Lab 6. Networking Final Project

Introduction

This project will be the culmination of our study of the TCP/IP Protocol Suite.

Outcomes Addressed

- understand what networking protocols are and how they are specified
- understand the protocols of the internet
- be able to write applications using socket connections
- understand the implementation and operation of Internet services

Lab Activity

Consider a network device such as a router or a switch. Such devices often allow connection via the network to make settings or monitor performance. Certainly Telnet/SSH is one possible option which would provide the user a console-like interface. Alternatively, a web interface might be easier to many users to connect.

However, for such a simple situation, it is unlikely you would have the resources to run a complete web server, such as Apache. Therefore, it is not uncommon to "roll your own" webserver with specific, limited functionality.

Create a simple webserver that will:

- Listen on port 8888
- Work with any current browser
- Respond to the following operations / URLs:
    - GET /index.html
        - Returns an HTML form with an assortment of HTML controls the the user can interact with (minimally, two checkboxes, one radio button group, and one text field). The form should have an action to POST back to this same server to a resource called "update."
    - POST /update
        - This resource will read the information submitted by the user and echo this information back to the user.

The detailed design of the webserver is up to you, but it must be programmed against a basic TCP socket API. That is, you may not use **ANY** pre-made http webserver class or object.

You may serve the index.html file hardcoded or via a file on disk.

You will need to research HTML forms, and there is much information available on the Interweb.

Deliverables

1. Demonstrate working server during lab in Week 10 (due at beginning of lab).

2. Generate a short write-up describing the design. Include comments relating your experience with this project and suggestions for improvement. Include any glaring deficiencies of your approach. Also include full user instructions. Include full source code in pdf report. Make sure it is properly formatted and readable.
3. Submit report and all source code in a single pdf file. Submit via link on instructor's syllabus.
4. Submit a zip file with all source code and support files. The submitted source should be buildable.
    - Do not include pdf in zip file.
5. Pdf and zip submission is due prior to lab in Week 10. Pdf and zip must be submitted prior to demonstration.
6. All source code must be properly documented for full-credit.

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