King Fahd University of Petroleum & Minerals
College of Computer Sciences and Engineering

CSE555: Protocol Engineering

Spring 2004 (Term 032)

Term Project Guidelines

Saturday, February 28, 2004

This course requires significant effort on the part of students to define a term project, work on it, and write a term paper about it. Students are encouraged to select general areas of their work according to their research interests. The objective of this assignment is to allow the students to practically apply the protocol engineering techniques and guidelines that they learn in this course.

Areas of Interest:

A number of broad areas of application for communication protocols were discussed during introductory lectures. Students can choose a communication protocol for modeling and verification purposes from the list of selected protocols provided in a separate document.

A number of RFCs can be found from IETF archives that can be used as an authentic source of informal specification of communication protocols. Students are encouraged to base their projects on one of these RFCs to enhance relevance for a wider audience.

Project Proposal:

Project proposals are due on **Monday, March 8, 2004** in class. It should be a one page summary of your proposed project. It should include some background information to motivate the work and description of the approach to carry out this work.

Project Progress Report:

Project progress reports are due on **Saturday, April 10, 2004** in class. It should be a two pages summary of your progress. This should include the work accomplished and any problems encountered. A meeting with the instructor will be scheduled during the same week to discuss your progress.

Format of the Term Paper:

Term papers are due on **Monday, May 10, 2004** and should be written as a professional-quality technical paper. Thus, the paper should be self-contained. It should start with an abstract and include a list of references. Look at any IEEE transactions paper to understand the format of references and other material. Paper should not exceed 20 single-sided pages

with at least 11 point font and at least 1.5 line spacing. You can choose your favorite word processor to produce this paper.
It is very important to have a thorough understanding of the related research work. Study and cite all related papers. Do not simply copy the conclusions drawn in a paper; use your own assessment and intuition to verify the results and make your own judgment. An effective review of related research is not one that mentions everyone working in a particular area of research but it is one that classifies the area appropriately and discusses pros and cons of each class to justify one's own research.

Class Presentation:

Project presentations will be scheduled during the last two weeks of classes. Each presentation will be 30 minutes long. Each presenter needs to do the following:

1. Prepare slides covering introduction to their protocol, rationale for their study, review of related work, verification model in PROMELA, and discussion of results. (No more than about 20 slides).
2. Send an abstract of the talk to the instructor (sqalli@ccse.kfupm.edu.sa) at least one day before the talk.
3. Demonstrate the working PROMELA model to the instructor before presentation or during presentation.

Demonstration:

Demonstration is part of the 50% of the technical content of the final report. Partial credit will be given depending on the level of effort and degree to which the final model can be validated using spin (or any other tool selected by the student).

Checklist for Term Project:

This checklist will be used by the instructor to evaluate and grade each term project. It is provided to help the students to finalize their term project and paper writing work.

- ✓ Protocol validation model written in PROMELA
- ✓ Error-free demonstration of validator with correctness criteria
- ✓ Class presentation
- ✓ Term paper clearly motivates the rationale of conducted study
- ✓ Term paper includes review of related research
- ✓ Term paper includes clear description of protocol elements
    - Services and environment
    - Vocabulary and format
    - Procedure rules
- ✓ Term paper specifies the level of abstraction/detail used
- ✓ Term paper specifies procedure rules using PROMELA
- ✓ Term paper specifies correctness criteria in PROMELA
- ✓ Results of modeling and simulation are clearly discussed
- ✓ Term paper is organized and presented professionally

Grading:

Term paper is due on **Monday, May 10, 2004** and will be graded as follows:

Term project proposal (due on **March 8, 2004**)	**10%**
Term project written and oral progress report (due on **April 10, 2004**)	**10%**
Clearly stated background and rationale of work	**5%**
Breadth and depth of the critical review of related research	**10%**
Technical content (tools, model, verification, analysis) & demonstration	**50%**
Paper organization and quality of presentation	**15%**

Late submission policy:

All assignments (e.g., project report) submitted after the due date will have 10% of the assignment maximum grade subtracted for every late day. If the submission is one week late, the grade for the assignment will be 0. (e.g.; if you get a grade of 80% in one assignment submitted 2 days later than the due date, you'll only receive a grade of 60%)