Theory Assignment 3 | Processes

Exercise 1 -

What are the benefits and drawbacks of having a process that spawns threads, instead of spawning other processes?

Exercise 2 -

Would it make sense to limit the number of threads in a server process?

Exercise 3 -

In which scenarios is best to have a single-threaded server implemented as a finite state machine instead of a multi-threaded server?

Exercise 4 -

Cloud computing platforms hosting a very large number of computing resources (e.g. AWS) heavily rely on Virtual Machines (VMs) despite the fact that virtualization adds performance overhead to bare metal machines. List and motivate some of the reasons why using VMs is still desirable both by cloud providers and users.

Exercise 5 -

Imagine a Web server that maintains a table in which client IP addresses are mapped to the most recently accessed Web page. When a client connects to the server, the server looks up the client in its table, and if found, returns the registered page. Is this server stateful or stateless?