

NS3 Summative Exercise 1: Mark Sheet

Marks are awarded as follows:

General	Appropriate use of functions to structure the code		2
	Correct indentation and formatting of code		2
	Correct Makefile		2
Basic networking	Use of socket(), bind(), listen(), accept()		4
	Reading into a buffer without overflow		2
	Use of close()		2
Parsing the request	Correctly parsing request ("GET filename HTTP/1.1")		2
	Correctly parsing and checking the "Host:" header; mark deducted for assuming header in fixed location		3
Sending a response	Correctly structuring response and header lines; building response without buffer overflow		2
	Correctly formatted "200 Ok" response		2
	Sending a "404 Not found" response when needed		2
	Detecting errors; sending "400 Bad request" response		2
	Generation and use of the content-type header		3
Multiple sequential connections	Accepting and processing multiple connections on each socket		1
Multiple requests per connection	Reading the entire HTTP request into a buffer, without overflow, rather than reading until client closes the connection (check for "\r\n\r\n" and use of realloc())		4
	Looping to process multiple requests per connection		1
	Use of fstat() to determine response size		1
	Sending a correct "Content-Length:" header		1
Multiple connections in parallel	Correct use of pthreads API functions; use of correct type for the thread function		3
	Passing connection file descriptor to threads; avoiding the race condition with the next accept() call		2
	Setting up a thread pool		3
	Use of a queue or bounded buffer to pass data between threads; correctly protected by mutex		2
	Use of condition variable to signal availability of data		2
Base mark:			50

Marks are deducted for the following general issues:

Compiler errors or warnings		2
Excessive abstraction; over-engineering; poor design		4
Use of global variables		2
Abuse of the type system		2
Reinventing standard library functions		2
Buffer overflows		2
Use of unallocated memory/using memory after free()		2
Missing error handling		2
Code duplication and repetition		2
Deductions:		20

Mark (out of 50), converted to percentage and translated to band:

Penalty _____ :

Final Band: