



Rochester Institute of Technology

Department of Computer Science

4003-420/4005-740 -- Data Communications
and Networking I

Winter 2004-05 Course Project

Part III

The goal of the Part 3 project is improving security of data communications and information assurance in your design.

Your part 3 activity should consist of two parts:

- a)** feasibility study of different possibilities of improving security (you should consider at least 6 but you are welcome to investigate more). You may compare different options like encoding with symmetric keys or private-public keys or different measures.
- b)** implementation of at least three of the options considered in part a)

In part a) you should offer and study various security measures, which might include but are not limited to:

1. access control, for example, password protection to some specific, security critical files on the server, or assigning different access rights to various users, or introducing password login for entering the game, etc.,
2. encrypting communications for sending information and/or passwords with different protocols,
3. advancing the protocols applied in order to make them more reliable and secure
4. applying and installing a specialized software like firewalls, intrusion detection systems, etc.
5. conducting specialized tests in order to improve software assurance from the security point of view, for examples tests to detect vulnerabilities
6. modifying your code pieces which might be vulnerable to the attacks
7. anything else what you want to offer to improve security

In part b) you should implement at least 3 measures studied in part a). The grader will appreciate if you diversify your approaches, e.g. password access control **and** advancing protocols **and** something else. You may include some possible countermeasures to prevent possible attacks on your software. In this case you have to describe those possible attacks in your report.

You have to modify your Part 1 code to include these security measures but if you had security measures implemented in Part 1, you may count them in.

You have to submit:

1. Your report including
 - your feasibility study (part a) and
 - a brief description of your software developed in Part 3 project
2. Your modified code (include everything, not just modifications). You have to indicate modified parts in your comments.

Submission deadline is Thursday, February 10, 11.59 pm sharp .

Submission instructions: by email to icss420@cs.rit.edu

Good luck!