

BIL342 Experiment III

Hacettepe University Department of Computer Science and Engineering

BIL342 Programming Laboratory Experiment III

Subject:	Unix Socket Programming and Java
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Submission Date:	28/03/2005
Deadline:	13/04/2005
Programming Language:	C and Java

AIM

The aim of this experiment is to give students the ability to cope with the basic concepts of socket programming on Linux and to develop Java programming skills.

PROBLEM DESCRIPTION

You are asked to write a C program for java applets to play a card game called Cooked! The game software that you are asked to implement includes two components: the *server*, that is implemented with C under the Unix/Linux environment; the *client* which is implemented using Java. Because the interaction with the players will be taken into account in this component it should also include a well designed GUI.

The server should follow these rules:

- a) The server will manage several distinct games at the same time.
- b) Each game should have a unique name.
- c) To connect to a game, a unique nickname is required for each player.
- d) 2, 3 or at most 4 players can take part in a game.
- e) A user can either join or start a new game. If he/she starts a new game, he/she will be the moderator of the game at the same time.
- f) The moderator can start the game any time if the game has more than 2 participants.
- g) Cards will be given out randomly by the server.
- h) When a player gets 151 points than the game is over.
- i) Points are calculated as follows:
 - a. Junior: 1 point
 - b. As: 1 point
 - c. 10 of Diamond: 3 points
 - d. 2 of Clubs: 2 points
 - e. Owner of the maximum number of card: 3 points
 - f. Cooked: 10 points
 - g. Cooked of Junior: 20 points
- j) The server will take the port number and the debugging options as arguments.
- k) Server will run in the background and write the debug/warning messages to the syslog.

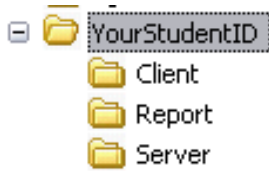
The client is responsible to interact with the game server on behalf of the player. The client should get from the user its nickname, the port and the name of the game server. If the nickname is in use, it should ask for

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an other one. During the sign-up procedure, if the user is the first one to join the game, he/she will be considered as the starter of the game, consequently the moderator. Otherwise he/she will be the participant.

NOTES

1. You are free to use any java libraries, bitmap files for card pictures etc. found on the Internet provided that you mention it in your report.
2. The soft copy of this paper can be found at <ftp://ftp.cs.hacettepe.edu.tr/pub/dersler/Bil3XX/Bil342/04-05/3>
3. You are asked to give a Makefile with your both server and client programs.
4. You are asked to provide your report in HTML or PDF format.
5. You are asked to follow announcements made to Courses.Bil342 newsgroup which is located at <nntp://news.cs.hacettepe.edu.tr>.
6. You are asked to describe clearly your communication protocol in detail within your report.
7. Your report and programs must be submitted at the same time.
8. **Java SDK 1.4.02** and **glibc 2.3** will be used for grading. Therefore be sure that programs you are submitting are compatible with these versions.
9. You should submit your work and report on a floppy with the following structure:



10. E-mail submissions are not accepted.
11. At the submission your experiments will be checked for common errors. Works with this kind of errors may be refused for grading. Do not leave everything to the last minute.
12. Class attendance is compulsory. 10 points will be deducted from the student grade in case of any absence.
13. Office hours will be held on Wednesday afternoons.
14. Please send any additional questions to Courses.Bil342 newsgroup.

Good Luck