

Exam 2 Terms

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Blocking receive The receiver blocks until a message is available.

Blocking send The sending process is blocked until the message is received by the receiving process or by the mailbox.

Bounded Buffer Assumes a fixed buffer size. The consumer must wait if the buffer is empty and the producer must wait if the buffer is full.

Cascading Termination If process terminates then all its children must also be terminated

Child Process New process created

Communication Link If process P and Q want to communicate they must send and receive messages so a communication link must exist between them. This link can be implemented in direct and indirect communication.

Context Switch Switching the CPU to another process by performing a state save of the current process and a state restore of a different process.

Cooperating Processes If it can affect or be affected by other processes executing in the system.

CPU-bound process generates I/O requests infrequently, using more of its time doing computations.

Data Section Contains global variables.

Degree of Multiprogramming The number of processes in memory, which is controlled by long term scheduler.

Device Queue List of processes waiting for a particular I/O device

Direct Communication Each process that want to communicate must explicitly name the recipient or sender of the communication.

Heap Memory that is dynamically allocated during process run time.

I/O-bound process One that spends more of its time doing I/O than it spends doing computations.

Independent Processes A process that cannot affect or be affected by other processes executing in the system.

Indirect Communication the messages are sent to and received from mailboxes or ports.

Interprocess Communication Allows process to exchange data and information.

Job Queue consists of all processes in the system.

Long-Term Scheduler Selects processes from ones that are kept for later execution

Medium-Term Scheduler Sometimes is advantageous to remove processes from memory and thus reduce the degree of multiprogramming.

Message Passing Communication takes place by means of message exchanging between the cooperating processes.

Non-Blocking receive The receiver either a valid message or null.

Non-Blocking send The sending process sends the message and resumes operation

Parent Process The creating process

Process A program in execution

Process Control Block Contains many pieces of information associated with a specific process including these : Process State, Program counter, CPU registers, CPU scheduler info, Memory management info, accounting info, I/O status info

Process Dispatch A process is selected for execution so it is out of ready queue.

Process Identifier (pid) unique identifier

Process Mix Mix of I/O bound and CPU bound processes

Process Scheduler selects an available process for program execution on CPU

Process State Defined in part by the current activity of that process

Process State: New The process is being created

Process State: Ready The process is waiting to be assigned to a processor.

Process State: Running Instructions are being executed

Process State: Terminated The process has finished execution.

Process State: Waiting Process is waiting for some event to occur (such as an I/O completion or reception of a signal)

Program Counter Value that represents the current activity

Ready Queue Processes that are residing in main memory and are ready and waiting to execute

Shared Memory (for Communication) A region of memory that is shared by cooperating processes is established. Processes can then exchange information by reading and writing data to the shared region.

Short-Term Scheduler Selects among processes that are ready to execute and allocates the CPU to one of them.

Stack Contains temporary data (such as function parameters, return addresses, and local variables),

State Restore (in Context Switch) Resume Operations

State Save (in Context Switch) Save current state of CPU

Swapping process is swapped out and later swapped in

Text Section The program Code

Unbounded Buffer Places no practical limit on the size of the buffer. The consumer may have to wait for new items, but the producer can always produce new items.

Zero-capacity buffer The queue has a maximum length of zero; thus the link cannot have any messages waiting in it. In this case, the sender must block until the recipient receives the message.