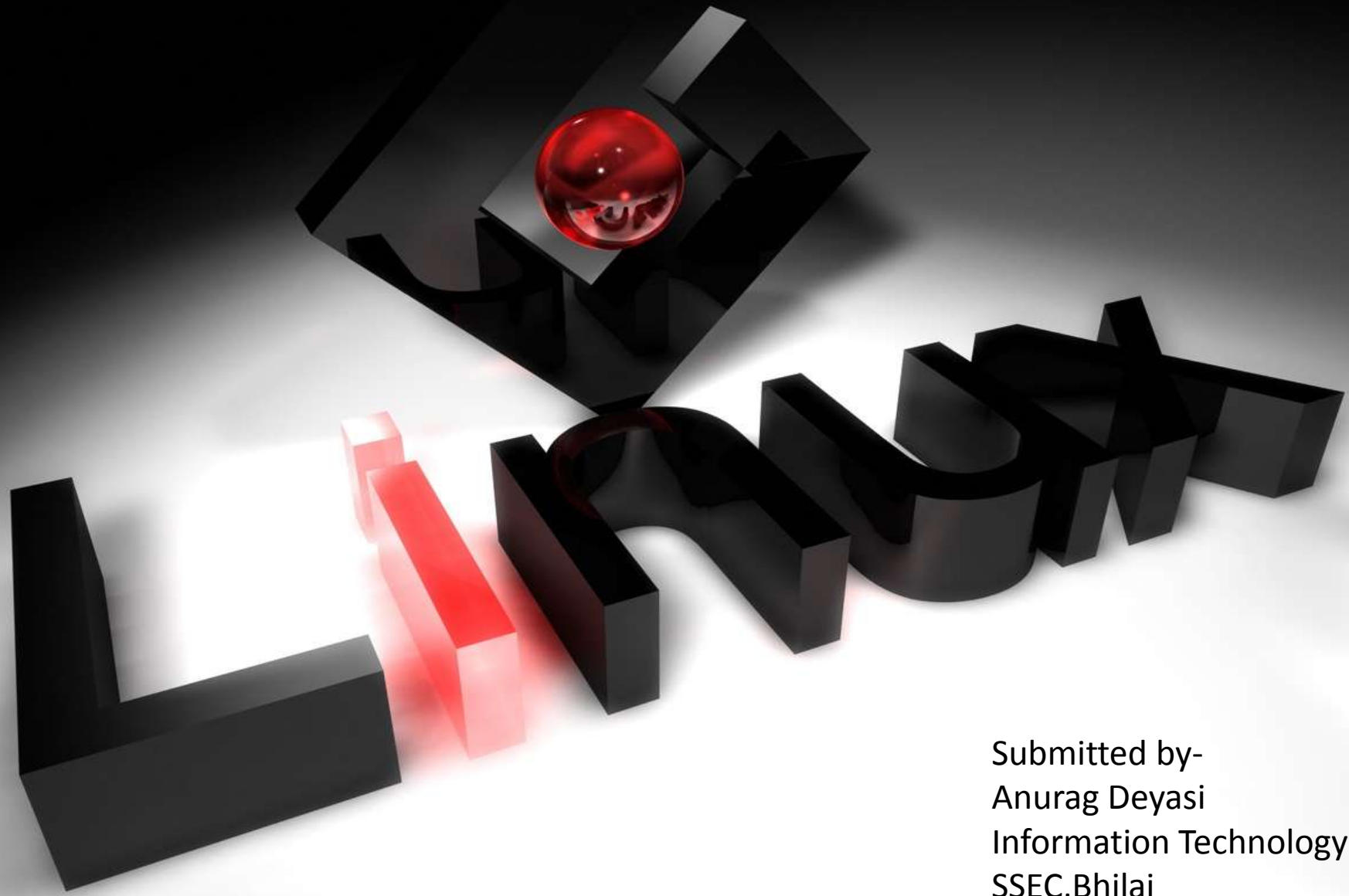
# Linux Presentation




Submitted by-
Anurag Deyasi
Information Technology
SSEC,Bhilai

# Pronunciation of Linux

- (‘Leenooks’)

  This is Linus Torvalds’ original pronunciation, based on the pronunciation of his name in Swedish.

- (‘Linnuks’)

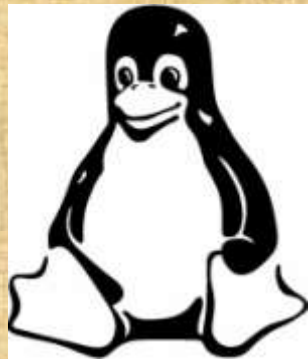
  This is now Linus Torvalds’ preferred pronunciation, as he considers  closer to the original  than . It also follows the pronunciation of the English word ‘linen’.

- (‘Lynuks’)

  The other major alternative is based on the pronunciation of the English version of ‘Linus’. It also happens to be the version I use.

# What is Linux

- Linux is a generic term referring to Unix-like graphical user interface (GUI) based computer operating systems.
- It is Multi-user, Multitasking, Multiprocessor
- Has the X Windows GUI
- Coexists with other Operating Systems
- Runs on multiple platforms
- Includes the Source Code



# Why is it significant?

- Powerful
  - Runs on multiple hardware platforms
  - Users like its speed and stability
  - No requirement for latest hardware
- It's "free"
  - Licensed under GPL
  - Vendors are distributors who package Linux

# Operating System


An operating system, or OS, is a software program that enables the computer hardware to communicate and operate with the computer software. Without a computer operating system, a computer would be useless.
E.g.. Linux

## Multi-user

A multi-user operating system allows for multiple users to use the same computer at the same time and/or different times.

