

Network Programming (Java) CSCI-6961

Spring 2001

Course: CSCI-6961
Lectures: Tuesday, Friday 12:00-1:20 LOW 3015
Home Page: <http://www.cs.rpi.edu/~hollind/javonetprog/>
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TA: ?

Texts: Java Network Programming, 2nd Edition
Elliotte Rusty Harold
O'Reilly
ISBN: 1565928709

The WWW.

Grading: Class Participation: 15%
Homework/Programming Projects : 35%
Term Project: 50%

Course Home Page: The course home page will include all programming assignments and class handouts. Some class notes and material related to specific topics will also be made available through the home page. Hardcopy of any class handouts will be provided only on request.

Homework and Programming Projects: All homework and programming projects must be done individually unless explicitly stated as a group project. Once programming assignments are made, the course home page will contain information on what is expected for project submission and directions for electronic submission.

Cheating will not be tolerated. Any duplicate or near duplicate project submissions will result in a grade of zero for the project for all students involved and may result in a failure for the entire course. You may *discuss* projects with other students, but sharing of code in any form is not acceptable (this means that looking at another student's code or showing your code to another student is **not** permitted). If you need help with a project - send mail to javanetprog@cs.rpi.edu ! Please contact the instructor if there is any part of this policy you do not understand.

Course Overview: This course was originally intended to be a seminar course. Although the number of students taking the course has grown too large for a true seminar course, I hope that we can have the *feel* of a seminar course. There will be some traditional lectures during the first few weeks of class, these will make sure that everyone has some basic level of understand of the Java programming language and of Networking. The remainder of the class meetings will include discussions of high-level network programming concepts, code examples, case studies and group exercises. It is expected that all students will participate in these in-class activities.

Java: Dave is not a Java expert! There will be other people presenting an overview of the Java language, and going over some Java specific network code in class.

Topics: Below are listed some of the topics we will discuss, in roughly the order we will discuss the topics.

- The Java language.
- Networking and the OSI Reference Model
- TCP/IP
- Internet Protocols (HTTP, SMTP, FTP, POP, TFTP, LDAP, ...)
- Client/Server
- Java sockets programming.
- The WWW (URLs, URIs, HTTP, HTML, MIME, XML, CGI, Applets, Servlets, ...)
- Security
- Server Design (iterative cs. concurrent. threaded, pre-threaded, ...)
- Java URL class
- Protocol Handlers
- Remote Method Invocation
- CORBA

Projects: There will be a number of assigned projects that ensure that each student is exposed to the implementation details of a number of different kinds of Java programs and network applications. These projects will be done individually. Term projects will be group projects selected by the students – a written project proposal will be part of this project. In all cases we expect quality software – including comments and a text document that provides an overview of your code. We will provide an example project with the level of commenting and a text overview for you to use as an example.

Term Project Topics: It is important to think about what area of Network Programming you want to focus on! Your term project will be a significant project, and will be much of the learning experience in this course. Try to think about the term project early in the course – look for topics that you find interesting and would like to explore further. Part of the term project will be an oral presentation to the class – this is your chance to teach the class something new (something we did not cover in class discussions), so keep in mind that your term project must include something beyond what we discuss in class.