Operating system concepts

Hệ điều hành (Trường Đại học Sư phạm Kỹ Thuật Thành phố Hồ Chí Minh)

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Hệ điều hành

Đỏ: Sai

Vàng: chưa biết

Xanh: Đúng

Consider a system with 3 processes with the following parameters:

Process	Arrival Time	Burst time
P1	0	10
P2	2	20
P3	6	30

Assuming there is no context switch at time 0, if using SRT cpu scheduling algorithm, how many times context switch.

Select one:

○ 1

○ 3

○ 4

◉ 2

Interrupt vector is ___

Select one:

○ None of the mentioned

○ a unique device number that is indexed by an address

◉ an address that is indexed to an interrupt handler

○ a unique identity given to an interrupt

Low context switch operating costs _____ degree of multiprogramming in the system

Select one:

○ increases

○ unaffects

○ Decreases

Top layer in the layered scheme of operating system is

Select one:

○

Operating system

○

Software

○

Hardware

○

User interface

Consider a system with 4 processes with the following parameters:

Process	Arrival time	Burst time
P1	0	6
P2	0	8
P3	0	7
P4	0	3

If using the SJF process scheduling algorithm, the average waiting time of the processes is:

Select one:

○

8

○

7

○

3

○

6

The first program that is executed when the computer is switched on is called

Select one:

○

bootloader

○

bootstrap program

○

boot program

○

Initializer

The set of instructions needed for booting, that is, to load the OS in RAM is known as initialier.

Hãy chọn một:

○ Đúng

○ Sai

Which file keeps commands to execute automatically when OS is started ?

Select one:

○ autoexec.bat

○ any batch file

○ command.com

○ config.sys

Process is also known as

Select one:

⦿ thread

○ light weight process

○ the rest of the options are not correct

○ heavy weight process

○ **Clear my choice**

In UNIX, the return value for the fork system call is _____ for the child process and _____ for the parent process.

Select one:

○ Zero, A nonzero integer

○ Zero, A Negative integer

○ A nonzero integer, Zero

○ A Negative integer, Zero

Inter-Process Communication

Select one:

○ allows processes to communicate and synchronize their actions using the same address space

○ The rest of the options are incorrect

○

allows processes to synchronize only their activity without communication

○

allows processes to communicate and synchronize their actions without using the same address space

The term "aging" refers to

Select one:

○

gradually increase the priority of long-awaited processes in the system to overcome the infinite process blocking

○

initialization of a process in a multilevel queue without a response.

○

letting the process sit in memory for a certain amount of time so that it can accurately estimate the number of pages needed.

○

keeping track of how a page is swapped in/out memory according to the LRU page replacement algorithm

What is Dispatch Latency ?

Select one:

○

the entire time used by the processor

○

the time taken by the processor to write a file to disk

○

the rest of the options are all wrong

○

the time lost by the dispatcher to stop one process and start another

What is Inter-Process Communication?

Select one:

○

the rest of the options are all wrong

○

communication between 2 threads of the same process

○

communication between two processes

○

communication within the process

The performance of the Round Robin algorithm is highly dependent on

Select one:

○

The magnitude of the time quantum

○

data export/import time of the process

○

CPU time required by the process

○

size of the process

From the system's viewpoint, the operating system acts as an easy interface between the user and computer system and presents a friendly environment wherein the user can work efficiently without worrying about any configuration or details of the hardware.

Hãy chọn một:

○ Đúng

◉ Sai

Considering 4 processes arrive at the system at the same time 0, the burst time is as follows:

Process	Burst time
P1	53
P2	8
P3	68
P4	24

If using the RR(q = 20) scheduling algorithm, the average waiting time is

Select one:

○

70.75

○

67.5

○

66.75

○

66.25

In Unix, what system call creates a new process?

Select one:

○

release

○

fork

○

create

○

new

The CPU transferring from one process/thread to another is called

Select one:

○

context switch

○

task switch

○

the rest of the options are correct

○

process switch

Match the following pairs of data:

Blocked → Ready **Wake up**

Ready → Running **Dispatch**

Multi-tasking systems place more than one job/program/task in the main memory of the system. The jobs here are of a single user working on the system. The jobs are scheduled by time-sharing technique.

