Day 6 - 31st May 2025

Linux (cont.)

Plz refer :-

Doc 11, 13, 14,15 - in Docs to Study

Task 1:

RegEX Symbols in linux

List them down with description

Basic Symbols:

. - Matches any single character

\* - Matches zero or more occurrences of previous character

^ - Matches beginning of line

$ - Matches end of line

[] - Matches any single character in brackets

[^] - Matches any single character NOT in brackets

Quantifiers:

? - Matches zero or one occurrence

+ - Matches one or more occurrences

{n} - Matches exactly n times

{n,} - Matches at least n times

{n,m} - Matches at least n times, but not more than m times

Character Classes:

[0-9] - Matches any digit

[a-z] - Matches any lowercase letter

[A-Z] - Matches any uppercase letter

[a-Z] - Matches any letter

\w - Matches word characters [a-zA-Z0-9\_]

\W - Matches non-word characters

\d - Matches digits [0-9]

\D - Matches non-digits

\s - Matches whitespace (space, tab, newline)

\S - Matches non-whitespace

Special Characters:

\ - Escape character

| - Alternation (OR)

() - Groups expressions

\b - Word boundary

\B - Non-word boundary 9

5 min 9.43 to 9.48

Task 2:

If you are aware of Linux OS.. can you tell me the feature of Linux.

Linux is like a free, customizable, and secure digital Swiss Army knife for computers. It's open-source, meaning anyone can see and improve its code, making it highly transparent and trustworthy. Think of it as a system that can run on almost anything - from tiny smartphones to massive supercomputers! It's incredibly stable (rarely crashes), efficient (runs well even on older computers), and secure (very resistant to viruses). Users can completely customize how it looks and works, unlike the one-size-fits-all approach of other operating systems. Linux is great at multitasking and can update most of its parts without needing to restart. It comes in different flavors (called distributions) like Ubuntu, Fedora, or Mint, each designed for different types of users. The best part? It's completely free, and there's a massive community of users ready to help if you get stuck. Whether you're a beginner or a tech expert, Linux has something for everyone while keeping your data private and secure.

5 min 9.49 to 9.53

Task 3:

What is Kernal ? can you explain about it in your words..

Kernel IS the heart of your computer system - a tireless worker that never sleeps. When you turn on your computer, the kernel springs to life first, like a master coordinator waking up before everyone else. It immediately starts mapping out the entire system, discovering what hardware is available - from the CPU's processing power to the last byte of RAM, from the smallest USB port to the largest hard drive. As the system comes alive, the kernel creates an efficient system of communication highways between all these components. It's like having a universal translator who understands every language - when a program needs something, it speaks to the kernel, and the kernel translates this request into a language the hardware understands. The kernel maintains strict security at all times, acting as a vigilant gatekeeper - no program can directly access hardware or memory without going through the kernel's security checks. It's constantly juggling multiple tasks: managing memory like a strict librarian (deciding who gets what space and for how long), scheduling processes like a precise timekeeper (ensuring every program gets its fair share of CPU time), and handling hardware requests like a skilled traffic controller (making sure data flows smoothly between components). When resources run low, it makes smart decisions about what to prioritize, and when errors occur, it handles them gracefully to maintain system stability. All of this happens in microseconds, in a continuous cycle, creating the seamless computing experience we take for granted.

5 min 9.54 to 9.59

Oral —>

Task 4:

BASH in Lonux full form and Explanation

BASH (Bourne Again Shell)

BASH is like Linux's command interpreter and default interface. Think of it as the translator between you and your computer - when you type commands, BASH understands them and tells the computer what to do. It's called "Bourne Again" because it's an improved version of the original Bourne Shell (sh).

5 min 10 to 10.05

Oal →

Task 5:

Now that you know Linux is also an Operating System like Windows..

What do you think is the difference between LInux and Windows

Think of Linux as a free, open cookbook where anyone can see and modify recipes (source code), while Windows is like a secret recipe book owned by Microsoft. Linux is more customizable, generally more secure, and free to use. It rarely needs reboots and is less vulnerable to viruses. Windows is more user-friendly for beginners and has better software compatibility, especially for games and business applications.

8 min 10.06 to 10.14

Task 6:

What are the basic components of Linux? Describe each in detail with diagrams.

Linux is built like a layer cake: At the bottom is the Kernel (the core that talks to hardware), then the Shell (the interpreter of your commands), followed by Applications (programs you use). There's also the Bootloader (starts the system), System Services (background tasks), and the Desktop Environment (the visual interface you see).

10.15 to 10.25 10 min

Oral →

Task 7:

Is it legal to edit Kernal ? when do you think we have to in case?

Yes, it's legal to edit the kernel - that's the beauty of open source! You might need to edit it when adding support for new hardware, improving performance for specific tasks, or fixing security issues. However, it's like performing heart surgery - only do it if you really know what you're doing!

