



Introduction to Robotics

Manipulation and Programming

Unit 2: Kinematics

ROBOT ARM AND WRIST

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Objective

- Understand what is robot arm and what is robot wrist.
- Understand the Degree of Freedom

Robot Arms

SECTION 1

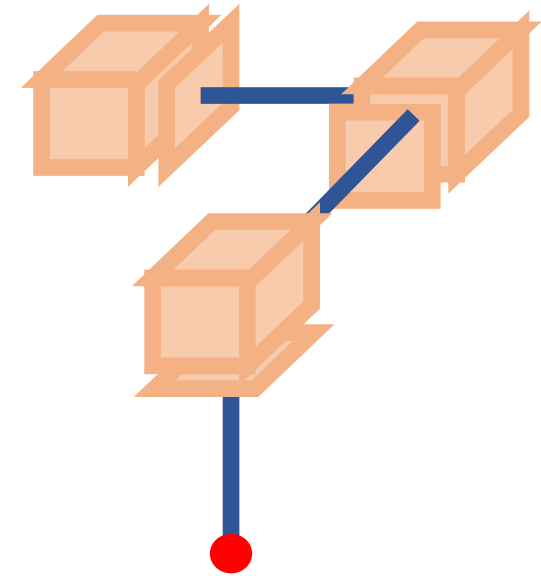
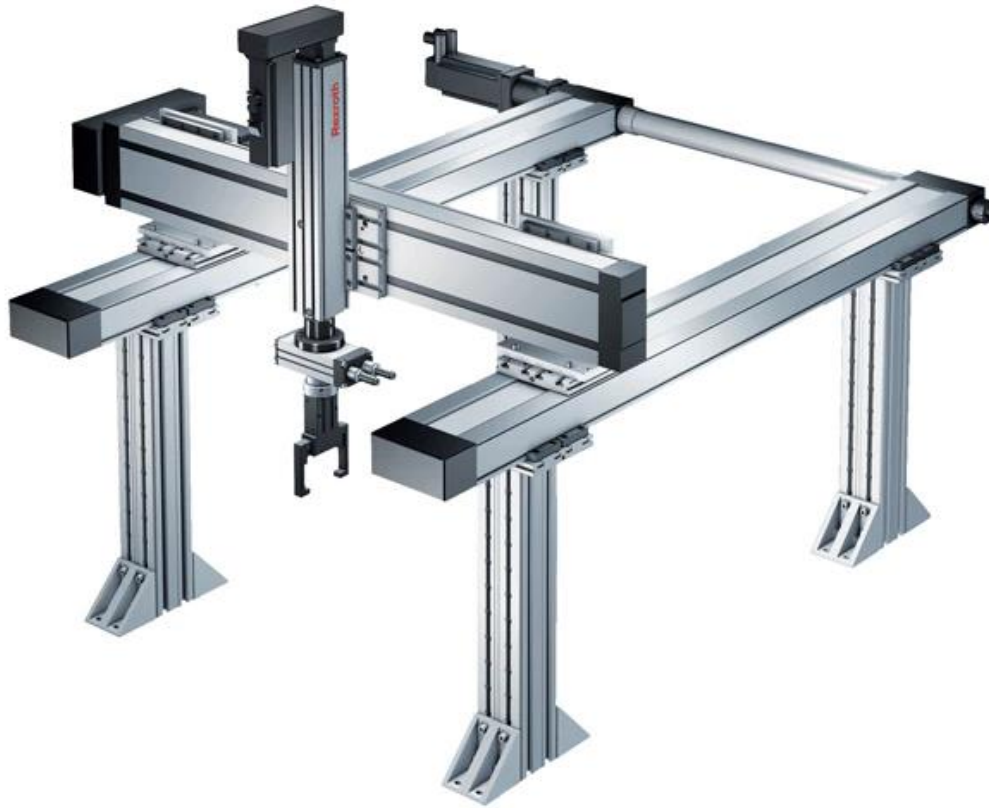


