

# CPSC 441 Assignment Design Document

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## **What my Program executes once the shutdown() method is called:**

When the shutdown method is called by ServerDriver.java (upon successfully reading “quit” from the console) a Boolean flag called ‘shutdownRequested’ is set to true. The main while loop nested inside WebServer.java’s run method continually checks for client connection requests but is programmed (via the timeout set on its socket that listens for said client connection requests) to periodically check this Boolean flag to see if it has since been set. After the shutdown method has been called then the next check of ‘shutdownRequested’ will return true at which point the program will perform following:

The main server thread will iterate through an Array list storing each of the client threads (responsible for handling each individual client’s requests). Each of these threads will have a Boolean flag called ‘processing\_GET’ which is accessed from the main server thread via a public accessor function called ‘isProcessing\_GET’. The main server thread will check each client threads ‘processingGet’ flag. If it returns true then the client thread is currently busy serving a client GET request, since the GET request is a non-persistent HTTP GET request the main server thread will simply wait for the client thread to finish before moving on to checking the next client thread. If, on the other hand, it returns false then the client thread is just waiting for a client GET request, the main server thread then accesses this client thread’s client socket and closes it which triggers a ‘SocketException’ which is handled in turn by the client thread throwing a custom ‘WebServerClientProcessException’ which triggers the client thread to begin shutting down, the main server thread waits for this shutdown to complete before moving on and checking the next client thread. This continues until all client threads have been shutdown at which point the main server thread exits and the web server program terminates.

