

OS LAB MANUAL

(CS23431)

Lab:3

Roll No:230701246

EX.NO:5

System Calls Programming

Aim: To experiment system calls using fork(), execlp() and pid() functions.

Program:

```
#include <stdio.h>

#include <unistd.h>

#include <sys/types.h>

#include <sys/wait.h>

int main() {

    pid_t pid;

    pid = fork();

    if (pid < 0) {

        perror("Fork failed");

        return 1;

    }

    if (pid == 0) {

        printf("THIS LINE EXECUTED TWICE\n");

        printf("Child Process ID: %d\n", getpid());

        printf("Parent Process ID: %d\n", getppid());

        execlp("/bin/ls", "ls", "-l", (char *)NULL);

        perror("execlp failed");
```

```
        return 1;
    } else {
        printf("THIS LINE EXECUTED TWICE\n");
        printf("Parent Process ID: %d\n", getpid());
        printf("Parent's Parent Process ID: %d\n", getppid());
        wait(NULL);
        printf("IT CAN BE EXECUTED TWICE\n");
    }
    return 0;
}
```

INPUT:

```
praveen@LAPTOP-Q0D806DB:~$ vi syscalls.c
praveen@LAPTOP-Q0D806DB:~$ gcc syscalls.c
praveen@LAPTOP-Q0D806DB:~$ ./a.out
```

OUTPUT:

```
praveen@LAPTOP-Q0D806DB:~$ vi syscalls.c
praveen@LAPTOP-Q0D806DB:~$ gcc syscalls.c
praveen@LAPTOP-Q0D806DB:~$ ./a.out
THIS LINE EXECUTED TWICE
Parent Process ID: 495
Parent's Parent Process ID: 322
THIS LINE EXECUTED TWICE
Child Process ID: 496
Parent Process ID: 495
total 132
-rwxr-xr-x 1 praveen praveen 16264 Apr 10 04:55 a.out
-rw-r--r-- 1 praveen praveen    0 Mar 27 05:55 emp
-rw-r--r-- 1 praveen praveen  465 Mar 27 06:06 emp.awk
-rw-r--r-- 1 praveen praveen   56 Feb  5 07:10 emp.da
-rw-r--r-- 1 praveen praveen   77 Mar 27 06:12 emp.dat
-rw-r--r-- 1 praveen praveen   45 Mar 27 05:55 empl.dat
-rw-r--r-- 1 praveen praveen 1149 Feb 18 05:15 fcfs.c
-rw-r--r-- 1 praveen praveen  216 Mar 27 05:13 fibo.sh
-rw-r--r-- 1 praveen praveen   20 Jan 30 14:55 hello.sh
-rw-r--r-- 1 praveen praveen    1 Feb 27 05:56 ipc.c
-rw-r--r-- 1 praveen praveen  205 Mar 25 05:41 leap.sh
-rw-r--r-- 1 praveen praveen  196 Mar 27 06:14 marks.awk
-rw-r--r-- 1 praveen praveen  146 Mar 27 06:17 marks.dat
-rw-r--r-- 1 praveen praveen    1 Mar 14 17:57 prac.c
-rw-r--r-- 1 praveen praveen 1851 Feb 18 05:25 priority.c
-rwxr-xr-x 1 praveen praveen   108 Feb  5 07:25 process_employees.sh
-rw-r--r-- 1 praveen praveen 2174 Mar 25 05:29 producerconsumer.c
drwxr-xr-x 2 praveen praveen 4096 Jan 30 14:41 rec
-rw-r--r-- 1 praveen praveen  540 Feb 19 17:38 receiver.c
-rw-r--r-- 1 praveen praveen   194 Mar 27 05:09 reverse.sh
-rw-r--r-- 1 praveen praveen 1902 Feb 27 05:36 rr.c
-rw-r--r-- 1 praveen praveen 2196 Feb 20 05:42 rrl.c
-rw-r--r-- 1 praveen praveen   592 Mar  4 05:08 sender.c
-rw-r--r-- 1 praveen praveen   585 Mar 25 05:35 simplecal.sh
-rw-r--r-- 1 praveen praveen 1693 Apr  1 05:39 sjf.c
drwxr-xr-x 2 praveen praveen 4096 Feb  1 03:29 som
-rwxr-xr-x 1 praveen praveen 16264 Feb 17 19:53 syscalls
-rw-r--r-- 1 praveen praveen   754 Apr 10 04:55 syscalls.c
-rw-r--r-- 1 praveen praveen    0 Feb 17 19:41 syscalls.c
IT CAN BE EXECUTED TWICE
```