

Robotics

Why study robotics ?

- 1) - Automation of Industrial tasks
- 2) - Testbed for Artificial Intelligence

- Some argue that for AI to exist it must be embodied in something that can sense aspects of the world and has actuators allowing it to act on the world

- without the ability to sense or act intelligence has no meaning

Robotics is an interdisciplinary subject requiring
Mechanical Engineering
Electrical / Electronic Engineering
& Computer Science

This course will concentrate on the computer science aspects of Robotics

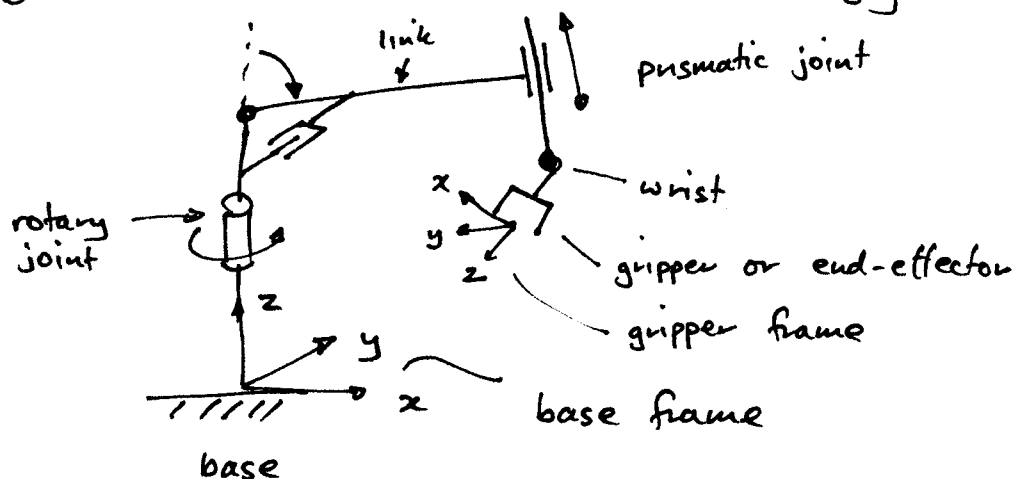
It is worth noting that many problems in computer graphics animation are related to robotics problems

- Much of the material in this course is relevant to animation.

Robotics

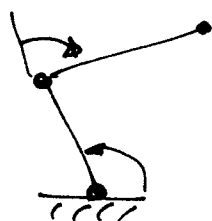
Introduction

Begin with some robot terminology

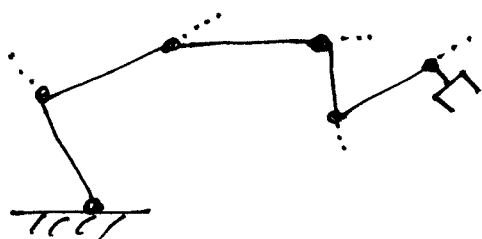


Examples

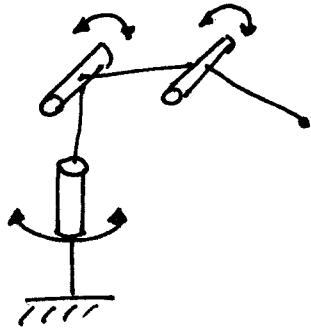
- a) A 2 degree of freedom (2 DOF) planar robot with rotary joints (a 2R planar robot)



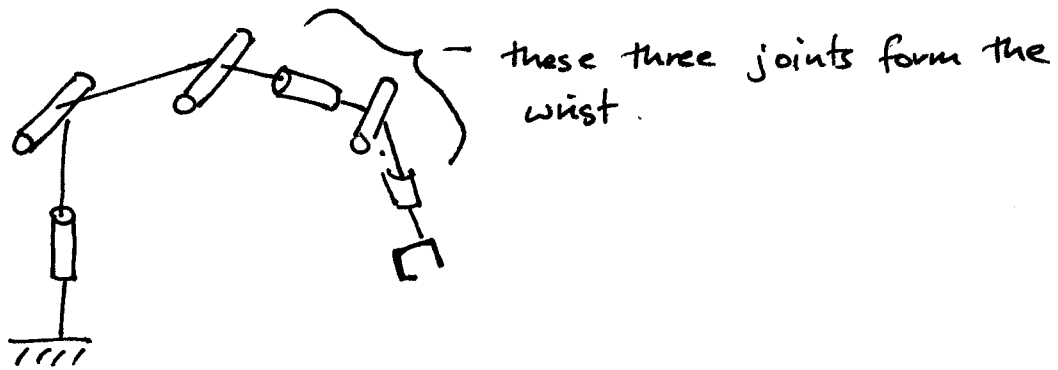
- b) A 6R planar robot



c) A 3R PUMA type robot without wrist



d) A 6R PUMA type robot with a wrist



e) SCARA type robot

