Assignment 3 Report

COL334

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Contents

1 Simple Program using TCP sockets

This part of the assignment was done successfully. Though a seperate code is not provided for the same, but the whole assignment is build on this concept.

2 Downloading the File in parts

The file is divided into chunks of pre-determined size and then these chunks are downloaded one by one. Finally, the content of each chunk is concatenated to form the original document. The MD5 sum check is applied to ensure the integrity of the file.

3 Parallel TCP connections

In this part of the assignment, the program was further modified to support parallel TCP connections. The chunks are made synchronized by the use of locks.

Initially, the download time kept on decreasing as we increased the number of parallel TCP connections. After a while, this effect is no longer observed due to various overheads of intialising threads and processing them. The program also plots the graph for various parallel TCP connections. While using cellular network, 'vayu' seems to be faster than 'norvig'.

My program dynamically uses various TCP connections i.e. if a connection is fast, it is used to download more data. The download time decreases if a slow server is mixed with a fast one compared to downloading only from the slow server. This tells us that the bottle-neck lie in the througput of 'norvig'. For cellular network in India, 'vayu' seems to be faster than 'norvig', although this is not the case when we use Google Colab.

4 Resilient to disconnections

The Program was changed by inserting try-catch statements to detect any disconnections. Further, it tries to reconnect again and again until it finds a connection.