# Charotar University of Science and Technology
## Faculty of Technology and Engineering

## Devang Patel Institute of Advance Technology & Research
## Computer Engineering Department

| | |
|---|---|
| **Subject Name & Code : INTERNALS OF OPERATING SYSTEM (CE347)** | **Semester: 6** |

# Index Page

| **Sr. No.** | **Name of Practical** | **Page Number** | **Lab Instructor Signature** |
|---|---|---|---|
| 1 | Write a C program to read 4 int numbers from user and find the sum, product and average of those numbers. | | |
| 2 | Write programs using the following system calls of UNIX operating system: fork, exec, getpid, exit, wait, stat, readdir, opendir. | | |
| | Task-01 Write a program to execute fork() and find out the process id by getpid() system call. | | |
| | Task-02 Write a program to execute following system call fork(), execl(), getpid(), exit(), wait() for a process. | | |
| | Task-03 Write a program to find out status of named file (program of working stat() system call). | | |
| | Task-04 Write a program for “ls” command implementation using opendir() & readdir() system call. | | |
| 3 | **IMPLEMENTATION OF I/O SYSTEM CALL** | | |
| | Task-01 Write a program to implement open, close, read and write System Call. | | |
| | Task-02 Write a program to opens a particular file twice, write once and read once via two different file descriptors. | | |
| | Task-03 Using system calls write line of texts in a file. | | |
| | Task-04 Write a program to open, read and write files and perform file copy operation. | | |
| 4 | **IMPLEMENTATION OF STRUCTURE OF BUFFER STRUCTURE** | | |
| | Task-01 Write a program to create a doubly link list of n buffer. | | |
| | Task-02 Write a program to implement LRU algorithm. | | |
| | Task-03 Write a program to divide doubly link list of n nodes into n/4 sub list of hash queue. (value of n must be even and greater than 15). | | |
| 5 | **IMPLEMENTATE SYSTEM CALL FOR FILE SYSTEM** | | |

| | | | |
|---|---|---|---|
| | Task-01 Write a program to implement lseek() system call. A process seeks to 1024 bytes beyond the end of the file mapped by fd (file descriptor). | | |
| | Task-02 Write a program in which, the child process waits for the user input and once an input is entered, it writes into the pipe. And the parent process reads from the pipe. | | |
| | Task-03 Write a program in which, open a file’s once and read it twice. Use duplicate system call. | | |
| 6 | **INTERPROCESS COMMUNICATION** | | |
| | Task-01 Inter process communication (POSIX-IPC) using shared memory Study system calls: mmap(), shm_open(), shm_unlink() | | |
| | Task-02 Inter process communication (POSIX-IPC) using pipe Study system call: pipe() | | |
| 7 | **NETWORK COMMUNICATION** | | |
| | Task-01 Write a program to perform client server communication using TCP. | | |
| | Task-02 Write a program to perform client server communication using UDP. | | |
| 8 | Case study: RTOS(Real Time Operating System) | | |
| 9 | Case study: Network Operating System | | |
| 10 | Case study: a Distributed File System for very large files | | |