CS504 MJP AOS Slips

MSc(computer Science) (Savitribai Phule Pune University)

SAVITIBAI PHULE UNIVERSITY
M.Sc.(Computer Science) Sem-I
Practical Examination (From 2023-2024)
SUBJECT: CS-504-MJP: Lab Course on CS-501-MJ (Advanced Operating System)

Time: 3 Hours   **Max. Marks: 35**

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Q.1) Take multiple files as Command Line Arguments and print their inode numbers and file types

[10 Marks]

Q.2) Write a C program to send SIGALRM signal by child process to parent process and parent process make a provision to catch the signal and display alarm is fired.(Use Kill, fork, signal and sleep system call) [**20 Marks]**

Q.3) Viva   **[5 Marks]**

------------------------- Slip 1 --------------------

Time: 3 Hours   **Max. Marks: 35**

_____

Q.1) Write a C program to find file properties such as inode number, number of hard link, File permissions, File size, File access and modification time and so on of a given file using stat() system call.   **[10 Marks]**

Q.2) Write a C program that catches the ctrl-c (SIGINT) signal for the first time and display the appropriate message and exits on pressing ctrl-c again.   [**20 Marks]**

Q.3) Viva   **[5 Marks]**

------------------------ Slip 2 --------------------

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Time: 3 Hours   **Max. Marks: 35**

_____

Q.1)   Print the type of file and inode number where file name accepted through Command Line

[10 Marks]

Q.2) Write a C program which creates a child process to run linux/ unix command or any user defined program. The parent process set the signal handler for death of child signal and Alarm signal. If a child process does not complete its execution in 5 second then parent process kills child process.

[20 Marks]

Q.3) Viva   **[5 Marks]**

------------------------ Slip 3 -------------------

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Time: 3 Hours   **Max. Marks: 35**
_____

Q.1) Write a C program to find whether a given files passed through command line arguments are present in current directory or not.

[10 Marks]

Q.2) Write a C program which creates a child process and child process catches a signal SIGHUP, SIGINT and SIGQUIT. The Parent process send a SIGHUP or SIGINT signal after every 3 seconds, at the end of 15 second parent send SIGQUIT signal to child and child terminates by displaying message "My Papa has Killed me!!!".

[**20 Marks]**

Q.3) Viva   **[5 Marks]**

------------------------ Slip 4 --------------------

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Time: 3 Hours   **Max. Marks: 35**

_____

Q.1) Read the current directory and display the name of the files, no of files in current directory

[10 Marks]

Q.2) Write a C program to create an unnamed pipe. The child process will write following three messages to pipe and parent process display it.

Message1 = "Hello World"

Message2 = "Hello SPPU"

Message3 = "Linux is Funny"   [**20 Marks]**

Q.3) Viva   **[5 Marks]**

------------------------ Slip 5 -------------------

Time: 3 Hours   **Max. Marks: 35**

_____

Q.1) Display all the files from current directory which are created in particular month

[10 Marks]

Q.2) Write a C program to create n child processes. When all n child processes terminates, Display total cumulative time children spent in user and kernel mode

[**20 Marks]**

Q.3) Viva   **[5 Marks]**

------------------------ Slip 6 --------------------

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Time: 3 Hours   **Max. Marks: 35**

_____

Q.1) Write a C Program that demonstrates redirection of standard output to a file

[10 Marks]

Q.2) Implement the following unix/linux command (use fork, pipe and exec system call)

ls –l | wc –l   **[20 Marks]**

Q.3) Viva   **[5 Marks]**

------------------------ Slip 7 -------------------

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_____

Q.1) Write a C program that redirects standard output to a file output.txt. (use of dup and open system call).   **[10 Marks]**

Q.2) Implement the following unix/linux command (use fork, pipe and exec system call)
ls –l │ wc –l.

[**20 Marks]**

Q.3) Viva   **[5 Marks]**

------------------------ Slip 8 --------------------

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Time: 3 Hours   **Max. Marks: 35**

_____

Q.1) Generate parent process to write unnamed pipe and will read from it

[10 Marks]

Q.2) Write a C program to Identify the type (Directory, character device, Block device, Regular file, FIFO or pipe, symbolic link or socket) of given file using stat() system call.

[**20 Marks]**

Q.3) Viva   **[5 Marks]**

------------------------ Slip 9 -------------------

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_____

Q.1) Write a program that illustrates how to execute two commands concurrently with a pipe.

[10 Marks]

Q.2) Generate parent process to write unnamed pipe and will write into it. Also generate child process which will read from pipe

[**20 Marks]**

Q.3) Viva   **[5 Marks]**

------------------------ Slip 10 --------------------

Time: 3 Hours   **Max. Marks: 35**
_____

Q.1) Write a C program to get and set the resource limits such as files, memory associated with a process   **[10 Marks]**

Q.2) Write a C program that redirects standard output to a file output.txt. (use of dup and open system call).   [**20 Marks]**

Q.3) Viva   **[5 Marks]**

------------------------- Slip 11 --------------------

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_____

Q.1) Write a C program that print the exit status of a terminated child process

[10 Marks]

Q.2) Write a C program which receives file names as command line arguments and display those filenames in ascending order according to their sizes. I) (e.g $ a.out a.txt b.txt c.txt, …)