## Multiprocessing

An operating system capable of supporting and utilizing more than one computer processor.

## Multitasking

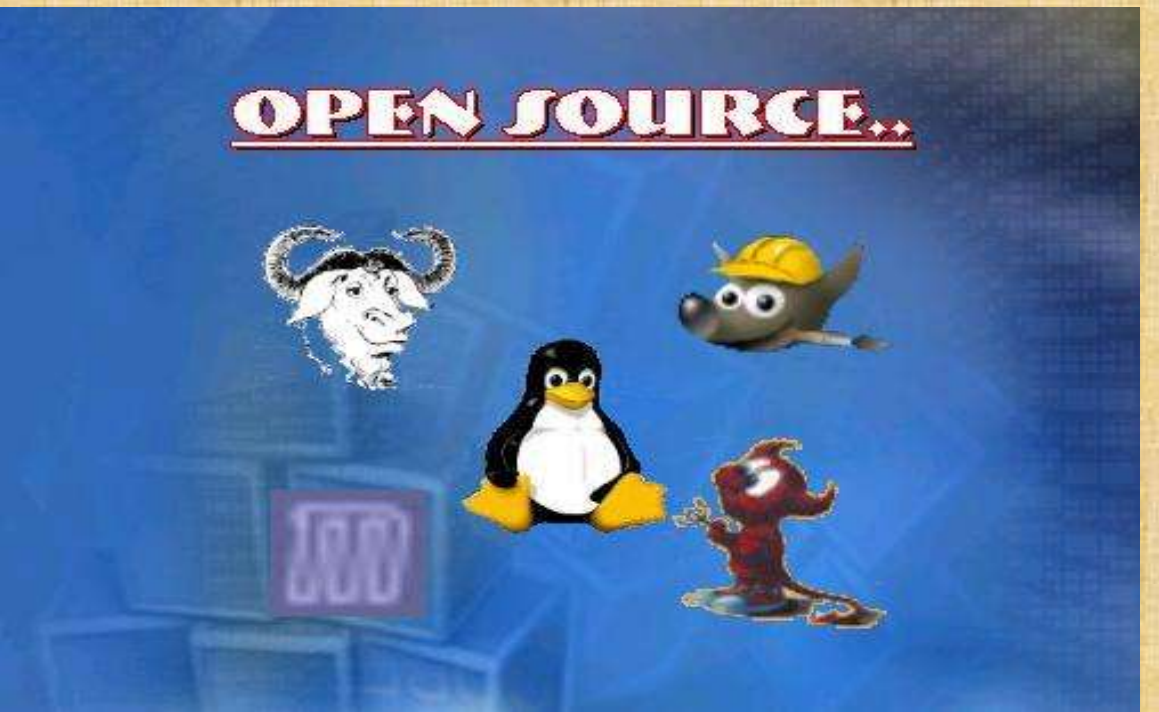
An operating system that is capable of allowing multiple software processes to run at the same time.

