Quiz4 - INT-330 Quiz 4

Applied Operating Systems (Shenandoah University)

Which of the following is not a Chrome browser process type?

Sandbox

Question 2
1 / 1 pts

Which system call enables the creation of a child process by a parent process?

fork();

Question 3
1 / 1 pts

Which approach is most appropriate for remote process communication?

Sockets

Question 4
1 / 1 pts

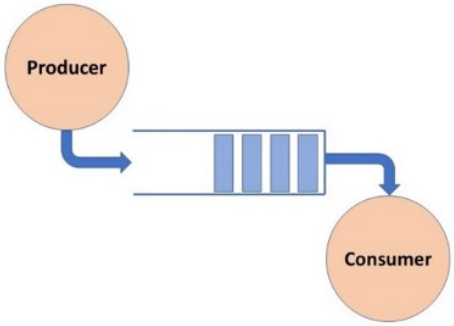
The QuickTime is an example of:

Plug-in process

Question 5

0 / 1 pts

For the Producer-Consumer Problem shown in the below figure, which option is incorrect:



The receiving process is allowed until the message is sent by the sending process

Question 6

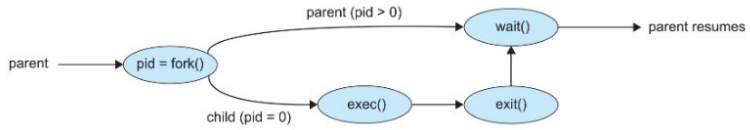
1 / 1 pts

Parent-child relationship is necessary for named-pipe communication.

False

Question 7
3 / 3 pts

Explain the following figure.



Your Answer:

This diagram explains the parent and child process. A parent-process needs to do another job before resuming, so a child-process is created using fork(). Parent-process is put in wait list and child-process has started its process using exec(). Once child-process is complete, child-process is terminated. Since child-process is complete, parent process can proceed and resume its process.

The parent process creates a child process and goes into wait state

The child process executes, and then issues the system call exit to inform the parent that it finished its execution.

The parent process resumes its execution

Question 8
3 / 4 pts

A parent process may terminate the execution of children processes for the following reasons. Explain any two reasons with examples.

- Child has exceeded allocated resources
- Task assigned to child is no longer required
- The parent is exiting, OS does not allow a child to continue

Your Answer:

- Child has exceeded allocated resources: In order for child process to do a job for the parent process, a specific amount of processing memory is allowed for child process to proceed. The child process can be terminated if the child process starts to take up more memory that is allowed. Example: 10 child processes are created, each using 100 mb, a total of 1gb space. One process starts requiring 110mb to do its job, which starts putting the strain on other processes, the parent process will kill that process so other 9 can process on time accordingly. In term of video play, if video projection on screen is consuming all process, that is putting strain on the audio file, resulting is audio lag, the system will break the program.

- Task assigned to child is no longer required: A parent may terminate the processing of its child process when it feels that the assigned job is no longer needed. This would be to free up space so other child processes can start to run. If a parent process has to install 10 files into 10 folders, a child process will kick in and create those 10 folders. Once 10th folder is created, it is no longer needed to go to 11th folder, so the parent process will terminate the child-process.

Question 9

2 / 2 pts

Processes may cooperate for computation speedup. Explain with examples.

When a task is about to run and we need it to run faster, it has to be broken into subtasks. This way subtasks can run parallel. Since they will run in parallel, they will finish faster. Google Chrome is great example. It runs 3 processes. Browser, Renderer and plug-in. With this way, browser runs faster and internet search results faster.