Chapter 6

Practical assignment 6

6.1 Background

Many personal computers receive e-mail using the POP3 protocol *(Post Office Protocol 3)* and send mail by using the SMTP protocol *(Simple Mail Transfer Protocol)*

The SMTP protocol (RFC 821) is a rather old protocol (it dates from 1982) but is still commonly used — in some cases with a few extensions. The basic operation of the protocol is explained in your textbook, but you will have to read parts of the RFC to understand the operation better. Try to grasp at least the following commands:

```
HELO
MAIL
RCPT
DATA
QUIT
```

The SMTP server usually listens to TCP port 25.

Note that SMTP servers often place restrictions on who may use it to send mail or to whom mail may be sent via it. If neither the sender, nor the recipient has anything to do with the server one often gets the message

```
We do not relay messages
```

This is to prevent cowards who want to send junk mail via another organisation's computer from hiding their identities. If you use a connection provided by an ISP, you may be able to to use the SMTP server of your service provider. If you have a Gmail account, you may be able to use Google's mail server (depending on settings in your account). However, more and more email relays insist on

using encrypted communications, as well as require one to log on. (This applies to Google's mail relays.) Implementing encryption (or even the need to sign in) pushes this assignment beyond the amount of work expected for this assignment. The recommended approach is therefore to set up your own email server on a system such as the one described in Chapter B. Note that such servers often default to installations that also prevent them from relaying email. You will have to read your email server's documentation and/or search the various Internet forums to determine how to enable email relay. Be careful that you do not host an open relay on the Internet, though. However, in the typical setup you will use, it is more likely that your email server will not talk to other email relays and you will only be able to send email on your local server, or local network. This is fine for this assignment — you do not need to be able to communicate with other email servers on the Internet to complete this assignment. There are many simple email clients for Linux and Unix that will enable you to read email on your server. This assignment is about sending email, and you have to write the software to send the email; you are not allowed to use an existing email client for sending the email as specified in this assignment.

Mail that is transferred via SMTP may, in principle, consist of any text. (See RFC 821 for more details.) However, if you want to use headings (such as *Subject*), look at RFC 561 (from 1973!). (These old standards often refer to protocols that no one knows anymore — just ignore such references.)

6.2 Your assignment

In previous assignments you created a system that used multiple-choice questions to test a person's subject knowledge. Modify that such that it emails the test-taker's results to an appropriate email address.

If you use assignment 4 as the basis, ending the test on the web browser may offer a button that may be clicked to email the results. You may also use the Telnet-based solution and somehow add a command (at the end of testing) to email the results in a similar manner. (Obviously you have to make provision for entering your email address so that the results will be sent to the correct recipient.)

You have to be able to show that the message indeed reaches the target mailbox.

As usual, remember to implement sending email by using native SMTP commands rather than any pre-existing mailing functionality.

6.3 Assessment

A working program will be awarded 8 out of 10. To earn a higher mark your program has to do more than just the basics - in particular should it demonstrate that you understand something of the SMTP or emails representation RFCs.