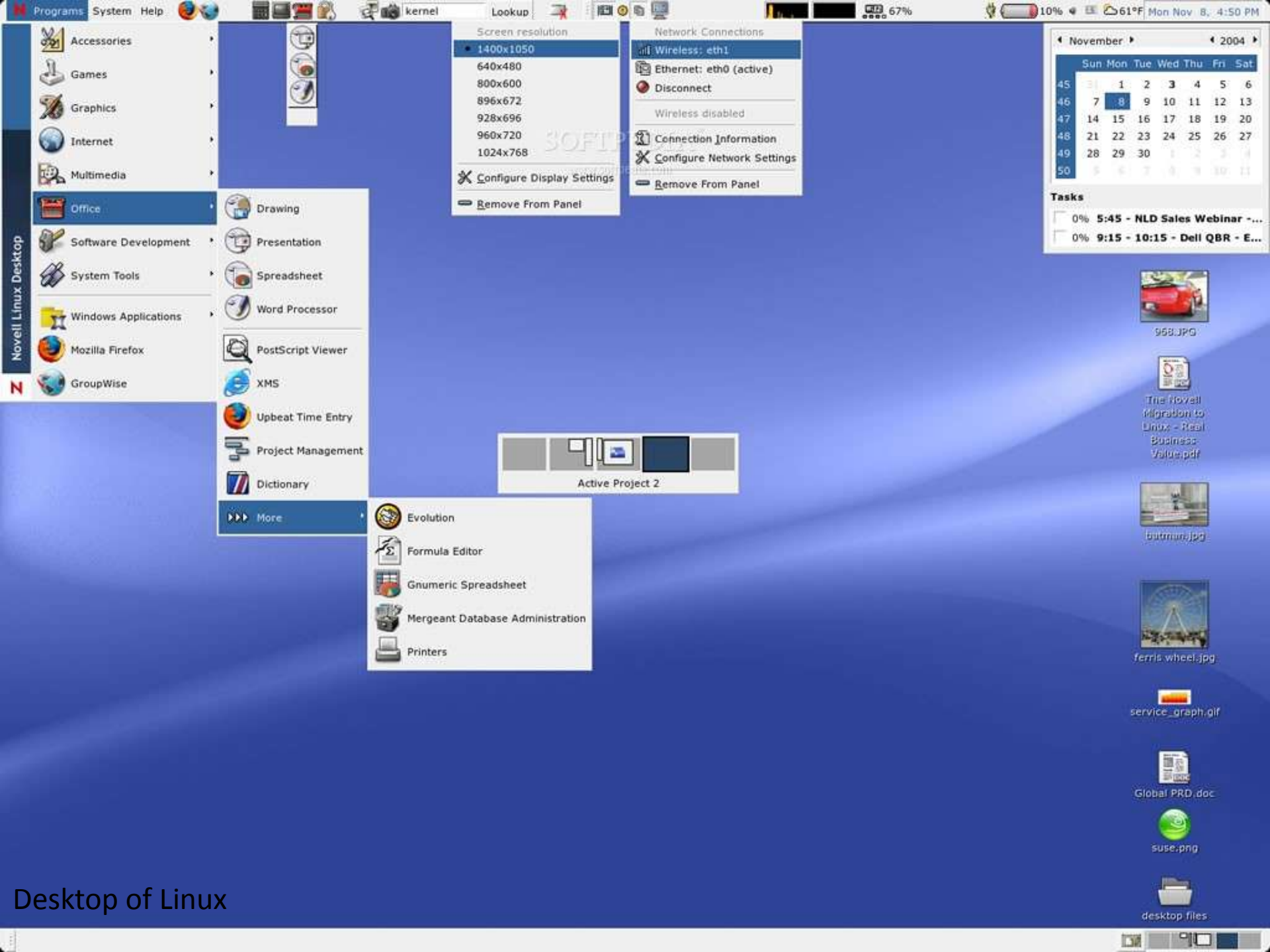
## Multithreading

Operating systems that allow different parts of a software program to run concurrently. Operating systems that would fall into this category are:

# Open Source Software

- People improve it, people adapt it, people fix bugs. And this can happen at a speed that, compared to conventional software development, seems **astonishing.**

