CMSC 414 Spring 2001
Group Course Project Description

This document describes the requirements for the group course project for CMSC 414 (Spring 2001).

Your task is design and implement an Internet voting system. It is highly recommended that you use a web based interface to ease the development of a user interface.

The next section details the specific requirements for the project. Finally, we conclude with deliverable instructions.

1 Requirements

The following are the requirements for the group project:

1. You may implement the project using any technology desired.
2. Your implementation must use the network to communicate. Your design will require multiple servers, but you may locate the servers on the same machine for ease of debugging/testing. NOTE: Communications should still be via the network, e.g. http://localhost.
3. Your design and implementation must meet the following requirements:
   (a) Only authorized voters can vote.
   (b) No one can vote more than once.
   (c) No one can determine for whom anyone else voted.
   (d) No one can duplicate anyone else's vote.
   (e) No vote can be changed without detection.
   (f) Every voter can be certain their vote has been accurately taken into account in the final count.

   You should also make attempts at mitigating/detecting collusion amongst the trusted third parties of your system.

2 Deliverables

The following are the deliverables for the project along with their due dates.

1. **Design Document.** Your design document will include the following sections:

(a) *Introduction.* You must introduce and explain the problem you are trying to solve.

(b) *Assumptions.* You must explicitly state your assumptions.

(c) *Design.* You must explicitly describe your design such that a classmate could implement it, i.e. you must show and explain the format of your messages, and you must show the message flow (think of the Bob and Alice diagrams in class).

(d) *Security Analysis.* You must perform a security analysis of your design. This analysis **must** include an attack tree.

(e) *Testing methodology.* Explain how you plan on testing the design and the implementation.

(f) *Conclusions.*

The hardcopy of your design document is due April 5, 2001 at the beginning of class. *NOTE: Your implementation may deviate from your design document, but you MUST document the reasons for the deviation in the source code.*

The design document is an extremely important part of this project. The project itself is relatively simple given the information provided in class.

2. **Demonstration.** You must provide a demonstration of your system to the Professor on May 18th. A sign-up sheet will be provided during class to select available times.

3. **Source code.** You must email your source code as a WinZip or tar file to cmsc414@cs.umd.edu by midnight of May 18, 2001. The file name must include the name of one of the group members, e.g. smith.zip.

4. **Testing results.** Explain how you tested the system and show transcripts of the tests. This description must be placed in an electronic file and included with the source code archive above before submission on May 18.