5 Types of Manipulators

- Cartesian
- Cylindrical
- Spherical
- SCARA
- Articulated

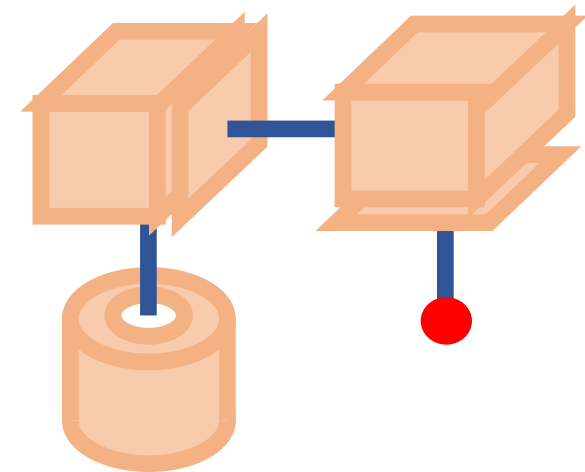


Cartesian



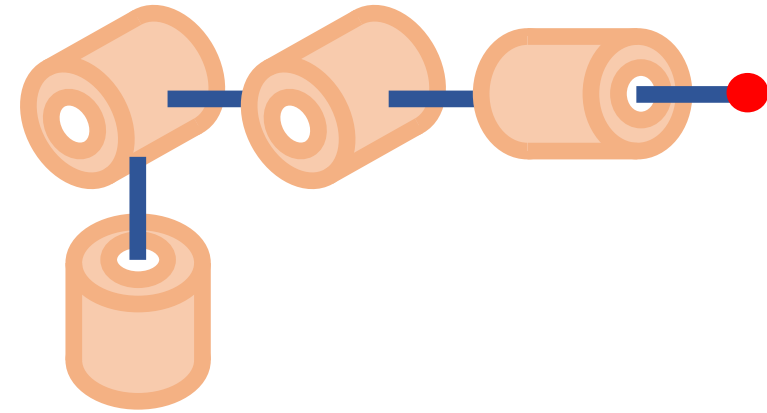


Cylindrical Manipulators



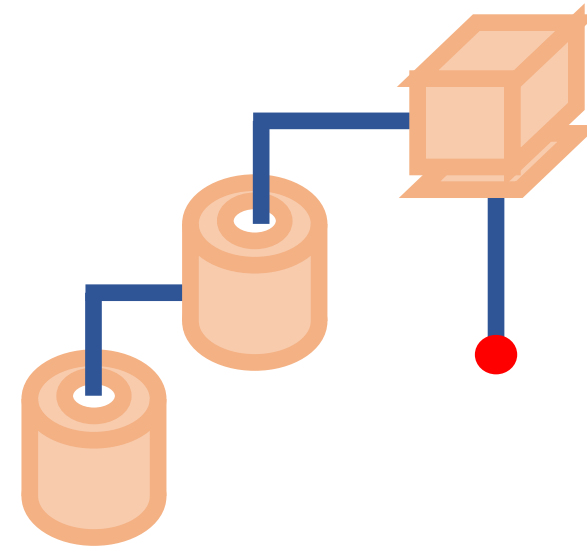


Spherical



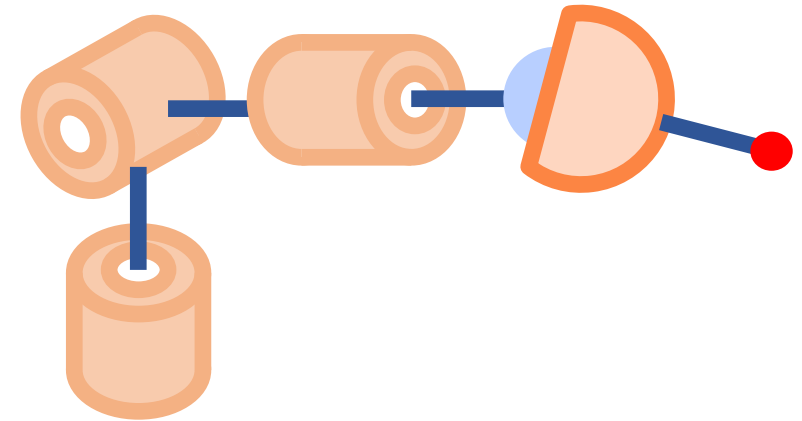


SCARA Manipulator





Articulated Manipulators



Robot Wrists

SECTION 2



6 Degree of Freedom Robots

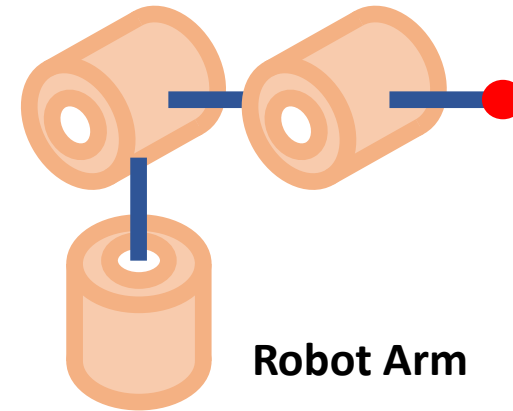
Why 6 degree of freedoms

Two major manipulators: Robot Arm and Robot Wrist

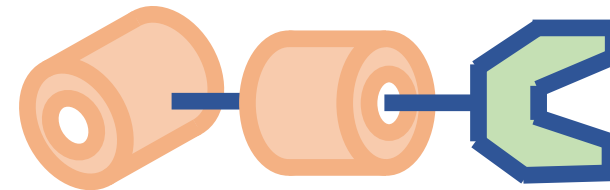
Combination of different Arm and Wrist



XARM



Robot Arm



Robot Wrist