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1)

- 1. The OS manages the hardware of the system, which includes the CPU, Hardware, I/O devices, and all other hardware. The OS also provides the computer with basic computing resources, based on the hardware installed.
- 2. The OS manages the above-mentioned computing resources and defines how they will be used in applications. This is for the applications to be able to use the resources for solving the user's problems.
- 3. The OS also coordinates software to utilize hardware, so that hardware computing resource can be used in multiple applications properly, as well as prioritizing which software will receive more resources to run better.

2)

1. Program Execution:

A user – level program will not be able to allocate CPU time to execute a program

2. I/O Operations:

I/O operations in a computer are done by disks, tapes, serial lines. Only the OS can convert a user command into operations that involve drivers and controllers. A user – level program can't be trusted gain access to an OS specific process

3. File-System Manipulation:

A user – level program cannot ensure good protection to a file system as well as allocating and deleting blocks on file deletion

4. Communications:

A user – level program is unable to coordinate access to a network needed to send information to another system. Additionally, a user – level program could get information destined for another system

5. Error Detection:

Error detection must be done by the OS instead of a user – level program to ensure global error handling as well as catching all the possible errors in a system. Additionally, a user – level program is unable to handle both software and hardware error detection.