**Operating System**

**(4ITRC2)**

**IT IV Semester**

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**Assignment IV**

**Process Management Calls:**

These system calls are used to manage processes — creation, execution, waiting, and termination.

**fork()**  
Creates a new process by duplicating the calling process. Returns 0 to the child and child PID to the parent.  
*Use:* Process creation

**exec()**  
Replaces the current process image with a new process image. Several variants like execl(), execp(), execv().  
*Use:* To run a different program in the current process.

**wait()**  
Makes the parent wait until one of its child processes terminates.  
 *Use:* Process synchronization

**exit()**  
Terminates the calling process and returns a status code to the parent.  
*Use:* Clean process termination

**File Management Calls:**

Used to manipulate files — opening, reading, writing, and closing.

**open()**  
Opens a file and returns a file descriptor.

**read()**  
Reads data from a file descriptor into a buffer.

**write()**  
Writes data from a buffer to a file descriptor.

**close()**  
Closes an opened file descriptor.

**Device Management System Calls**

Handle input/output devices using file descriptors or specific interfaces.

**read() / write()**  
Same as file calls, used for I/O with devices like keyboards, screens, etc.

**ioctl()**  
Performs device-specific input/output operations.

**select()**  
Monitors multiple file descriptors to see if I/O is possible.

**Network Management System Calls**

**socket()**  
Creates a socket for communication.

**connect()**  
Connects the socket to the server.

**send()**  
Sends data over a connected socket.

**recv()**  
Receives data from a connected socket.

**System Information Management System Calls**

Used to obtain various system-related info

**getpid()**  
Returns the process ID of the calling process.

**getuid()**  
Returns the real user ID of the calling process.

**gethostname()**  
Gets the name of the host machine.

**sysinfo()**  
Provides system statistics like uptime, memory usage, etc.

***Thank You***