OPERATING SYSTEMS
ASSIGNMENT-01

1)compiling C++

Compilers are generally used to convert source code into machine code which is understood by the computer. Compiler takes in the preprocessed file and converts into object file containing the assembly level code. Now the object file is created in a binary format. In this object file each line depicts one machine level instruction. The machine takes in this instructions and executes the program. After execution this machine level instruction is converted back to human readable format.

Eg: gcc and g++ are the compilers for C and C++

2)Pass by Value:

The value of parameter is copied into an object and the copied object is passed wherever needed. This is called pass by value

Pass by reference:

The reference to the actual value of the parameter is passed on wherever necessary. The value of the function can be modified by changing the value of this reference.

Pass by value/Pass by reference in Java:

We generally use pass by value in JAVA. But to pass the value we generally use the reference of the particular variable

Pass by value/Pass by reference in C/C++:

In C/C++ both pass by value and pass by reference can be used

3)gdb debugger

There are two ways to debug a C++ program

a)one way to start debugging with executable code

Gdb <FileName>

Second step is to give the following code:

(gdb) run

b)other way is to start gdb alone

gdb

This will give you (gdb)prompt

(gdb) <filename>

To exit debugging write ‘quit’ command on gdb prompt

Some common gdb commands include

help,

break,

run,

continue,

quit,

list-lists program source code,

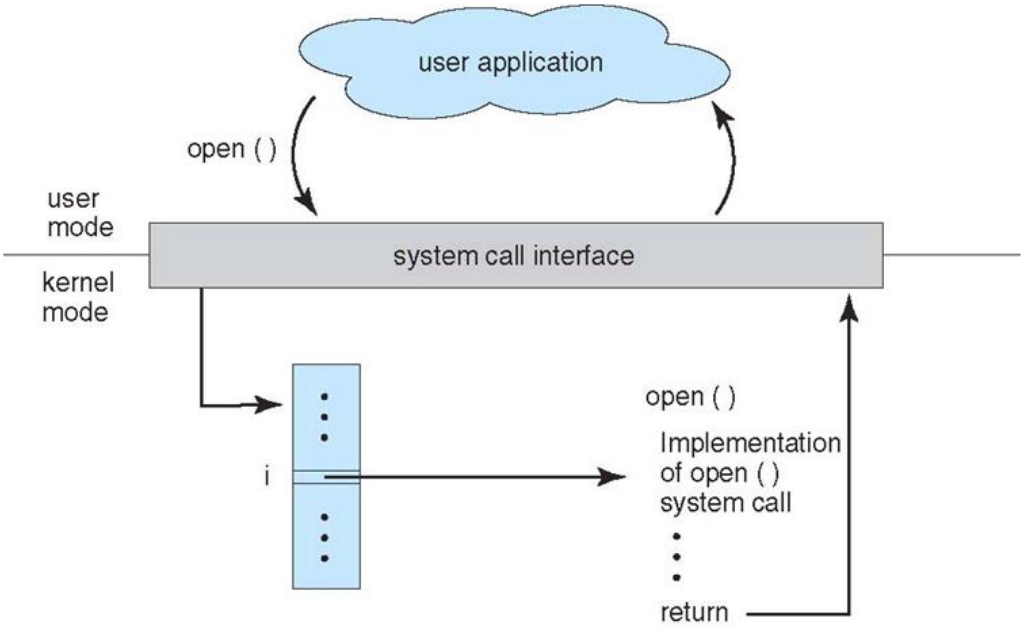
display-displays the value every time when the breakpoint is hit.

4)Functions of Operating system

Memory management- Operating system helps to allocate memory between various files and programs running in the system.
Booting- Operating system supplies the files necessary to start the files which is needed to boot the system
Loading and execution-Operating system also helps in loading and execution of various programs loaded on the operating system
Device and File management-operating system helps to manage the devices and files in their respective location
Controls overall system performance-operating system is also responsible for overall control of the system.
5)system calls
Operating system communicates with the processor via system calls. System calls can be invoked in a variety of ways depending upon the functionality of the underlying system. When a system call is invoked it is typically treated by the hardware as a software interrupt. There are five different types of system calls:

- Process control.
- File management.
- Device management.
- Information maintenance.
- Communications.

System call working:



Examples of system calls:

The following are the examples of system calls with their function:

access()	This checks if a calling process has access to the required file
chdir()	The chdir command changes the current directory of the system
chmod()	The mode of a file can be changed using this command
chown()	This changes the ownership of a particular file
kill()	This system call sends kill signal to one or more processes

8)
ls-to list the files in the present directory
Pwd-returns the path of current directory from the root
grep-used to search for a particular pattern of characters in a file
cat-reads the file and gives its content as output
date-used to display system date and time
mkdir-used to create directories
rcmd-used by superusers;used to execute commands on remote machine;the commands are based on authentication schemes based on specified port numbers
dd-copies a file,converts the data format into process based on operands in file
hostname-shows computers host and domain name
mt-used to control magnetic tape device
rcp-used to share files between systems without using FTP or logging into remote system
Sync-standard system call which commits to nonvolatile storage all data in kernel file system buffers
Chmod-change the access mode of the file
Chgrp-to change the user access group of files
df-display information related to the file about total file space and size
Kill-used to kill the current process in the system
mv-move files from one directory to another
rm-used to remove objects like files
cp-used to copy files
rmdir-used to remove the directory
tar-used to archive and extract file
cpio-copy files to and from archives
echo-used to print the text in output
ln-makes lines between files
ps-provides information about currently running process
sh-command name of Bourne Shell

9)
a)char *s= “some value”;
b)int arr[10];

c)int array[10];
int (&a)[10] = array;
d)char* sample[] = {arrayelement1, arrayelement2, arrayelement3}
e)char var =”some value”
char *ptr1
char **ptr2
ptr1= &var
pt2= &ptr1
f)const int val=100;
g)int const* pointer;
i)int *const pointer;