

Introduction to Robotics

CIS 716.5

17th February 2005

Work your way through the following exercises:

1. Build the Tankbot from the source book.
2. Enter the program `tankbot1.nqc` (just below figure 5-10 in the source book), download it to the robot, and run it (make sure the robot is on the floor before you switch it on ☺)
3. Write a program that switches both the robot's motors on, waits 5 seconds, then switches both motors off. Download the program to the robot, and run it.
4. Enter the program `tankbot3.nqc` (just after figure 5-13 in the source book), download it to the robot and run it.
5. Build a bumper from the sourcebook (there are several possibilities, choose one) and attach it to the robot.
6. Write a program that switches both the robot's motors on in a forward direction, and leaves the motors on until the bumper touches something. When the bumper touches something, the robot should stop. Download the program to the robot, and run it.
7. Write a program that switches both the robot's motors on in a forward direction, and leaves the motors on until the bumper touches something. When the bumper touches something, the robot should stop, turn to the right, and then start going forward again (until it touches something, when it should stop, turn away... and so on). Download the program to the robot, and run it.
8. Attach the light sensor to the robot.
9. Modify the program you wrote for 7 so that if the robot goes over a dark line (on the board Professor Parsons will have in the room), it stops. Otherwise the program should run as in 7.