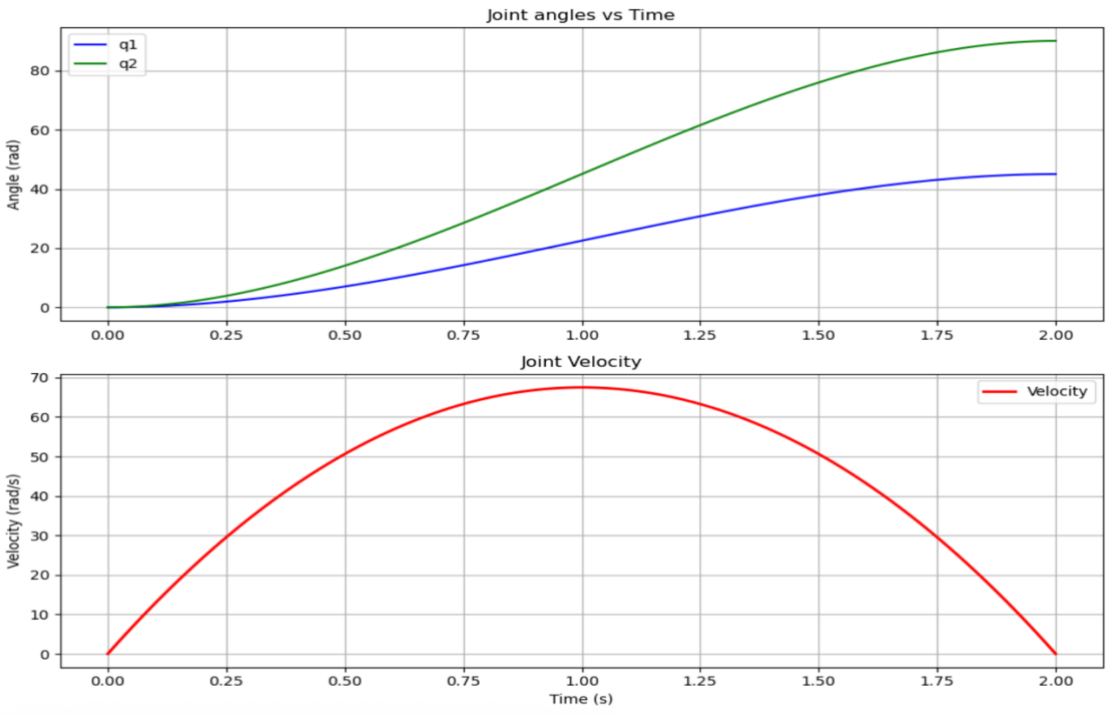
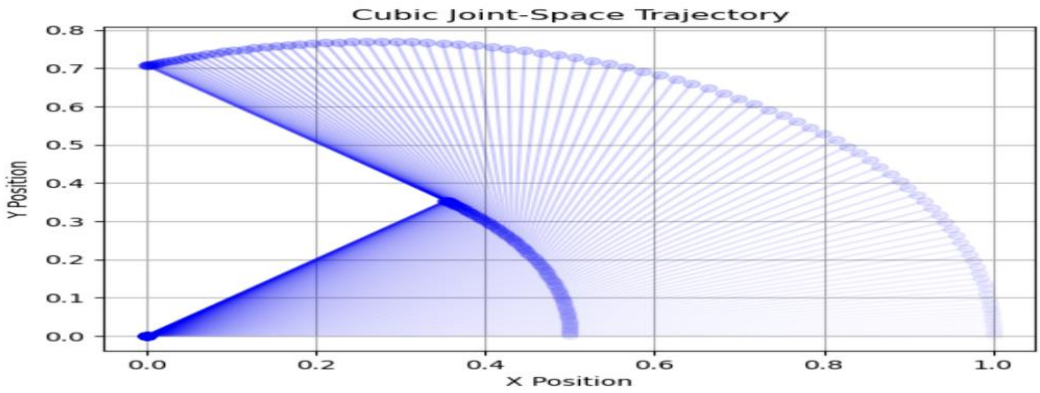
Plot derived using Optimization



Plot derived using Polynomial trajectory





Cubic Trajectory (Assignment 2): That trajectory followed a fixed cubic polynomial curve where velocity was forced to zero at the start and end. While smooth, it did not account for minimizing effort.

Optimised trajectory: The resulting plot was made using the minimized squared velocity. It finds the specific path that yields the lowest possible squared velocity sum, making the movement much easier.

Trajectory optimization significantly improves the quality of robotic motion compared to manually designed polynomial paths. By using a numerical solver like minimize, we can specifically target a cost function such as squared joint acceleration to ensure the smoothest possible transition. Optimization includes the constraints of the joints ensuring movement of robot well within the limits.