

COMP8005

A1

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Disk Contents

```
+v1
  Documentation.pdf
  +bin
    - A1
  makefile
  +obj
    - main.o
    - primedecompose.o
  +src
    - main.c
    - primedecompose.c
    - primedecompose.h
  +tests
    - runtests.sh
    - (log files)
```

Man Pages

A1

User Manual

A1

NAME

A1 - A prime factoring program, whose sole purpose is to burn processor cycles for testing.

SYNOPSIS

A1 [-t | -p] [-w workers] [-c count]

DESCRIPTION

A1 creates a given number of workers, either using threads or processes, and each worker then factors all numbers from 1 to count and outputs the results to a .tmp file in the working directory.

OPTIONS

- t Use worker threads
- p Use worker processes
- w Specify the number of workers
- c Set to factor all numbers from 1 to this

COMPILING

For compiling from sources, use the given makefile and run
\$make all

RUNNING

A1 can be invoked by itself, or using the provided runtests shell script

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NAME

RunTests - A shell script for invoking A1 repeatedly and collecting performance data.

SYNOPSIS

Runtests [workers | ops] <count_constant> <variable_min> <variable_max>

DESCRIPTION

Runtests will invoke A1 through /usr/bin/time and collect the performance data into a csv file.

OPTIONS

--server hostname

-s hostname

Specify the hostname or address of the btftpd server that is to be connected to

workers | ops

Set RunTests to vary either the worker count, or the number of operations performed, while keeping the other constant

Count constant

The number of either worker or threads (opposite of specified in arg 1) to be used for all executions

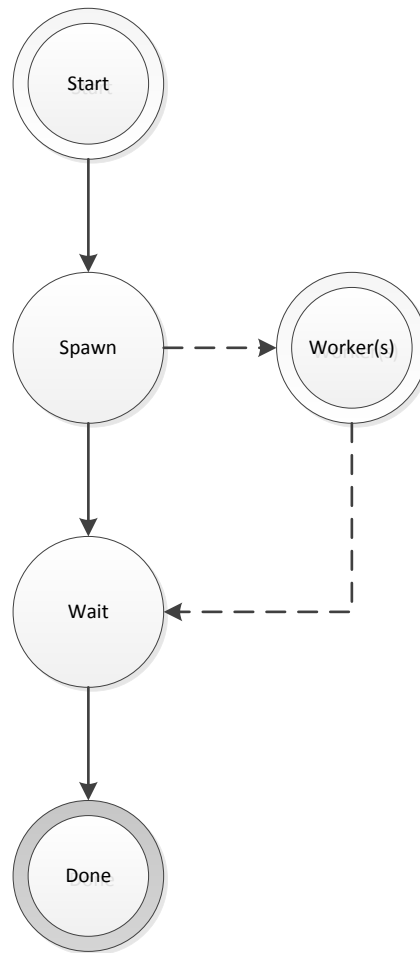
Variable min & max

The range to test the varying parameter through

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Finite State Machine



Pseudo-Code

Start

Parse user arguments

If invalid

 Print error

 Exit

Spawn

Select either threads or processes from args

Spawn set number of workers

Worker(s)

Create output file

For 1 to count

 Factor current number

 Write results to file

Close file

Exit

Wait

Wait on all created workers to complete

Exit