SSN COLLEGE OF ENGINEERING, KALAVAKKAM
(An Autonomous Institution, Affiliated to Anna University, Chennai)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

UCS2412 - OPERATING SYSTEMS LAB

Lab Exercise 1 **System calls and System Commands**

Objective:

To study the purpose and working of various system calls and system commands used in Linux.

Sample Learning Outcome:

1. Learn about the various system calls and system commands, their purpose and options

2. Work and experience the system calls and commands

3. Understand the relation between the system calls and commands

Best Practices:

1. Algorithm design

2. Naming convention – for file names, variables

3. Comment usage at proper places

4. Prompt messages during reading input and displaying output

5. Error handling mechanisms for failures in system calls

6. Incremental program development

7. Modularity

8. All possible test cases in output

1. *Study the following system calls and system commands (using Linux manual pages)*

System Commands		**System calls**	
cp - -i	rmdir	fork()	opendir()
mv - -i	wc	execl()	readdir()
ls - -l	who	getpid()	open()
grep - -c,-v	head - -n	getppid()	read()
chmod	tail - -n	exit()	write()
cat	nl	wait()	creat()
mkdir	awk	close()	sleep()
rm			

Write the following in your ***observation*** for each of the commands and calls.

a) System Commands:
Name, Purpose, options, Syntax, Example

b) System Calls:
Name, Description, Header file, Syntax, Arguments, Return type (both : on success and on failure)

2. *Develop a C program to understand the working of fork(), getpid(), getppid(), sleep() and wait().*
   (Sample code is given in next file in LMS page for you to try)

3. *Develop a C program to create one child process using fork system call. Let the child process reads the first command line argument and computes the factorial of the given number. Let the parent process reads the second command line argument and print the series up to that number.*
   (Reading material is attached in the LMS page)

Submit the code with snapshot of the output for both programs (2 & 3) one after another in a single pdf in the LMS.