

Introduction

The Iconic Interface system allows students to write programs for the Personal Exploration Rover (PER) without knowledge of robotics or programming languages. By using icons, students can tell the robot to perform simple or complex tasks, and write small programs to be re-run later.

Setup

System Requirements

To run the Iconic Interface on your computer, you will need:

- A Windows XP or better system.
- The Java Runtime Environment, version 1.4.2. or higher.
- An 802.11b-compatible wireless interface card. Most laptop computers with built-in wireless access are compatible with 802.11b.

Unpacking the Iconic Interface

The Iconic Interface program is distributed as a compressed Zip file. In order to run the program, you will need to unpack it. Windows XP will unpack the file if you right-click on it, then choose the “Extract All” option. The Zip file will expand into a new folder called “per-bin”.

Configuring Your Computer to Control The Robot

First, turn on the Personal Exploration Rover. The power switch is located on its right side. The rover should twitch briefly when you turn the switch on, and a green light on the switch should glow. There will be a pause of approximately sixty seconds, and then the rover's head should look up briefly, then move back to a level area.

Go to the **Start** menu and choose **Control Panel**. Select **Network Connections**, then choose **Wireless Network Connection**. Click on the “Properties” button. You will see a screen like Illustration 1.

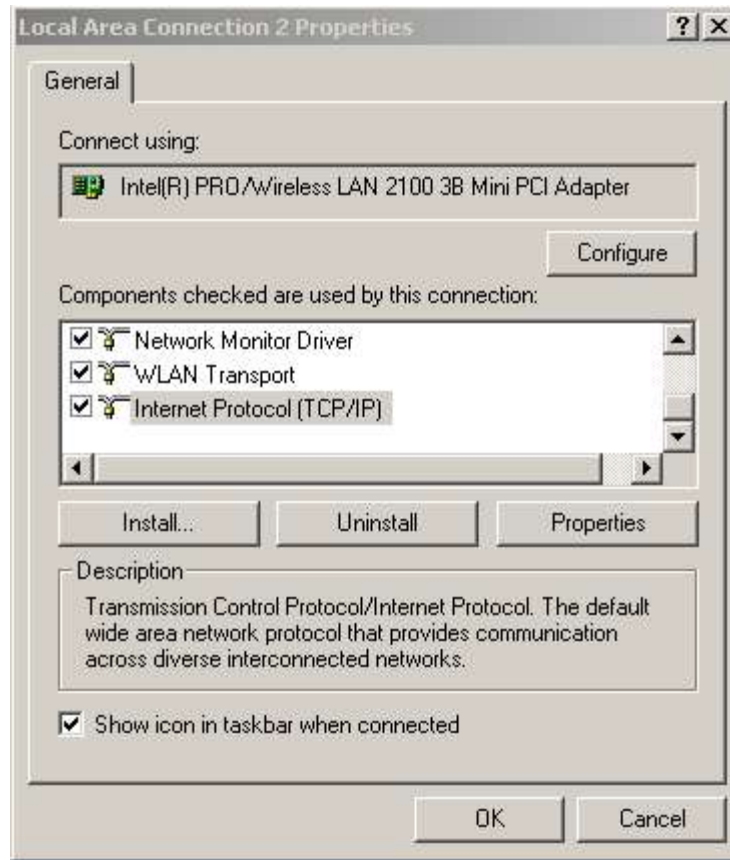
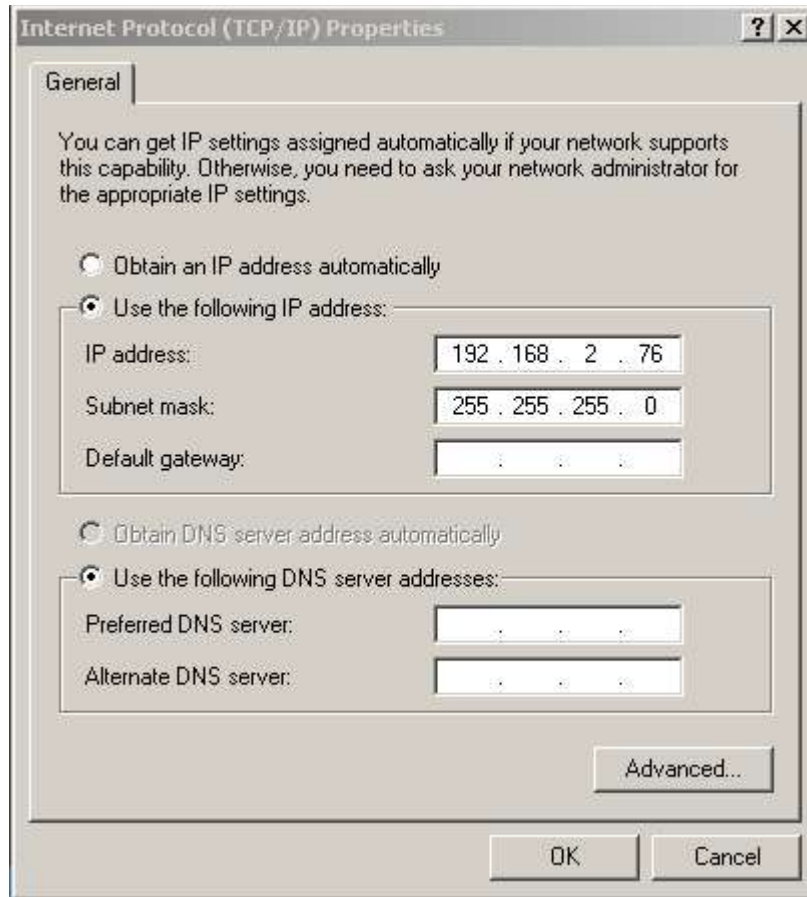