Hãy chọn một:

○ Đúng

○ Sai

With _____ only one process can execute at a time; meanwhile all other process are waiting for the processor. With _____ more than one process can be running simultaneously each on a different processor.

Select one:

○

Multiprogramming, Multiprocessing

○

Multiprogramming, Uniprocessing

○

Multiprocessing, Multiprogramming

○

Uniprogramming, Multiprocessing

READY is the state of a process

Select one:

○

when process is using CPU

○

when a process cannot run until a certain task is completed

○

when the process is scheduled to run after execution

○

the rest of the options are wrong.

In a time-sharing operating system, when the CPU time allocated to a process expires, what state will the process go from running to?

Select one:

○

Suspended

○

Blocked

○

Ready

○

Terminated

As a virtual machine manager, operating system provides a layer on the actual hardware on which it performs the tasks of the user. And to the user, it seems that all the work done is by the hardware. In other words, there is an illusion created by the operating system that there is a virtual machine which is performing all the work.

Hãy chọn một:

○ Đúng

○ Sai

Which word does not indicate the state of a process?

Select one:

○

the rest of the options are all wrong

○

running

○

ready

○

finished

○

new

If the resource is always preempted from the same process, | starvation ▼ | can happen

Starvation

Match the following pairs of data:

Round Robin	Answer 1	Time sharing ▼	Time sharing
LIFO	Answer 2	Stack operation ▼	Stack operation
Scan	Answer 3	Disk check ▼	Disk check

Restricting the child process to a subset of the parent's resources prevents any process from _____

Select one:

○

overloading the system by using a lot of secondary storage

○

under-loading the system by very less CPU utilization

○

current activity of the process
current activity of the process

○ overloading the system by creating a lot of sub-processes

○

crashing the system by utilizing multiple resources

The state of a process is determined by

Select one:

○

the next operation to be performed by the process

○

the last activity of the process

○

current activity of the process

○

the operation just performed by the process

.The child process can _____

Select one:

○

be a duplicate of the parent process

○

never have another program loaded into it

○

cannot have another program loaded into it

○

never be a duplicate of the parent process

Consider a system with 4 processes with the following parameters:

Process	Arrival Time	Burst time
P1	0	8
P2	1	4
P3	2	9
P4	3	5

If using the SRT scheduling algorithm, the turnaround time of P3 is

Select one:

○

24

○

26

○

23

○

25

In UNIX, each process is identified by its _____

Select one:

○

None of the mentioned

○

Process Identifier

○

Process Control Block

○

Device Queue

The advantage of the virtual machine OS is that same hardware is being shared to run different execution environments, that is, multi-programming and time-sharing can be on a single machine.

Hãy chọn một:

○ Đúng

○ Sai

A parent process calling _____ system call will be suspended until children processes terminate.

Select one:

○

exit

○

fork

○

wait

○

exec

Consider a system with 3 processes with the following parameters:

Process	Arrival Time	Burst time
P1	0	5
P2	1	7
P3	3	4

Thứ tự hoàn thành 3 quy trình theo thuật toán RR (q = 2) là

Select one:
○
P1, P3, P2

○
P2, P3, P1

○
P1, P2, P3

○
P3, P1, P2

The child process completes execution, but the parent keeps executing, then the child process is known as _____

Select one:
○
Body

○
Dead

○
Orphan

○
Zombie

BIOS is a software that consists of input-output functions. These functions are low-level routines that the OS uses to interface with different I/O devices like keyboard, screen, ports, and so on.

Hãy chọn một:
○   Đúng
○   Sai

[aging ▼]   saves low-priority processes from resource starvation Aging

Cascading termination refers to termination of all child processes if the parent process terminates _____

Select one:
○
Abnormally

○
Normally or abnormally

○
Normally

○

None of the mentioned