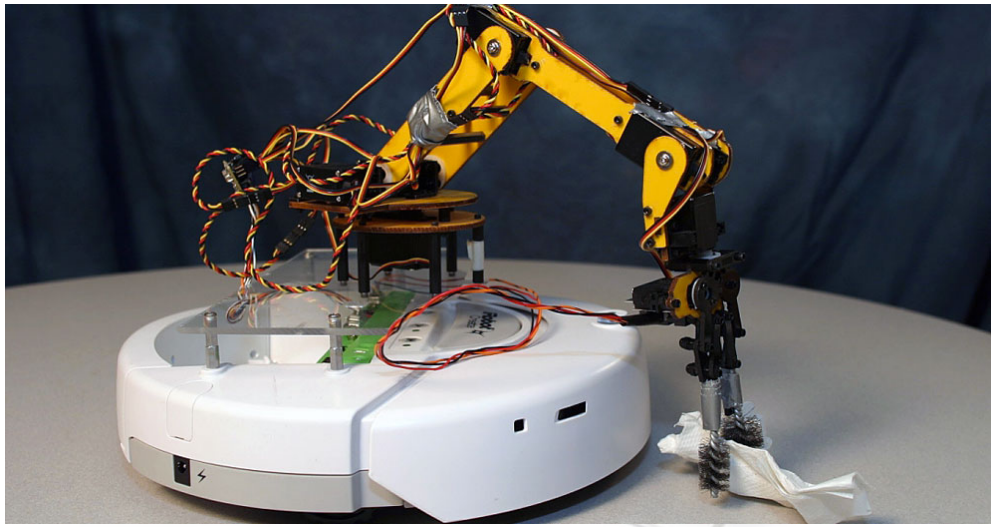

EMBEDDED SYSTEMS

Assignment 7

IROBOT

UCSD Masters Program

- Write a program to remote control your iRobot.
  - You should be able to type a command on your laptop or host system that the BBB receives via WIFI. The BBB then performs the command in collaboration with your iRobot.
  - The client should accept the following commands:
    - Drive
    - Turn: right and left by a fixed amount
    - Turn: right and left by a programmable amount
    - Read Sensor: dump sensor data to your terminal
    - Goto: move to a x,y point relative to the iRobot's current position
      - Ex. 20,100 should move the iRobot right by 20 steps and forward by 100 (think of the ground as a grid)
    - Return: return to the starting position before you started executing any commands.
    - Reset: reset the starting location (for use with the return command)
  - Commit the program to your team repository under the branch assignment7-irobot.
  - Demonstrate with a short video.

EXTRA CREDIT

UCSD Masters Program

- Mount your radar station to your iRobot.
- Write a program that demonstrates obstacle avoidance as the iRobot canvases the room.
  - This should be incorporated into your goto command
    - Ex. Issue goto 100,100 and, if in the course of moving there, the iRobot encounters an obstacle, it routes around it and continues on to its destination.
  - Commit the program to your team repository under the branch assignment7-irobot-ec.
  - Demonstrate with a short video.