

LAB MANUAL

INFORMATICS PRACTICES

Course code: 201

Department of Computer Engineering

Semester 1

Experiment :1

FAMILIARISATION OF OPERATING SYSTEM

Operating system

The most important program that runs on a computer, every general purpose computer must have an operating system to run other programs. Operating systems perform basic tasks, such as recognizing inputs from the keyboard, sending output to the display screen, keeping track of files and controlling peripheral devices such as disk drive and printer.

For large systems, the operating system has over greater responsibilities and power it is like a traffic cop. It makes sure that different programs and users running at the same time do not interfere with each other. The operating system is also responsible for security: ensuring that unauthorized users do not access the system.

Types of operating system

Serial Processing: The Serial Processing Operating Systems are those which perform all the instructions in a sequence manner or the instructions those are given by the user will be executed by using the FIFO manner means First in First Out. All the instructions those are entered first in the system will be executed first and the instructions those are entered later will be executed later.

Batch Processing: The Batch Processing is same as the Serial Processing technique. But in the Batch Processing similar types of jobs are firstly prepared and they are stored on the card. and that card will be submitted to the system for the processing. The system then performs all the operations on the instructions one by one.

Multi-Programming: As we know that in the Batch Processing system there are multiple jobs executed by the system. The system first prepares a batch and after that he will execute all the jobs those are stored into the batch. But the main problem is that if a process or job requires an input and output operation, then it is not possible and second there will be the wastage of the time when we are preparing the batch and the CPU will remain idle at that time.

Real Time System: There is also an operating system which is known as Real Time Processing System. In this response time is already fixed. Means time to display the results after processing has fixed by the processor or CPU. Real Time System is used at those places in which we require higher and timely response. These types of systems are used in reservation. So when we specify the request, the CPU will perform at that time. There are two types of Real Time System

1) Hard Real Time System: In the Hard Real Time System, Time is fixed and we can't Change any Moments of the Time of Processing. Means CPU will Process the data as we Enters the Data.

2) Soft Real Time System: In the Soft Real Time System, some Moments can be Change. Means after giving the Command to the CPU, CPU Performs the Operation after a Microsecond.

Distributed Operating System. - Distributed Means Data is Stored and Processed on Multiple Locations. When a Data is stored on to the Multiple Computers, those are placed in Different Locations. Distributed means In the Network, Network Collections of Computers are connected with Each other.

Multiprocessing: Generally a Computer has a Single Processor means a Computer have a just one CPU for Processing the instructions. But if we are Running multiple jobs, then this will decrease the Speed of CPU. For Increasing the Speed of Processing then we uses the Multiprocessing, in the Multi Processing there are two or More CPU in a Single Operating System if one CPU will fail, then other CPU is used for providing backup to the first CPU. With the help of Multi-processing, we can Execute Many Jobs at a Time. All the Operations are divided into the Number of CPU's. if first CPU Completed his Work before the Second CPU, then the Work of Second CPU will be divided into the First and Second.

Parallel operating systems are used to interface multiple networked computers to complete tasks in parallel. The architecture of the software is often a UNIX-based platform, which allows it to coordinate distributed loads between multiple computers in a network. Parallel operating systems are able to use software to manage all of the different resources of the computers running in parallel, such as memory, caches, storage space, and processing power. Parallel operating systems also allow a user to directly interface with all of the computers in the network.

Experiment :2

The Linux File System

A single fixed disk can store thousands of files. For organizing data by grouping files on the disk, the operating system provides a file system.

The UNIX file system was a hierarchical structure and files can be stored under directories. The directories on the disk can be created to store files containing data of a similar nature. Thus the user decides the directory name and the files in a directory. Linux follows the UNIX file system convention.

All the files are stored on the disk under one main directory called the root directory. The root directory has been further subdivided into directories-bin, root, home, usr, etc and dev. In each directory, files containing related data can be stored. The administrator of the Linux system may place all the HOME directories of the users under the /home directory. For example, the tom directory is the HOME directory for the user, tom.

In the file system hierarchy, a file is referred to by its path name, which is made up of the file name preceded by the name of the directory containing the file. The path name may have a set of directories, one directory containing another until the / directory is reached.

For instance, in the previous figure the full path of the file start can be given as /home/tom/Desktop/start.

In a hierarchical, inverted tree like structure, the operating system provides faster access to files because groups of files are isolated from each other. Only one directory(a smaller no. of files) has to be searched to locate a file.

