CS 451/551 Project 4: Threadpool Steganography (version 2020.01)

April 2, 2020

DUE DATE: April 28 at 11:59PM

1 Introduction

This document first provides the aims of this project, followed by a discussion of its background. It then lists the requirements as explicitly as possible.

1.1 Aims

The aims of this project are as follows:

- To write a program using a threadpool.

- To reason about the performance of a program using a threadpool vs. a different implementation.

1.2 Functionality

You should reproduce the functionality of Project 02/03 but using a Threadpool.

Graduate students must also benchmark the Threadpool version against your previous version.

2 Grading

Undergraduates:

- An earnest effort was made to complete the project.
  - **20 points**
- Program compiles.
  - **30 points**
- Your program can properly encode messages using multiple threads.
  - **20 points**
- Your program can properly decode messages using multiple threads.
  - **20 points**
- Invalid PPM files in input directories do not affect your program.
  - **10 points**
- You provide a benchmarking report.
  - **20 points extra credit**

Undergraduates:

- Program compiles.
  - **30 points**
- Your program can properly encode messages using multiple threads.
  - **20 points**
- Your program can properly decode messages using multiple threads.
  - **20 points**
- Invalid PPM files in input directories do not affect your program.
  - **10 points**
- Benchmarking report.
  - **20 points**