

Project: TiniTorrent

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1 Project Mechanics

The objective of the project in this class is to have a practical experience of developing a mini peer-to-peer system. In this project we will begin from scratch (from two simple codes `concurrentserver.c` and `client.c`) and develop a BitTorrent compliant peer-to-peer program called TiniTorrent. I will explain the technologies and concepts in the class. This parallel project will guide you through the practical part of these concepts.

You will use department's Linux machines to develop the code. However, you will also use it over GENI to complete all the **Experiment** part of the assignment where peers can run over many places in the internet. User interface can be text based. However, any graphical user interface will earn you 10% bonus.

1.1 Phases

To make our goal manageable, we will do the implementation in three phases distributed over the next few weeks. At the end of first phase we will develop the basic TiniTorrent. In the second phase we will develop it to be full compliant. The third phase is the challenge phase and will give you opportunity to attempt novel experimental ideas. Research students can skip to third phase from first.

1.2 Groups

The projects can be performed as individual or as a group of two members. Each member of the group should assume a very specific responsibility. But both must understand and be ready to answer anything about the entire project. All reports will be individual. In the last page of each project report you (and your project met) will include a confidential **Group Member Evaluation Table** indicating the contribution of the members (who did what) and a rough percentage workload distribution. This Table will remain confidential and will not be disclosed to your group members. Your total score will be a combination of the scores of the group project and your report.

1.3 Submission Process

You should create a directory called "TINITORRENT", and under it TWO subdirectories "TINITORRENT/SOURCE", "TINITORRENT/DATA001". Ever you need to run more than one peer on one host. use directories "TINITORRENT/DATA002", etc. to separate the peers.

In SOURCE you should keep all C and header files, makefile to compile them, and a README file explaining user interface (start/stop/use) for your program. In the DATA001 you should keep the sample *.torrent and *.tracker, *.init (and any other configuration files), and the uploaded/downloaded files. The top level TINITORRENT directory should contain your PROJECT-REPORT.doc file and an HTML file "INDEX.HTML". It should have pointers to a "README" file, all source code files, all configuration files and the PROJECT-REPORT.doc file. For submission (remove all binaries before zipping) zip the entire TINITORRENT directory and email it to TA.

1.4 Development Environment

You will use department's Linux environment for development. Finally you will use GENI facility for experimentations, and evaluation. We will use department's Linux environment for development, experimentations, and evaluation and GENI to obtain worldwide performance date.

1.5 Demonstration & Grading

At the end you will be required to demonstrate the project over GENI facility for grading. You will be required to demo each of the assignments steps. Projects successfully completed in time will be eligible for class demonstration and will receive automatic 10% bonus.