Robotic Arm Lab

This is a lab to give students hands-on experience with how to create a robot arm. Two students will share one robot arm. Since the summer class is only three weeks long (4 sessions a week, 4 hours a day), see if you can assemble the arm in one day. If not, the longest time will be one week. Also, do the rest of the steps.

1. Follow the instructions to build the robot arm. All of the parts should be included. If not, tell me which ones are missing. What steps were difficult/unclear? What tools (screwdriver, long nose plier, transparent tape) were needed?

2. When the robot arm is built, test it using the remote control and with the computer. The remote control is not part of the robot and needs to be plugged into it. The computer requires a board and software for the robot to run. I can provide these for you. To use the computer software, plug in the board cable to the robot. Plug in the USB cable from the board to a USB port of the computer. Then, flip the switch on the board to "On". If the board is connected, the computer software should have a red square near the top. Click on any of the commands to get the robot arm to move that part. If some movements are not working, try troubleshooting to get it to work properly. It is not unusual if there are some problems.

3. If the robot is working properly, practice using the computer software in interactive mode. After that, try writing some scripts on the computer for the robot to execute. In scripting mode, use the commands like in interactive mode but the commands you do will be saved in a script.

4. Practice using the robot arm to pick up a ball. Balls can be provided. Do this with both the remote control and the computer. Then, use scripts to do this.

5. When done, disassemble the robot so new students can build it again.

If you want to try a second robot arm, there is a different one. Also, speech recognition can be used.

Thank you very much for taking the time to spend with the summer program.

Henry Lin
E-mail: hlin5@csub.edu
Phone: (661) 654-2825
Office: Science III Building Room 331

Hani Mehrpouyan
E-mail: hani.mehr@ieee.org
Phone: (661) 654-2837
Office: Science III Building Room 320