Comp 3980

Assignment #2

Intelligent Terminal Emulation

Due Date : October 24, 2007 - 0930 hrs

Work in groups of two (selected from your final project teams).

Objective:

To design and implement a Win32 terminal emulator program so that it emulates a specific terminal type when communicating with any application that requires terminal emulation.

Your Mission:

Write a Win32 program which will have full terminal emulation (TVI950, vt100, vt220, etc) as one of its options. You are required to provide a reasonably "user-friendly" GUI as part of the package. Keep in mind that this program will keep on getting enhanced as the term progresses, so design it with expandability in mind.

As part of the complete package provide the user with the options for changing modem and port settings, automatic number dialing, etc.

Background :

Intelligent terminals, besides being able to transmit and receive characters, have the capability to perform other more sophisticated operations:

- Transmit control character sequences when certain keys (including function keys) are pressed.
- Respond to control sequences by changing the display attributes of characters - i.e., make the characters appear dim, bright, underlined, etc.
- Respond to control sequences by initiating other actions such as positioning the cursor, clearing the screen, clearing a line or part of a line), etc.

Connection to a Linux server and running certain applications will require a terminal emulation implemented as part of a communication application. **HyperTerminal** and other commercial communications packages do just that to emulate several popular terminals.

You will be required to research out and obtain the emulation (control) codes used for each of the target terminals. For your function key codes a good suggestion would be to emulate the Hyperterm key functions. Another good test is to connect to a Linux machine as a tty terminal via the serial port. Then run any application ("**Pine"** for example) that uses terminal emulation and test your emulator.

To be Submitted:

1. State transition diagrams of the terminal emulator functions including pseudo code (design work).

2. Printed program listing of the program.

3. A disk containing the C/C++ source code and executable version of your program.

NOTE: You are required to demonstrate your emulation in the lab on the day the assignment is due.

Marking Guide:

FSMs & Design Work:	15
Code Quality:	5
Working Emulation:	70
Instructions/User Guide:	10
Total:	100