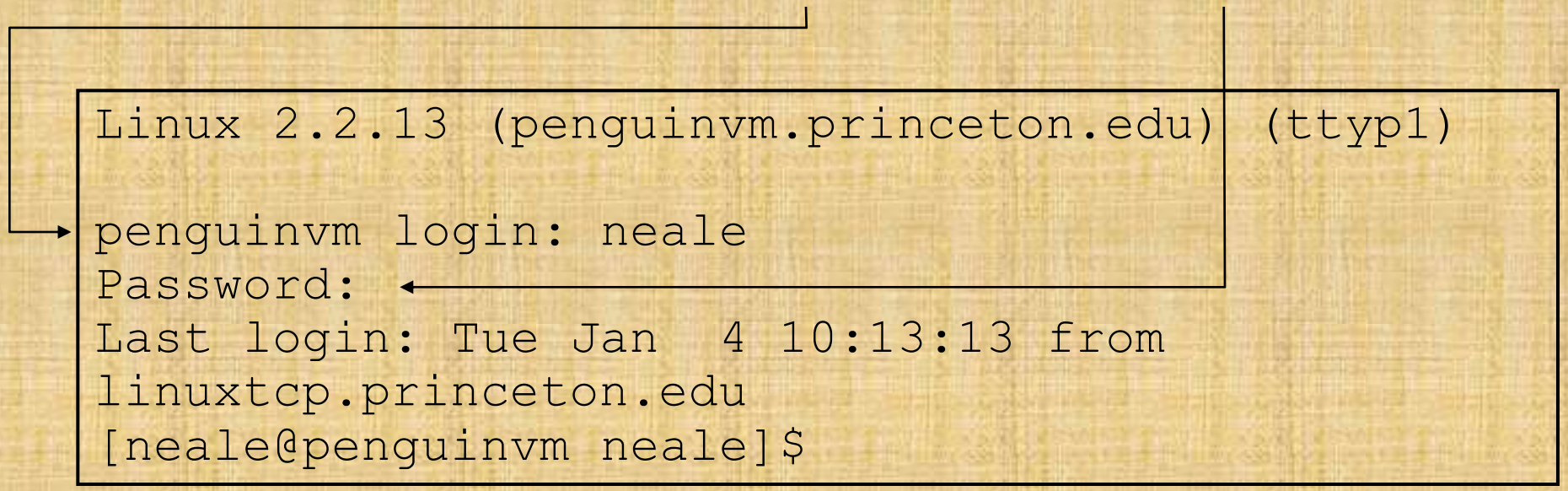




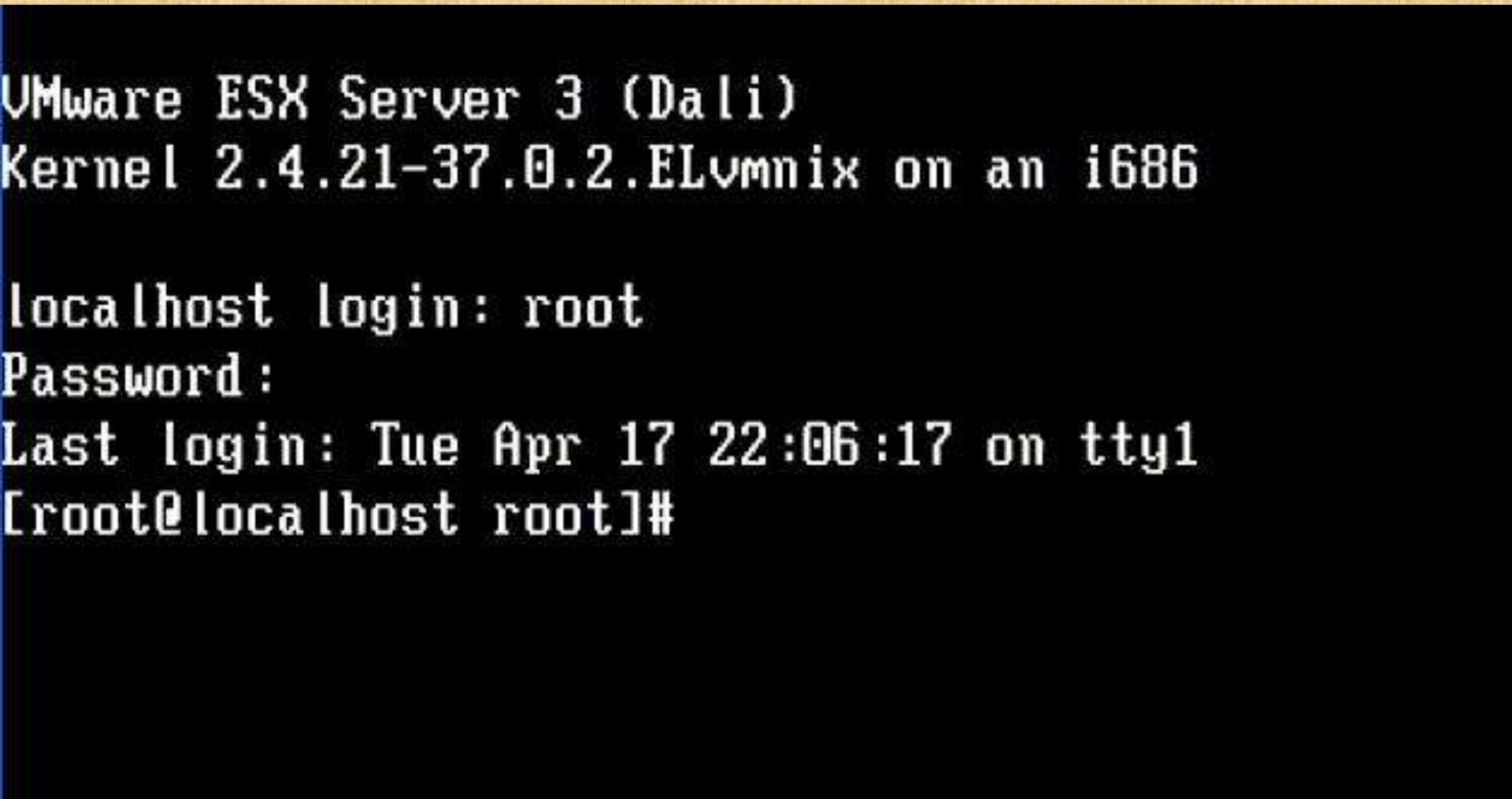

Desktop of Linux

# Logging In

- Press Alt+Ctrl+F1 to go to the command promt..