Illustration 1: Windows Network Control Panel

Choose the “Internet Protocol (TCP/IP)” component and click on “Properties”. You will see a screen like the following:



Make sure that your IP address starts with “192.168.2.”, and that your subnet is “255.255.255.0”.

Finally, click on the “Wireless Networks” tab in the Network Connections control panel. One of the available wireless networks should be “RoverNet”. Select this network and choose “Connect”.

Basic Use

To run the Iconic Interface program, open the “bin” directory located inside the “per-bin” directory. Inside this directory you will find a file called “runCMUPER.bat”. The “.bat” on the end of the filename may not be visible. Double-click on this file. After a brief delay, a window should appear which resembles Illustration 2.

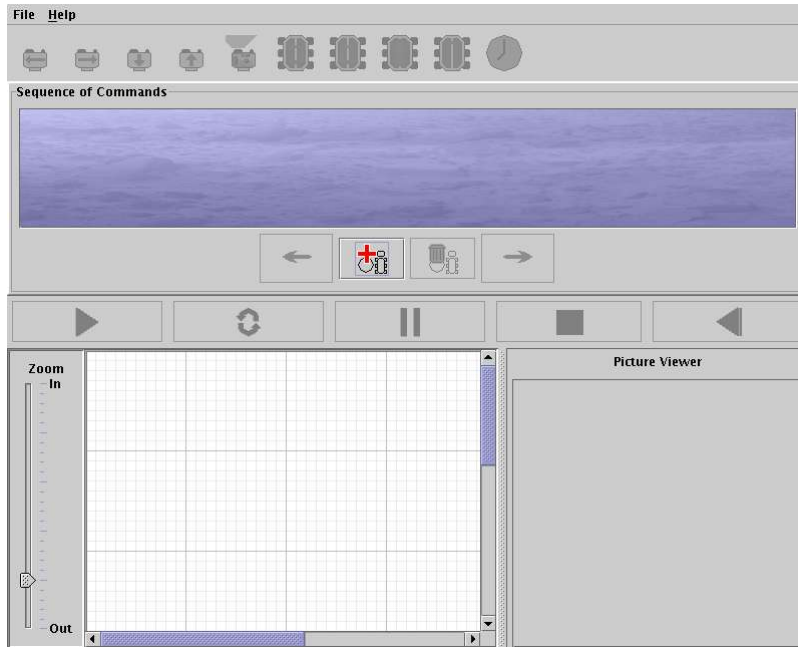


Illustration 2:

In order to command the robot to do anything, you must first enter a command. Click on the red “plus” sign in the middle of the screen, then click in the blue field in the middle of the screen. The results will look like Illustration 3.

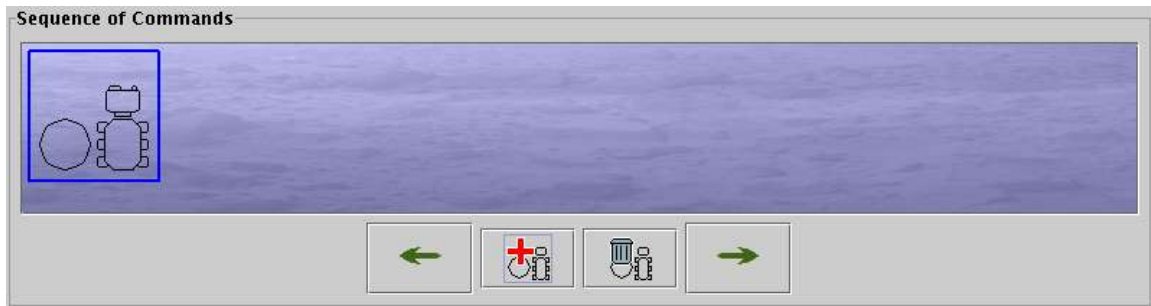
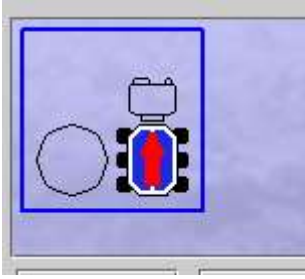


Illustration 3: After adding a command

Next, we're going to command the robot to move forward five inches. To make this command, click on the blue-and-red arrow in the upper middle of the screen, then click on the empty command we just created. A dialog box will appear with the message: “Enter the distance parameter for MOVE FORWARD action.” Click on the white box beside this message and enter the number “5”, then click the OK button. After you have clicked “OK”, your robot will look like this:



Now, click the triangular “play” button located in the middle of the window. The robot should move forward about five inches.