A process is a program in execution. It is a unit of work in the system and can be thought of as an instance of a program. A process consists of multiple components that work together to perform a specific task.

The following are the components of a process:

1. Program or executable code: The program or executable code is the set of instructions that the CPU executes. It is the code that is loaded from the disk into memory and executed by the CPU.

2. Data: Data is the information that the program manipulates. This data can be in the form of variables, arrays, structures, etc.

3. Stack: The stack is a region of memory used to store temporary data such as function parameters, return addresses, and local variables. It is also used to store the context of a process when a context switch occurs.

4. Heap: The heap is a region of memory used for dynamic memory allocation. It is used to allocate memory for data structures that are created at runtime.

5. Process Control Block (PCB): The Process Control Block is a data structure used by the operating system to manage a process. It contains information about the process such as the process ID, program counter, CPU registers, memory allocation, and process state.

6. Resources: Resources are the hardware and software components that a process uses such as CPU time, memory, I/O devices, and files.

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67. What is an Operating System? Write down its desirable characteristics ?
68. Define a deadlock ? Write down the conditions responsible for deadlock? How can we recover from deadlock ?
69. What are the various services provided by Operating system ?
70. What do you mean by PCB? Where is it used? What are its contents? Explain.
71. What is Binary and Counting semaphores ?
72. What is File? What are the different File attribute and operations?
73. What are System call? Explain briefly about various types of system call provided by an Operating System?
74. Describe necessary conditions for deadlocks situation to arise.

75. What are points to be consider in file system design? Explain linked list allocation in detail?
76. Write a Semaphore solution for dining Philosopher’s problem?
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