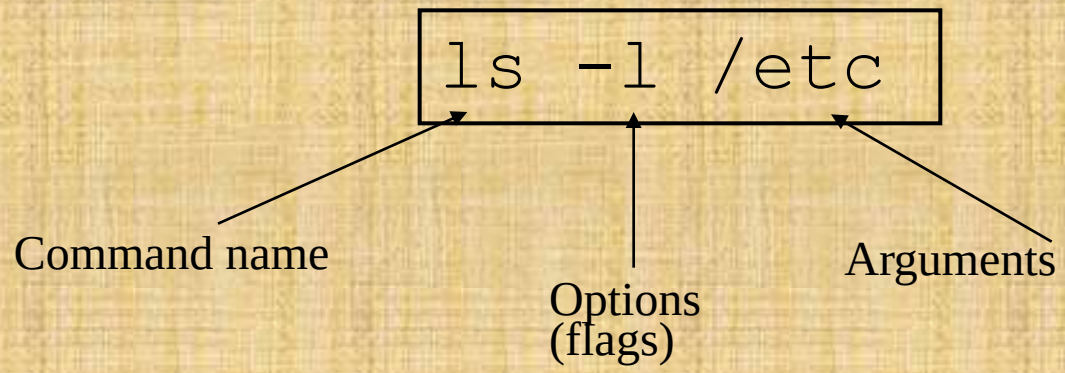


# Login in Linux



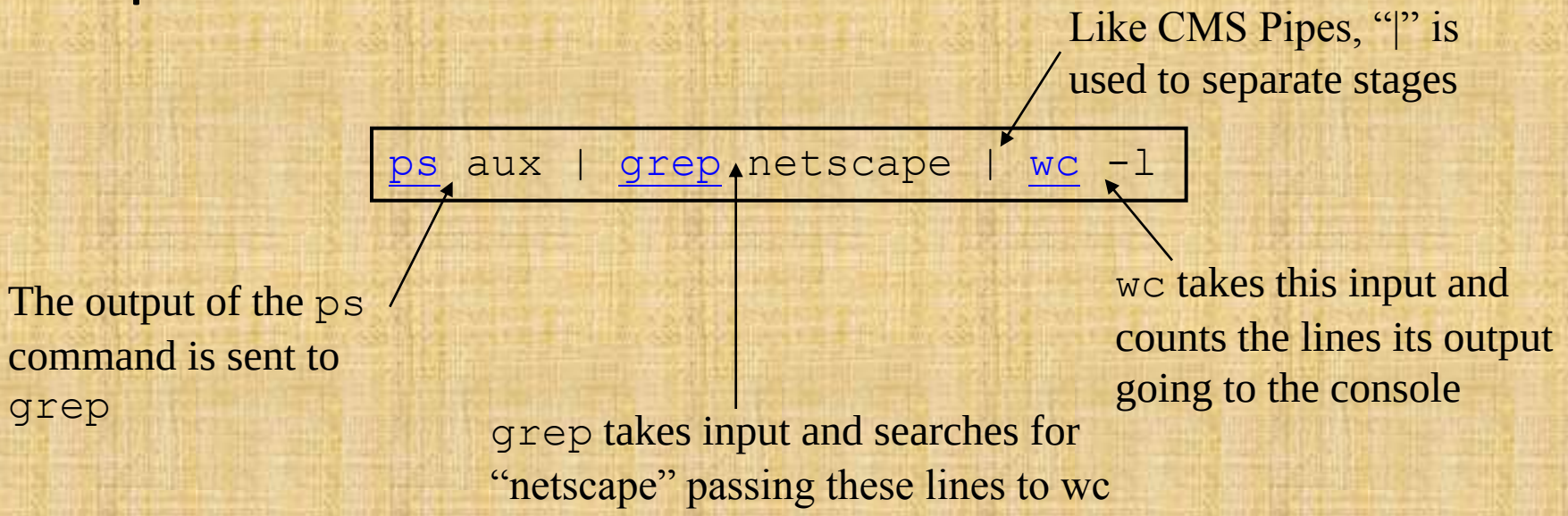
# Linux Command Basics

- To execute a command, type its name and arguments at the command line



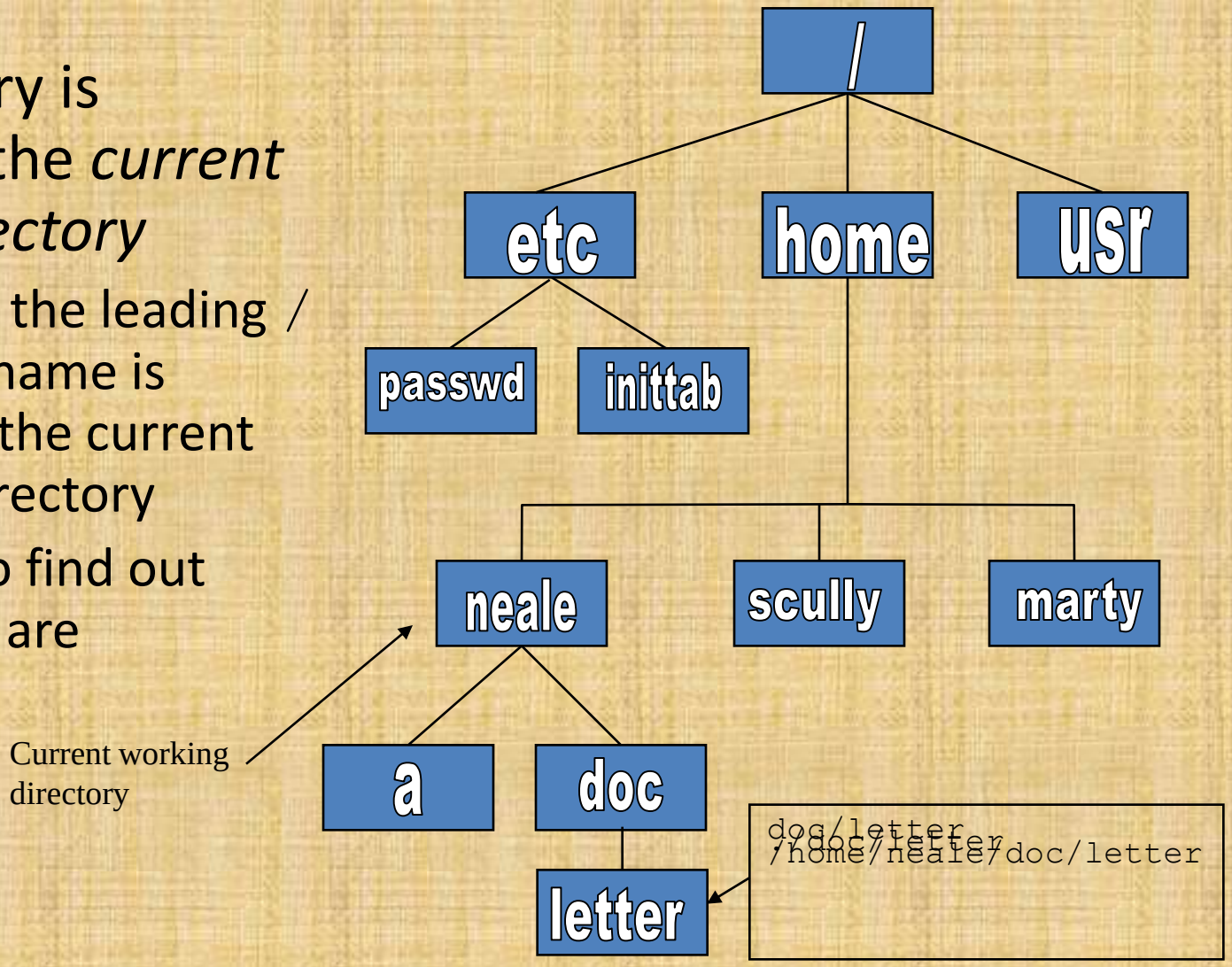

# Connecting commands with Pipes

- Not as powerful as CMS Pipes but the same principle
- The output of one command can become the input of another:



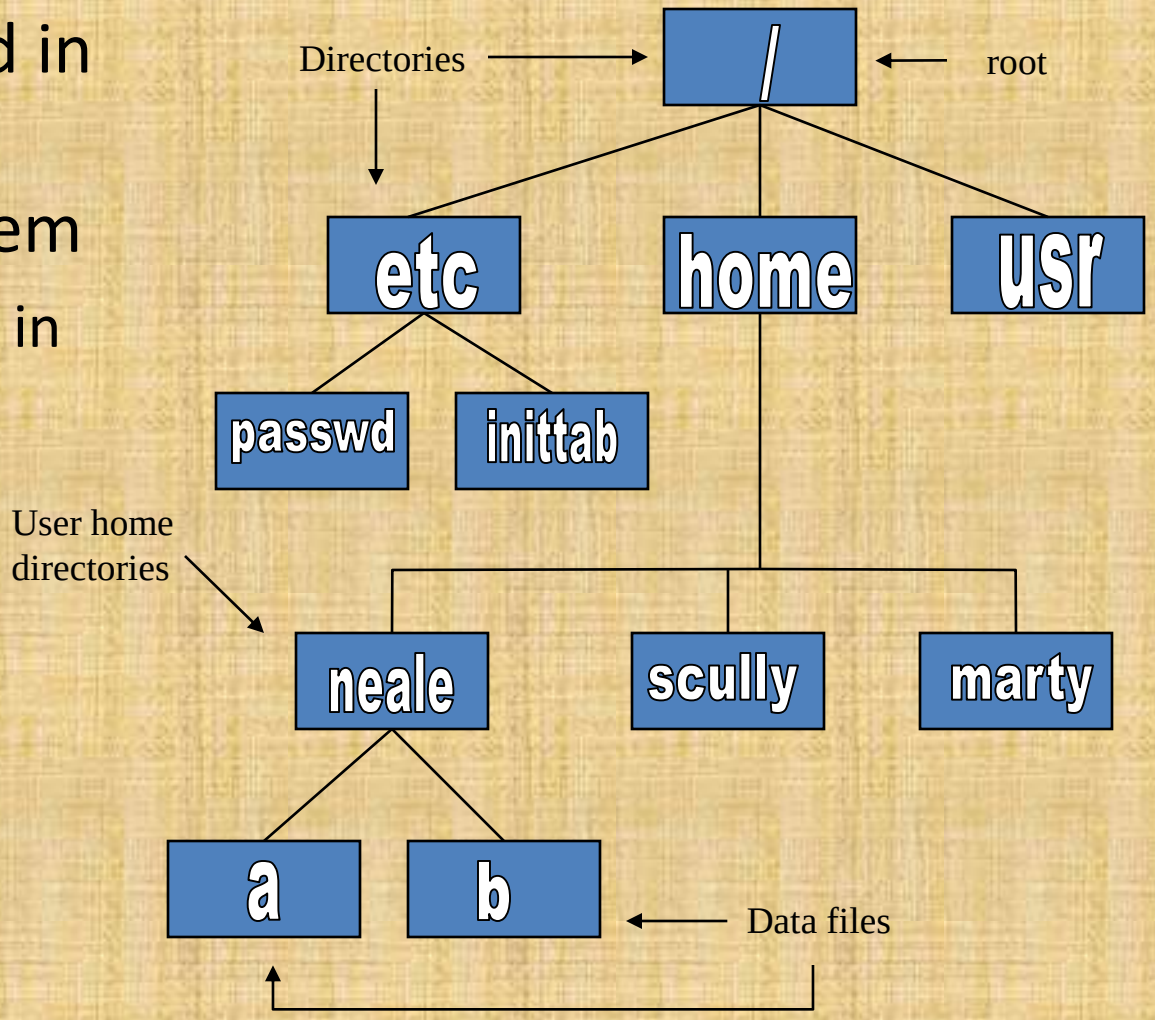
# The Current Directory

- One directory is designated the *current working directory*
  - if you omit the leading / then path name is relative to the current working directory
  - Use `pwd` to find out where you are



# Linux File System Basics

- Linux files are stored in a single rooted, hierarchical file system
  - Data files are stored in directories (folders)
  - Directories may be nested as deep as needed



# Why did we choose Linux for Internet

- **Was available with all necessary Internet software 6 years back when Microsoft Windows was not ready for Internet.**

