# Assignment #4 – Parallel Shakespearean Monkeys

## Introduction

This assignment aims to consolidate your understanding of several topics taught in this course, such as:

- Object oriented programming and design
- Threading and graphical user interfaces
- Parallel programming techniques

and apply these to a funny heuristic problem, a simple form of genetic programming: recreate any text by selectively breeding generations of ”random monkeys”.

## Background

Good background information can be found at the following URLs:

1. ShakespeareMonkey@Home

   http://www.shiffman.net/projects/shakespearemonkeyhome/

   A good readable prose description of our task. We can almost take it as a high-level pseudo-code for the sequential version.

2. Solving the Shakespeare Million Monkeys Problem in Real-time with Parallelism and SignalR

   http://www.hanselman.com/blog/SolvingTheShakespeareMillionMonkeysProblemInRealtimeWithParallelismAndSignalR.aspx

   Includes a browser based live demo which connects to an ASP.NET service via a fast SignalR channel. The live demo is interesting and its speed compelling. However, we have to wait until next stage to understand ASP.NET and SignalR…

3. Genetic Programming: Evolution of Mona Lisa

   http://rogeralsing.com/2008/12/07/genetic-programming-evolution-of-mona-lisa/

   Discusses a similar technique, extended to 2D images (instead of 1D strings). Interesting, but not directly relevant for this assignment.

4. Infinite monkey theorem

   http://en.wikipedia.org/wiki/Infinite_monkey_theorem

> Related background information, but not no direct impact on this assignment. The same problem, “solved” by pure random monkeys, with no breeding.

Unfortunately, due to tight time constraints, we will just develop a desktop application with a simple GUI, without attempting to support this with a conceptual discussion (essay).

**Specs**

Precise specs will be soon posted.