The following are the some of the directories under the / directory. Each of these directories has been organized to store a specific type of file.

- The /bin directory stores many utilities of Linux. These utilities are the commands available under the Linux system. These are in the binary format hence the name “bin”.
- The /etc directory stores the system related data which users and the system programs and configuration files.
- The /lib directory contains libraries of data for the compilers installed in the system for eg. The C language routines.
- The /home directory generally contains all the HOME directories of users.

- The /user directory stores the operating system files which are not involved in the boot process. Many utilities are available in the bin directory and the user directory. The /user/ bin directory is different from the /bin directory.
- The /var directory has information specific to different utilities of linux.
- The /dev directories stores all the device related files for the system.

MDTC

Experiment :3

CUSTOMIZATION

Aim: to change background, theme and font

Procedure:

1. Open main menu -> system -> Preference-> Appearance
2. To change background select background tab and click required background.
3. To change the theme press on an appropriate theme if we needed to customize, press customize button.
4. To change application font, document font, desktop font etc

Result:

According to procedure the background, theme and font has been changed.

Experiment :4

OPEN OFFICE CALC1

Aim:

To prepare a mark list.

Procedure:

1. Open main menu->Application->Office->Open office.org calc
2. Insert sl.no, name, and 10 subjects of sslc (Kerala state).
3. Calculate Grade using following details

90-100	A+
80-89	A
70-79	B+
60-69	B
50-59	C+
40-49	C
30-39	D+
20-29	D
>20	E

Result

According to the procedure the mark list has been prepared using open office calc.

Experiment :5

OPEN OFFICE CALC2

Aim:

To prepare a salary slip.

Procedure:

1. Open main menu->Application->Office->Open office.org calc

2. Design salary slip using following fields

Sl.no, name, designation, basic pay, DA, HRA, PF.

3. Calculate DA, HRA and PF by using following details.

If $BP > 100000$,

DA=20% of BP

HRA=14% of BP

PF=13% of BP

If $BP > 75000$

DA=18% of BP

HRA=12% of BP

PF=11% of BP

If $BP > 50000$

DA=16% of BP

HRA=10% of BP

PF=9% of BP

4. Calculate net salary (Net Salary=BP+HRA+DA-PF)

Result

According to the procedure the salary slip has been prepared using open office calc.

Experiment :6

OPEN OFFICE IMPRESS

Aim: to create and run slide show

Procedure:

1. Open application ->office -> open office org.impress.
2. Open a new slide from insert -> new and select proper slide layout.
3. Type the title and other detail in the slide.
4. To add custom animation, slide show -> custom animation-> select animation-> ok.
5. To insert hyperlink, first select the portion is to be link then click in menu bar -> insert -> hyperlink and select the documents to link.
6. Again choose a new slide and type the details fill all the data are added.
7. Run the slide show by clicking side show in the menu bar.

Result

According to the procedure a slideshow has been created.

Experiment :7

DIRECTORY COMMANDS IN LINUX

Linux commands offer the Linux prompt is displayed all Linux commands should be entered in lower case characters

Identify the current directory path

The pwd (print working directory) command is used to display the full path name of the current directory. Syntax is \$pwd.

```
Eg:-student@student_desktop:$ pwd
```

```
/home/student.
```

Here /home/student is the directory is which the user is currently working.

Changing the current directory

The cd commands changes the current directory to the directory specified

```
Eg: student@student_desktop:$pwd
```

```
/home/student
```

```
student@studnte_desktop: $ cd 88
```

```
student@studnte_desktop:88/$
```

in the above example, the user student changed the working directory from /users to the directory/users/88.

The ..(double dot) option with cd command is used to move the parent directory of your current directory

```
Example: student@student desktop:~$pwd
```

```
/home/student
```

```
Student@studentdesktop:~$pwd
```

```
Student@student/home:~$pwd
```

```
/home
```

```
student@student/home:~$cd
```

```
student@student/:~$pwd
```

```
/
```

```
Student@student/:~$
```

The two dots refers to the parent directory of the current directory not that these has to be space between cd and the two dots but not between the dots. The cd command without any path name always takes a user back to the home directory.

Creating a directory

The mkdir command is used to create directory.

Example.

```
Student@studentdesktop:~$mkdir sari
```

```
Student@studentdesktop:~$
```

In the above example, the directory sari is created under the student directory.