- **Low cost compared to any other alternative. Sun Solaris, Novell, MS Windows, etc.**

- **Extremely reliable.No reboots in 450+ days.**

- **Easy to setup. Takes 4 easy steps to setup a mail server. Download a CD, Burn it, Boot from it and the server is ready for adding users and setting passwords.**

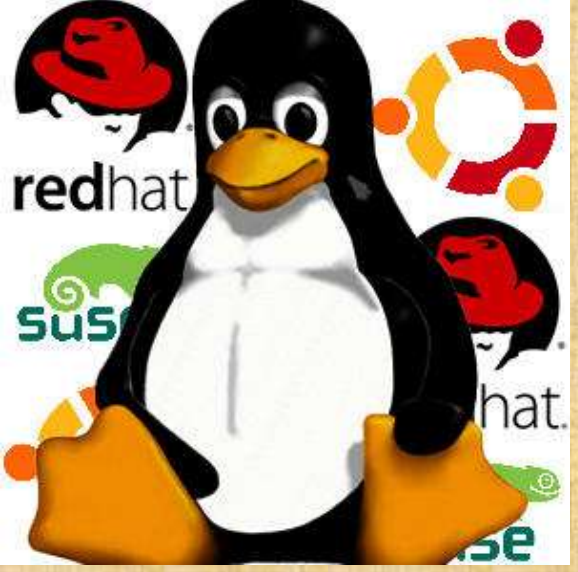
- **Lower hardware requirements. Pentium computer can act as a fast mail server for 30 users.**


## Linux Provide Security

As there is a limited access Of user to basic files and folders, in Linux network it provide security to user's privacy. Without disclosing the secured data Linux acts as a efficient server.

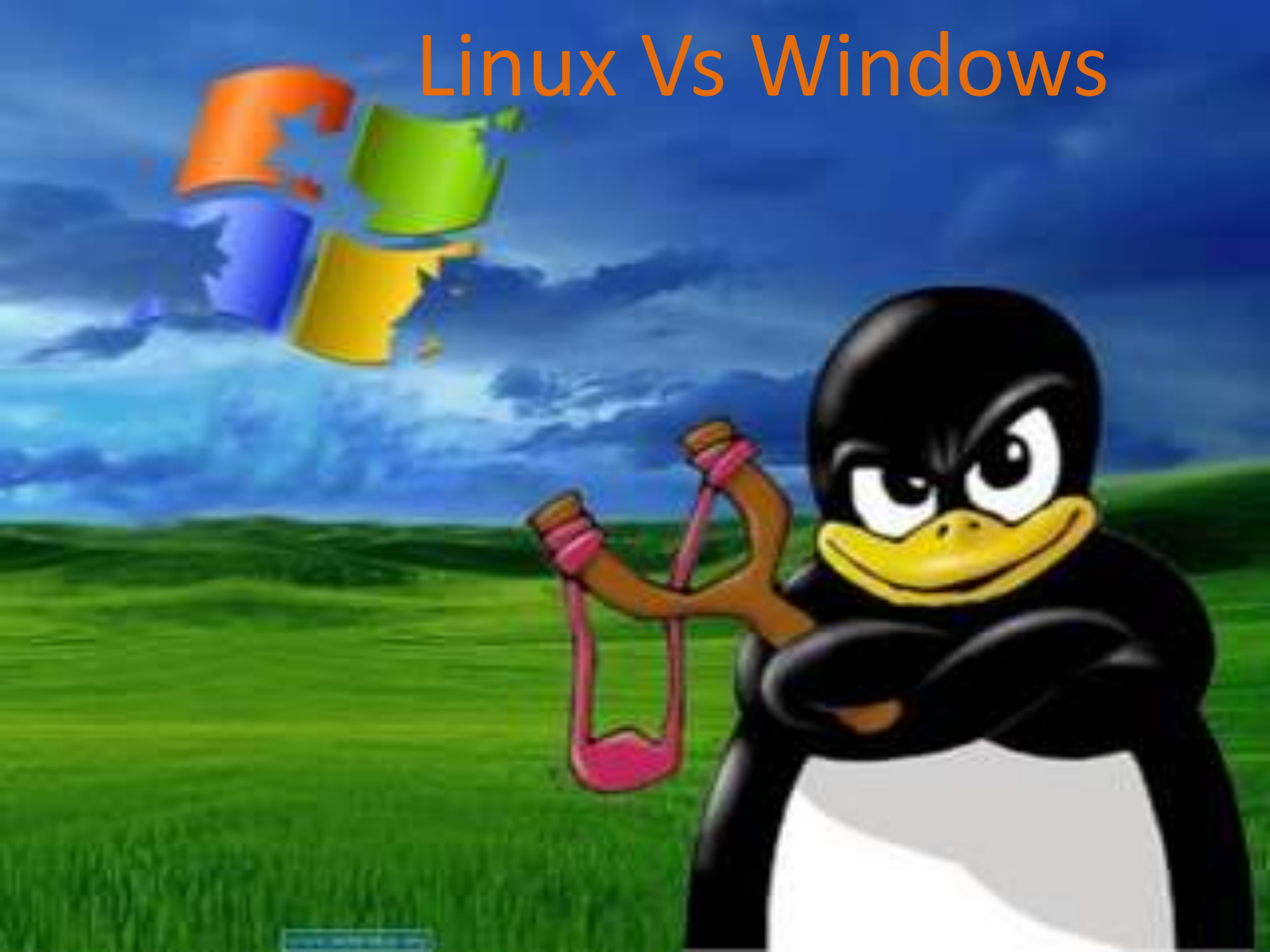
# Linux is Virus Free!!


