CSC714 Real-Time Computer Systems

Group 4 Project Progress

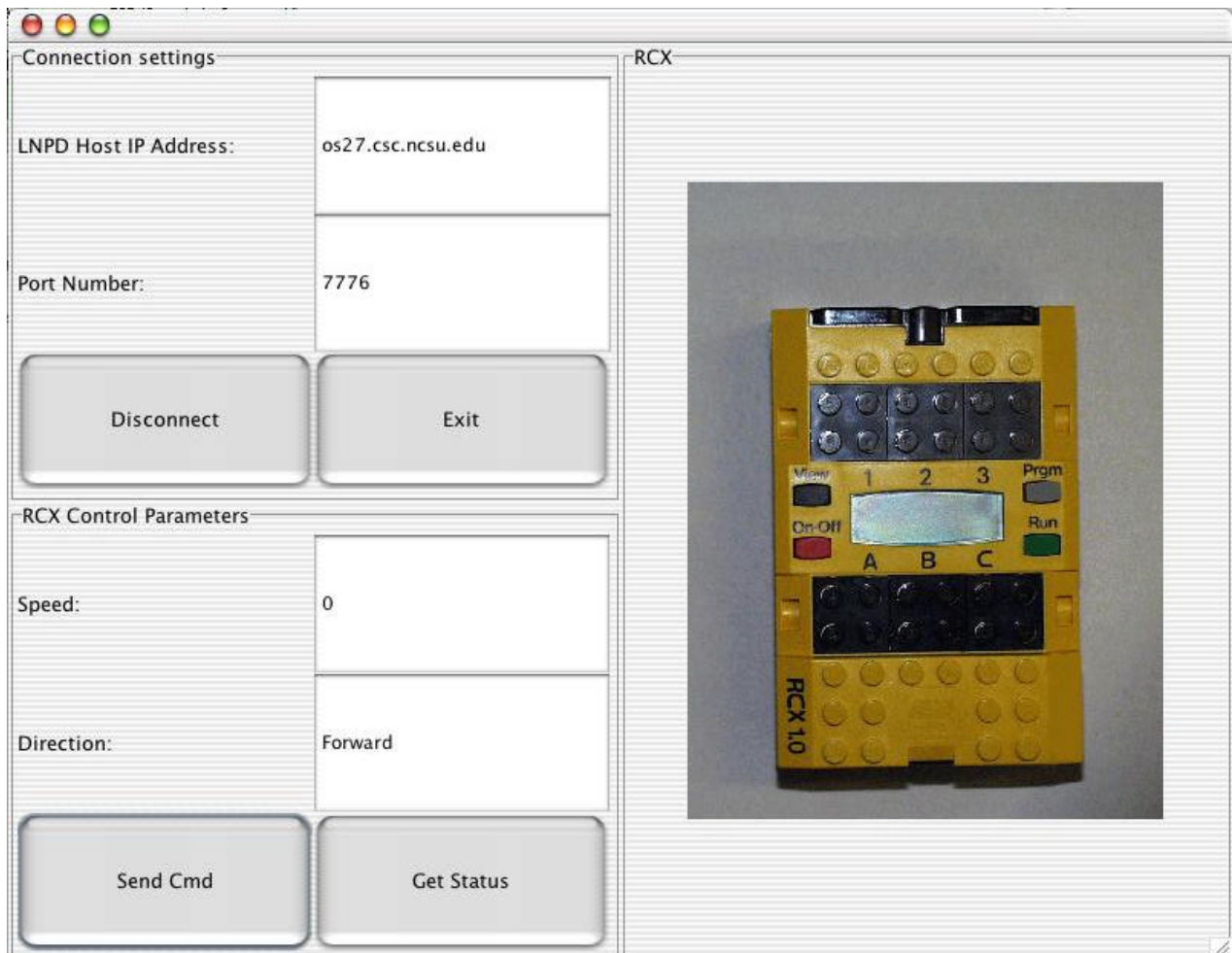# Remote Controller for Lego Mindstorm RCX

Group Member

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Issues solved previously:

- **Haihui&Xuejun: Downloaded and Installed LNPD under Linux 2.4.18**
  We downloaded and compiled LNPD code successfully. Though initially we had some difficulties to run the LNPD due to the limitation of access priviledges because LNPD will try to change some UART settings.
- **Haihui: Found and fixed a bug in LNPD:**
  It seems that LNPD can not configure 16550A UART chip correctly. In the original code, it recommends executing "setserial /dev/ttyS0 uart 16450" on the machine with 16550A UART chip. So later when LNPD initializes the TTY connection with RCX, it will treat 16550A chip as 16450 chip. It does NOT work with machines in the OS lab which have 16550A UART chips inside. It seems that we can skip this step in the LNPD code.
- **Haihui: changed project webpages with frames.**
  Now the project webpage seems more organized.

- **Haihui&Xuejun: Discussed the communication packet protocol**
  We discussed the control protocol between RCX and PC.

Issues solved Lately:

- **Haihui &Xuejun: Completed the design of control communication protocol**
- **Haihui: Implemented a prototype Java Swing GUI for the Remote Controller**
  This prototype JAVA Swing GUI program will let you specify the IP address and port number of the host which runs the LNPD and connect to it via TCP/IP. Please see the snapshot of the GUI below:

- **Xuejun: completed the design of legOS program for receiving control commands and sending current rover status**
- **Xuejun: implemented the modules for motor control, command receiving and tested motor control module**

Future Work:

- **Haihui: Improve the Java GUI and add more functionalities, possibly more graphics for animation.**
- **Xuejun: Improve the reactor program running inside RCX.**
- **Haihui & Xuejun: Further feasibility study about WebCam project**
  We will look into the WebCam project when we get the remote control project done.