

ECE 151
Assignment 2
Due Tuesday April 22

1. Describe the code required for a multithreaded server process, such as a multiplayer game server. How does the main thread, which handles network communication, coordinate with the worker threads that handle request processing and disk accesses?

2. Consider a system in which the processing required for each game player action consists of:

network message processing	3ms
player action processing	6ms
thread dispatching overhead	1ms
waiting for disk accesses	30ms

 - a) How many actions per second can be handled by a unithreaded server with no thread dispatching overhead?

 - b) How many actions per second can be handled by a multithreaded server?

 - c) How many worker threads should be provided?

 - d) Under very heavy load conditions, what will happen if you increase the number of worker threads still further? Compare this with what will happen if you do not increase the number of worker threads.