[**20 Marks]**

Q.3) Viva   **[5 Marks]**

------------------------ Slip 12 --------------------

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_____

Q.1) Write a C program that illustrates suspending and resuming processes using signals

[10 Marks]

Q.2) Write a C program that a string as an argument and return all the files that begins with that name in the current directory. For example > ./a.out foo will return all file names that begins with foo

[**20 Marks]**

Q.3) Viva   **[5 Marks]**

------------------------ Slip 13 --------------------

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_____

Q.1) Display all the files from current directory whose size is greater that n Bytes Where n is accept from user.   **[10 Marks]**

Q.2) Write a C program to find file properties such as inode number, number of hard link, File permissions, File size, File access and modification time and so on of a given file using stat() system call.   [**20 Marks]**

Q.3) Viva   **[5 Marks]**

------------------------ Slip 14 --------------------

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Q.1) Display all the files from current directory whose size is greater that n Bytes Where n is accept from user   **[10 Marks]**

Q.2) Write a C program which creates a child process to run linux/ unix command or any user defined program. The parent process set the signal handler for death of child signal and Alarm signal. If a child process does not complete its execution in 5 second then parent process kills child process

[**20 Marks]**

Q.3) Viva   **[5 Marks]**

------------------------ Slip 15 --------------------

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Time: 3 Hours   **Max. Marks: 35**
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Q.1) Display all the files from current directory which are created in particular month

[10 Marks]

Q.2) Write a C program which create a child process which catch a signal sighup, sigint and sigquit. The Parent process send a sighup or sigint signal after every 3 seconds, at the end of 30 second parent send sigquit signal to child and child terminates my displaying message "My DADDY has Killed me!!!".   **[20 Marks]**

Q.3) Viva   **[5 Marks]**

------------------------ Slip 16 --------------------

Time: 3 Hours   **Max. Marks: 35**

_____

Q.1) Read the current directory and display the name of the files, no of files in current directory

[10 Marks]

Q.2) Write a C program to implement the following unix/linux command (use fork, pipe and exec system call). Your program should block the signal Ctrl-C and Ctrl-\ signal during the execution.

i. Ls –l | wc –l   [**20 Marks**]

Q.3) Viva   **[5 Marks]**

------------------------- Slip 17 --------------------

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Q.1) Write a C program to find whether a given file is present in current directory or not

[10 Marks]

Q.2) Write a C program to create an unnamed pipe. The child process will write following three messages to pipe and parent process display it.

Message1 = "Hello World"

Message2 = "Hello SPPU"

Message3 = "Linux is Funny"   [**20 Marks]**

Q.3) Viva   **[5 Marks]**

------------------------ Slip 18 --------------------

Time: 3 Hours   **Max. Marks: 35**

_____

Q.1) Take multiple files as Command Line Arguments and print their file type and inode number

[10 Marks]

Q.2)   Implement the following unix/linux command (use fork, pipe and exec system call)

ls –l | wc –l   **[20 Marks]**

Q.3) Viva   **[5 Marks]**

------------------------ Slip 19 --------------------

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Q.1) Write a C program that illustrates suspending and resuming processes using signals

[10 Marks]

Q.2) Write a C program to Identify the type (Directory, character device, Block device, Regular file, FIFO or pipe, symbolic link or socket) of given file using stat() system call.

[**20 Marks]**

Q.3) Viva   **[5 Marks]**

------------------------ Slip 20 --------------------

Time: 3 Hours   **Max. Marks: 35**

_____

Q.1) Read the current directory and display the name of the files, no of files in current directory

[10 Marks]

Q.2) Write a C program which receives file names as command line arguments and display those filenames in ascending order according to their sizes. I) (e.g $ a.out a.txt b.txt c.txt, …)

[**20 Marks]**

Q.3) Viva   **[5 Marks]**

------------------------ Slip 21 --------------------

Time: 3 Hours   **Max. Marks: 35**

_____

Q.1) Write a C Program that demonstrates redirection of standard output to a file

[10 Marks]

Q.2) Write a C program to implement the following unix/linux command (use fork, pipe and exec system call). Your program should block the signal Ctrl-C and Ctrl-\ signal during the execution.

i. ls –l | wc –l

[**20 Marks]**

Q.3) Viva   **[5 Marks]**

------------------------- Slip 22 --------------------

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[10 Marks]

Q.2) Write a C program to Identify the type (Directory, character device, Block device, Regular file, FIFO or pipe, symbolic link or socket) of given file using stat() system call.

[**20 Marks]**

Q.3) Viva   **[5 Marks]**

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Q.1) Print the type of file and inode number where file name accepted through Command Line

[10 Marks]

Q.2) Write a C program which creates a child process to run linux/ unix command or any user defined program. The parent process set the signal handler for death of child signal and Alarm signal. If a child process does not complete its execution in 5 second then parent process kills child process

[**20 Marks]**

Q.3) Viva   **[5 Marks]**

------------------------- Slip 24 --------------------

Time: 3 Hours   **Max. Marks: 35**

_____

Q.1) Write a C Program that demonstrates redirection of standard output to a file

[10 Marks]

Q.2) Write a C program that redirects standard output to a file output.txt. (use of dup and open system call).

[**20 Marks]**

Q.3) Viva   **[5 Marks]**

------------------------ Slip 25 --------------------