Removing directory

The rmdir command remove the directory specified

Example

```
Student@studentdesktop:~$rmdir sari
```

```
student@studentdesktop:~$
```

here the sari directory deleted

listing the contents of a directory

the ls command is used to display the names of the fiels and sub directories in a directory.

```
student@studentdesktop:~$ls
```

```
abc bcd arun term
```

```
student@studentdesktop:~$
```

in the above example all the files and directories under the directory named students are listed.

Displaying the contents

The cat command helps us to list the contents of a file we specify. If we do not specify the name of it, it takes input from the standard input.

```
$cat (option)(file)
```

The cat command comes with different options. They are: cat - takes input from the standard input file. We can type in our text and terminate with (ctrl + c) to take us back to the \$ prompt.

Cat -s - suppress warning about nonexistent files to display the contents of the file xyz.

Example

```
student@studentdesktop:~/88$cat> mkl
```

```
have a nice day
```

```
[ctrl+b]
```

```
student@studentdesktop:~/88$
```

Copying files

The cp command duplicates the contents of the source file into a target file.

Syntax

```
cp[option] <source file> <destination directory or file>
```

Example

```
student@studentdesktop:~/88$cp live sari
```

In the above example, the contents of live are copied to a new file sari. If sari already exists, its contents will be overwritten by the contents of the new file.

Moving and renaming files.

The mv command is used to move a directory or file from one location to another or to change the name of a file or directory.

Syntax. Mv [option]source destination

Example.

```
student@studentdesktop:~/88$mv 8 sari
```

in the above example the file 8 is moved to sari. The 8 no longer exist in the directory.

Experiment :8

CREATING SIMPLE WEB PAGES

AIM

Under stand the development of web pages

HTML

HTML is a language for describing web pages.

- HTML stands for Hyper Text Mark-up Language
- HTML is not a programming language, it is a mark-up language
- A mark-up language is a set of mark-up tags, usually called HTML tags
- HTML uses mark-up tags to describe web pages
- HTML tags are key words surrounded by angel brackets like<html>
- HTML tags normally come in pairs like and
- The first tag in a pair is the start tag , the second tag is the end tag
- HTML elements is a complete tag, having an opening tag<tag>, elements content and closing </tad>
- HTML attributes is used to modify the value of the HTML elements. Elements will often have multiple attributes.
- HTML documents contain HTML tags and text
- HTML documents are also called web pages

Creating/editing HTML pages – simple text editors such as gedit/nano can be used. Save HTML pages with extension .htm or .html

Viewing WebPages- the purpose of a web browser is to read HTML documents and dispaly them as web pages. The browser does not display the HTML tags, but uses the tags to interpret the content of the page open it a web browser.

HTML TAGS

<HTML>	define an html document
<head>	define information about the document
<title>	define the tittle of a document
<body.	Defines the document's body
<h1> to <h6>	define html headings
<p>	Define a paragraph
 	define a single line break
<hr/>	define a horizontal line
	define bold text
<i>	define italic text.
<a>	define an anchor
<form>	define an html form
	define an image
	defines a list item
	define an unordered list

	define an ordered list
<sub>	defines subscript
<sup>	defines superscript
	strikethrough

Generic attributes

Attributes exist to modify HTML tags allowing for complete customization of a website. Here's some other attributes that readily usable with many of HTML tags.

attribute	options	functions
align	Right, left, center	Horizontal align tags
valign	Top, middle, bottom	Vertically align tags within an HTML element
bgcolor	Numeric, hexadecimal, RGB values	Place a background color behind an element
background	URL	Place an background image behind an element

<html>

<head>

<title>

This page tests different font attributes

</title>

```
</head>
```

```
<body>
```

```
<font face=arial>
```

```
<Font size=3>
```

```
<font color=3>
```

```
    <p>this paragraph displays text in <b><i>MPTC COLLEGE</i></b>font with size 3 ie.12pt  
in<b><i>RED</i></b>color</p>
```

```
</font>
```

```
</font>
```

```
</font>
```

```
<br>
```

```
<font face =GEORGIA size=2color=BLUE>
```

```
    <P>this paragraph displays text In <b><i> GEORGIA</i></b>font with 10pt.pixel size  
ie.size 2 and in <b><i>BLUE</i></b>color</p>
```

```
</font>
```

```
</body>
```

```
</html>
```

RESULT

Familiarized about the development of web pages

Experiment :9

SEARCH ENGINE

A program that searches for specified keywords and return a list of document where the key words where found a web search engine is a designed to search for information on the world wide web and FTP servers. The search results are generally presented in a list of result and are often called hits. The information may consist of WebPages information and other type of files. Some search engine also main data available in databases or open directories unlike web directories. Which are maintained by human editors? Search engine operator's algorithmically or is a mixture or algorithmic and human input.