Linux is "virus-free" in that there are essentially no viruses for Linux in the wild, although research viruses certainly do exist.




There are other reasons, of course. "Normal" user accounts have much more limited access to the rest of the system, so making the corruption of system binaries much harder. Many distributions provide intrusion-detection software for detecting binary changes. Distributions release regular updates, which means a virus will be overwritten in a relatively short timeframe. Mandatory access controls are becoming more popular, limiting what a virus can do even if it did infiltrate a system binary.

# Linux Vs Windows



# Statistics

**Evans Data survey in 2004 says,”don't be surprised when Linux overtakes Windows to become the main focus for developers.”**

**Linux servers made up more than 11 percent of all servers shipped in India in the first quarter**

**Revenue from sales of Linux-based servers surged 90 percent in the fourth quarter 2002.**

**Percentage growth in the number of servers number up to June 30, 2009**

- **Linux servers = 48%**
- **Microsoft servers = 13%**

**Microsoft and Linux Are still, the two most popular operating Systems..**


# Linux is Cheaper

# Table Showing cost difference

| COST | | |
|---|---|---|
| | LINUX | WINDOWS |
| Online Downloads | Free | Not Available |
| Retail Price, CD | $50 | $300 |

# Linux Applications for Servers

- **All common Internet services available – Mail, Web, DNS,  etc.**
- **Easy administration using web based interface**
- **Very low resource utilization. A 486 66MHz can be your firewall**
- **No cost to setup a server. As easy as download a CD and install.**
- **Lower maintenance. Keeps running for years.**

# Linux vs. Windows

- Keeping up to date
  - By Upgrading
  - Linux upgrades faster than Windows
- Compatibility
  - Linux is Backward Compatible unlike Windows

# Linux Commands

# Basic Linux Commands

- File Handling
- Text Processing
- System Administration
- Process Management
- Archival
- Network
- File Systems
- Advanced Commands

## Sources to learn commands??

Primary – man(manual) pages.

#1)man <command> shows all information about the command

#2)<command> help shows the available options for that command

# File Handling commands

- mkdir – make directories

Usage: mkdir [OPTION] DIRECTORY...

eg. mkdir prabhat

- ls – list directory contents

Usage: ls [OPTION]... [FILE]...

eg. ls, ls l,

ls prabhat

- cd – changes directories

Usage: cd [DIRECTORY]

eg. cd prabhat

# File Handling(contd...)

- pwd print

name of current working directory

Usage: pwd

- vim – Vi Improved, a

programmers text editor

Usage: vim [OPTION] [file]...

eg. vim file1.txt

**cp – copy files and directories**

Usage: cp [OPTION]... SOURCE DEST

eg. cp sample.txt sample_copy.txt

cp sample_copy.txt target_dir

**mv – move (rename) files**

Usage: mv [OPTION]... SOURCE DEST

eg. mv source.txt target_dir

mv old.txt new.txt

File Handling(contd...)

## File Handling(contd...)

- rm remove

files or directories

Usage: rm [OPTION]... FILE...

eg. rm file1.txt , rm rf some_dir

- find – search for files in a directory hierarchy

Usage: find [OPTION] [path] [pattern]

eg. find file1.txt, find name file1.txt

- history – prints recently used comma

Usage: history

# Text Processing

- cat – concatenate files and print on the standard output

Usage: cat [OPTION] [FILE]...

eg. cat file1.txt file2.txt

cat n

file1.txt

- echo – display a line of text

Usage: echo [OPTION] [string] ...

eg. echo I love India

echo $

## Text Processing(contd...)

- grep print

lines matching a pattern

Usage: grep [OPTION] PATTERN [FILE]...

eg. grep i

apple sample.txt

- wc print

the number of newlines, words, and bytes in files

Usage: wc [OPTION]... [FILE]...

eg. wc file1.txt

wc L

file1.txt

# System Administration

- chmod – change file access permissions

Usage: chmod [OPTION] [MODE] [FILE]

eg. chmod 744 calculate.sh

- chown – change file owner and group

Usage: chown [OPTION]... OWNER[:[GROUP]] FILE...

eg. chown remo myfile.txt

## System Administration (contd...)

- **su – change user ID or become superuser**

Usage: su [OPTION] [LOGIN]

eg. su remo, su

- **passwd – update a user's authentication tokens(s)**

Usage: passwd [OPTION]

eg. passwd

- **who – show who is logged on**

Usage: who [OPTION]

eg. who , who b

, who q

# Advanced Commands

- reboot – reboot the system

Usage: reboot [OPTION]

eg. reboot

- poweroff – power off the system

Usage: poweroff [OPTION]

eg. poweroff

# Further Reference

**www.linux.com** - News, Software, Documentation, Tutorials, etc.

**www.linuxhq.com** - Another great Linux resource site.

**www.linuxjournal.com** - The Monthly Magazine for Linux Community

**www.tldp.org** - The Linux Documentation Project. Excellent help for beginners.

**www.userfriendly.org** - Linux cartoon strips

# Finished.....