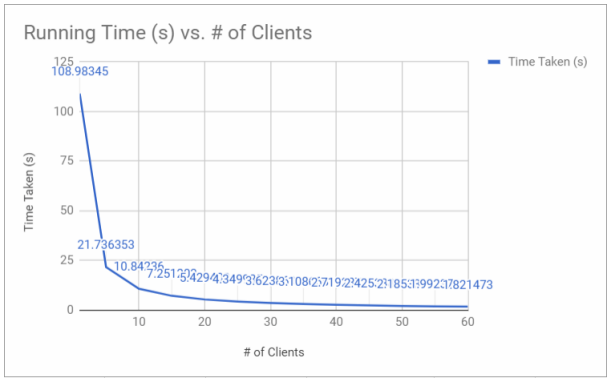
Programming Assignment #7 Report

April 28, 2018

Design:

The program for this assignment has been modified to provide communication across the network. A class called NetworkRequestChannel is created to replace the regular RequestChannel class. It has three constructors. One is to create a client side local copy of the channel, and connects to the server. Another creates a server side local copy of the channel that is accepting connections at the given port number. The last constructor just sets the socket fd. The class has the function cread(), where it uses the recv() function to receive a message. It also has the function cwrite, where it uses the send() function to write to the channel. The function send_request() has the same functionality as in the previous programming assignments, where cwrite() is called first, and then cread(). The files client.cpp and dataserver.cpp were both modified to use the NetworkRequestChannel instead, and to also accept command-line arguments for name of server host, port number of server host, and backlog of the server socket.

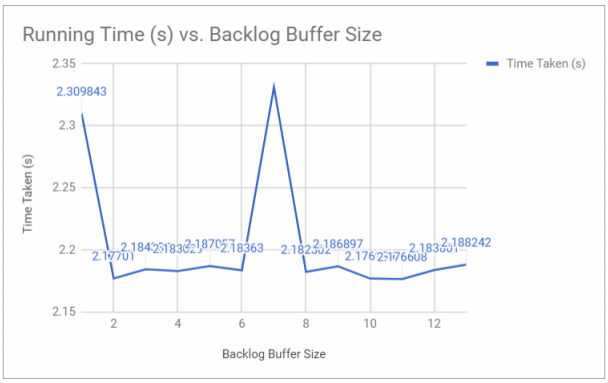
Performance of the system with varying number of clients:



Analysis:

As the number of clients increase, the time taken to process the requests decreases significantly at first, and slowly decreases for the rest of the time.

Performance of the system with varying sizes of the backlog buffer on the server:



Analysis:

There is no recognizable trend when increasing backlog buffer size. Hence, the backlog buffer size does not have any impact on the performance of the program.