10.26 to 10.31 5 min

Task 8:

What is LILO? Explain

LILO is like a starter key for your Linux system - it's one of the original bootloaders that helps start your computer and load Linux. Though mostly replaced by GRUB now, it's historically significant and still used in some systems.

10.32 to 10.36 5 min

how many of you have gone through techadamy Linux plz raise ur hand

19 pax done.. Completely —> Good Job Guys

Task 9:

What is shell? How many shells are there and what are they ? can you explain.

A shell is your command interpreter - like a translator between you and the computer. Main types include:

Bash (most common)

sh (original shell)

csh/tcsh (C shell)

ksh (Korn shell)

zsh (Z shell, very modern and feature-rich

10.37 to 10.47 10 min

Task 10:

What is swap space?

Think of swap space as extra RAM on your hard drive. When your computer runs out of physical memory, it uses this space like an overflow parking lot - slower than RAM but prevents system crashes from memory shortages.

2 min 10.48 to 10.50

Task 11:

What is Mount ? how do you mount and unmount file system in Linux?

Mounting is like plugging in a USB drive - it's the process of making storage devices accessible to your Linux system. You can mount drives using the mount command and unmount them with umount. It's how Linux organizes all storage devices into one unified file system.

10 min 10.51 to 11.02

Plz raise hand once done till here.. So that we can go for oral..

Task 12:

What is chmod command ? how to use it?

chmod (Change Mode) controls file permissions in Linux

# Numeric Method

chmod 755 file.txt # rwxr-xr-x

chmod 644 file.txt # rw-r--r--

# Symbolic Method

chmod u+x file.txt # Add execute permission for user

chmod go-w file.txt # Remove write permission for group and others

Numbers mean:

4 = read (r)

2 = write (w)

1 = execute (x)

5 min

Task 13:

Can you add a new user account? Crate a new user in different ways and paste ss

*# Method 1: useradd*

*sudo* useradd newuser

*sudo* passwd newuser

*# Method 2: adduser (more user-friendly)*

*sudo* adduser newuser

*# Method 3: With home directory*

*sudo* useradd -m -d /home/newuser newuser

5 min

Task 14:

Can you change the password of a user?

How do you do that? Plz share ss

*# For current user*

passwd

*# For other user (needs sudo)*

*sudo* passwd username

*# Force user to change password at next login*

*sudo* passwd -e username

5 min

Task 15:

What is diff between Process and Thread?

Process:

* Like a complete restaurant with its own kitchen, staff, and resources
* Independent program running in memory
* Has its own resources and memory space
* Heavier and more resource-intensive
* Example: Running Chrome browser

Thread:

* Like different chefs working in the same kitchen
* Lightweight units within a process
* Shares resources with parent process
* Faster to create and switch between
* Example: Chrome tabs within the browser

Plz explain

8 min

Task 16:

Doc 14 Linux Grep commands in docs to study folder .. plz work on it..

33 pax done out of 44

If all 16 tasks done.. Plz raise your hands

Task 17:

AWK commands in doc 15 Linux AWK commands.

—---------------------------------------------------------------------------

Lunch Break

1.35 to 2.35

—-------------------------------------------------------------------------

Task 18:

How to check file access permission in Linux?

Hint use:

Ls -l

ls -l filename

# Example output:

# -rw-r--r-- 1 user group 123 May 31 10:00 filename

Task 19:

What are the default permissions for a new file ?

Plz find out for

Owner → ?

Group → ?

All and others → ?

Owner → rw- (read, write) = 6

Group → r-- (read only) = 4

Others → r-- (read only) = 4

Default is typically: 644

Juz write no ss req

Task 20:

What is the command to change the permisssion to read only for the owner, group and all other users

HInt: chmod 444 filename

chmod 444 filename

# Results in: r--r--r--

# Everyone can read, nobody can write or execute

Task 21:

Can you change the file permissions to match the following:

* owner: Read and Write
* group: Read
* other: no permissions (None)

chmod 640 filename

# Results in: rw-r-----

# 6 (rw-) for owner

# 4 (r--) for group

# 0 (---) for others

Task 22:

What was the command for changing the file permissions to -rw-r-----?

Hint : use chmod 640 filename

chmod 640 filename

# Creates: -rw-r-----

Task 23:

Change chmod.exercises permissions to -rwxr-x--x

Change the file permissions to match the following:

chmod 751 filename

# Owner: rwx (7)

# Group: r-x (5)

# Others: --x (1)

owner: Read, Write and Execute

group: Read and Execute

other: Execute

Task 24:

What was the command for changing the file permissions to -rwxr-x--x

Hint : use chmod 751 filename

chmod 751 filename

# Creates: -rwxr-x--x