FEW SEARCH ENGINES

Searching of browsing

In this method of searching the search page presents several topics and sub topics. Users search by selecting a topic then sub topic and contents "drilling down" until the required information is found.

Search by keyword

In this method of searching.

1. The user enters keywords in a query box and requests a search. Some search tools spaces more emphasis on the first keyword, assuming it is the most important.
2. The search tools attempts to watch the keywords with enters in is databases then returns a "hit list" of sites related to the keywords.
3. The users select appropriate sites from the list and review the pages to find the information required. The keyword searching method is often used for specific searches.

E.g.: goofle, altvista, all the web etc..

Search the keywords search engine in Google AltVista ,all the web and compare results.

Google search or Google web search is a web searching engine owned by Google inc. and is the most used search engine on the web Google receivers. Several hundred million queries each day through its various services. This main purpose of Google search is to hunt for text in WebPages.

Experiment :10

E-MAIL

AIM

1. To familiarize with e-mail.
2. To create an e-mail id, attach all works and send to another mail.

THEORY

E-mail (electronic mail)

It is a way to send messages, memos, and letters to another person or internet.

Anatomy of E-mail address

Format of E-mail address is username domain for example, gptc@bsnl.in.

E-mail client

It is an application that allows users to interface with email server to send and service mail. An e-mail client may be web based application such as yahoo mail, Gmail or hot mail.

Configuring E-mail client

To configure E-mail client the following are required e-mail address-e.g.: gptc@bsnl.in.

Web mail

Some times called web based e-mail include many of the some features. Web mail does not require any special email client software. Free web mail accounts such as gmail, yahoo, and hotmail use on email client that appears in a webpage.

To setup web based mail

- Determine which web service, want to use (e.g: gmail, hotmail, yahoo).
- Sign up for a free account.

- Determine the username and password.
- Fill the required information.

Understanding folder list in mail client/webmail

- Inbox- stores your incoming messages.
- Draft- stores messages that you have worked on, but have not yet send.
- Spam- store messages that have been identified that as being junk.
- Sent- contain copies of messages that you had send once a messages from an outbox is send.
- Templates- stores email messages templates- practical messages that have composed and saved as templates.
- Trash- contains messages that have deleted.

Composing new messages

- Click new button.
- In the to: field enters the email address of the destination multiple recipient addresses are specified by comma.
- In the Cc: Enter the email address some way in to field that we want to send carbon copy of mail.
- In the Bcc: Any addresses entered in the Bcc field will receive the message ,but none of the recipients will see the names or email of contacts on the Bcc line
- Subject: Enter the subject of the email
- Enter the contents of your message in the big text field below the subject. There is no practical limit on the amount of text that includes the message.

Attaching files

- To attach a file on email, click attaches files.
- Select the file you would like to include the message.

Replying to messages

- To reply to messages: There are three types of email replies
- Reply sends reply on the center of the message to which you are replying
- Reply to all-sends your reply to the sender of the message
- Forward- allows you to send the message, with any additional commands you may add to some other contacts.

Adding signature

- Signatures in email are bit f student text added to the bottom of any new messages or replies.

- To create a signature open the evolution preferences window by selecting edit-> preferences from the menu bar, on the left side of the evolution preferences, window, select compose preferences and then select the signature tab.
- Click on the add to add a new signature, evolution should then open the "edit signature" window. Give your signature a name and either the content of the signature in the big text field below. When finished click on the save button on the tool bar.
- New signature name should appear in the list in preferences window.
- Signature should now show up in the drop down list on the compose /reply window.

In G-mail

- Logon to our Gmail account.
- Select settings in the appear right corner of the page
- Enter your preferred signature text in the box next to the 'signature' option (typing text into that box will automatically turn on the signature option)
- Select 'save changes' to confirm your signature.

Mailing lists

Mailing list allows you to post regular updates to people who subscribe to the list. Announcement lists are mailing lists where only the owner of the list can post to all subscribers. They are usually used for new letters or announcements. Discussion lists allow interaction between all the subscribers.

RESULT

Familiarized with email, created an email id. My mail id is niyasbabuakkala@gmail.com, attached my lab work and send to another mail

MPTC