Lecture Assignment 9

Due date: 20-Nov-2023

Spondon Sayeed

110101278

Select two questions based on your preference!

How to retrieve the list of the following type of processes:

a. Orphans

To identify orphan processes, you can query the child processes of the init process.

Ex: ps -eo pid,ppid,cmd | awk '$2 == 1 {print $1, $3}'

b. Zombies

To identify zombies, you can query the process table for processes with a status of 'Z'.

Ex: ps aux | awk '$8 == "Z" {print $2, $11}'

c. Blocked

You can identify them by analyzing the process state information in the process table.

Ex: ps aux | awk '$8 ~ /D/ {print $2, $11}'

d. Ready

use tools like ps or system calls like getrusage to get information about processes in the ready queue.
Ex: ps aux | awk '$8 ~ /R/ {print $2, $11}'

e. Running

You can identify them by examining the process state information or using tools like ps or top.

Ex: ps aux | awk '$8 ~ /R/ {print $2, $11}'

How can a process have a grandchild? Explain by an example.

A process can have a grandchild by forking twice. After the initial fork, both the parent and the child processes can independently fork again, creating a grandchild for each. Each process will have a unique process ID (PID) and its own address space.

```
int main() {
  pid_t child_pid, grandchild_pid;
  child_pid = fork();
      if (child_pid == 0) {
      grandchild_pid = fork();
```

```
            }
return 0;
}
```