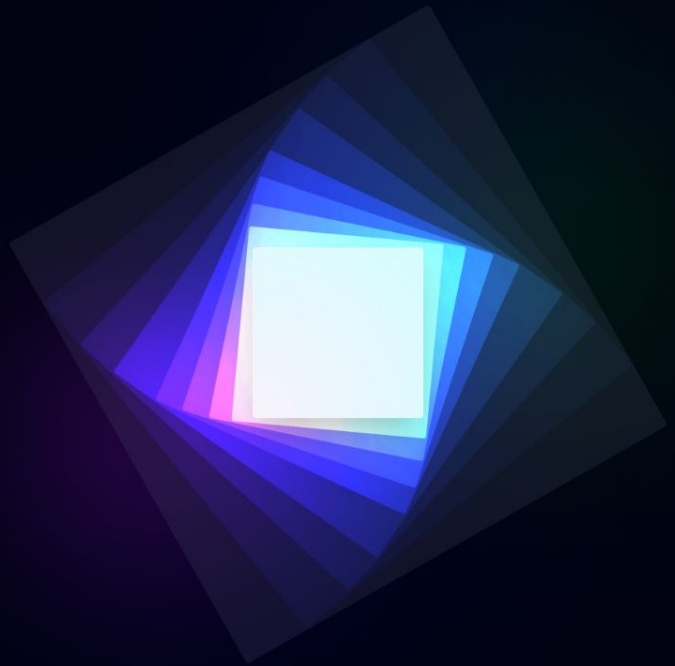
Gnu/Linux Users Club

IIIT Bhopal

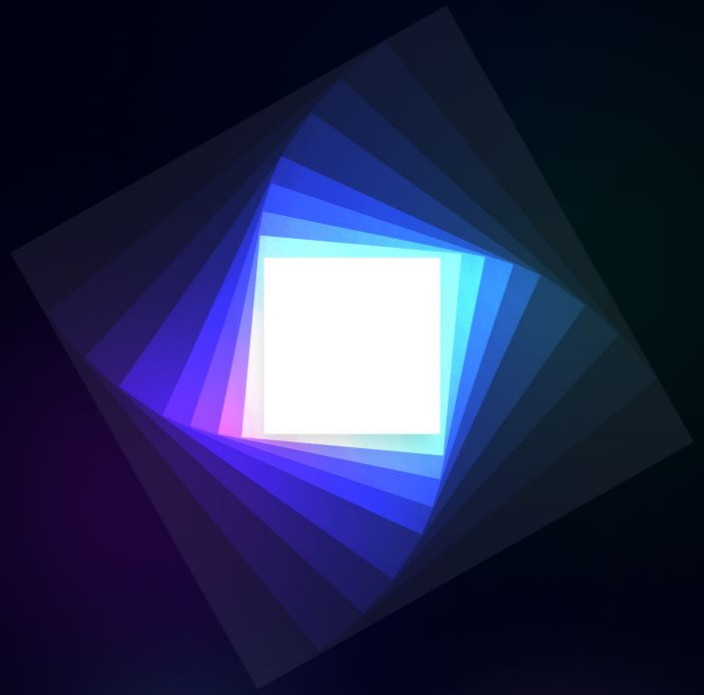
init



Starting soon

GUC IIIT Bhopal

Welcomes You to Our Intro Session

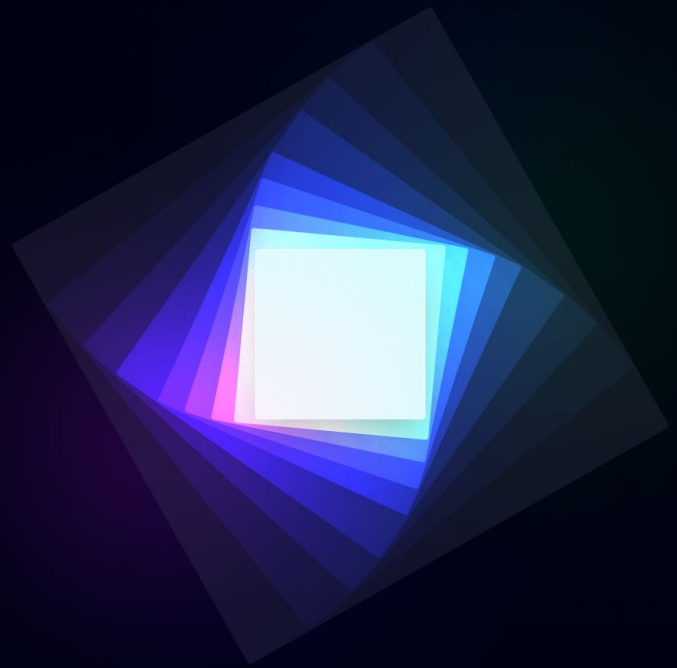


Gnu/Linux Users Club

IIIT Bhopal

What is GUC ?

A club where all Linux enthusiasts come together to provide support and education.



Introducing the Team

Faculty Mentor

Mr. Yatendra Sahu

Gnu/Linux Users Club
IIIT Bhopal

Introducing the Team

Club Secretaries

Umang Bhalla

Shubham Vyas

Kushagra Kaushal

Tanav Singh Bajaj

Gaurav Gupta

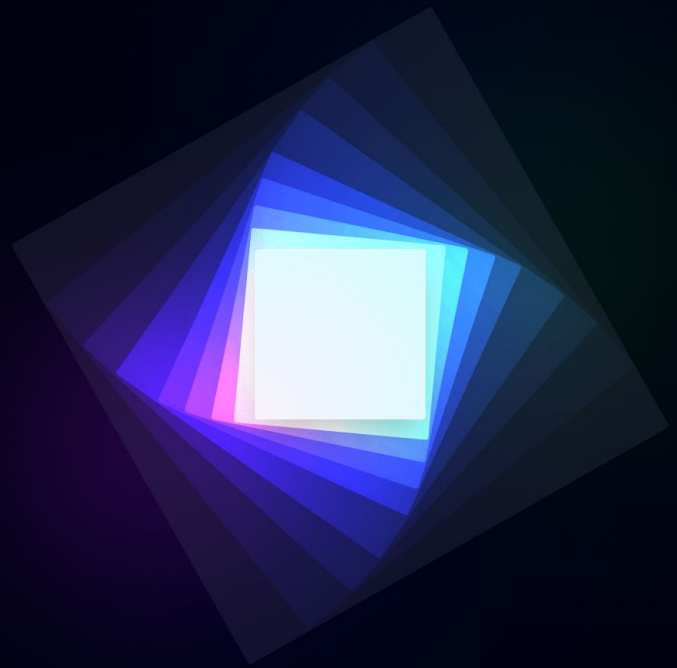
Core Team

Sarthak Batham

Prem Karira

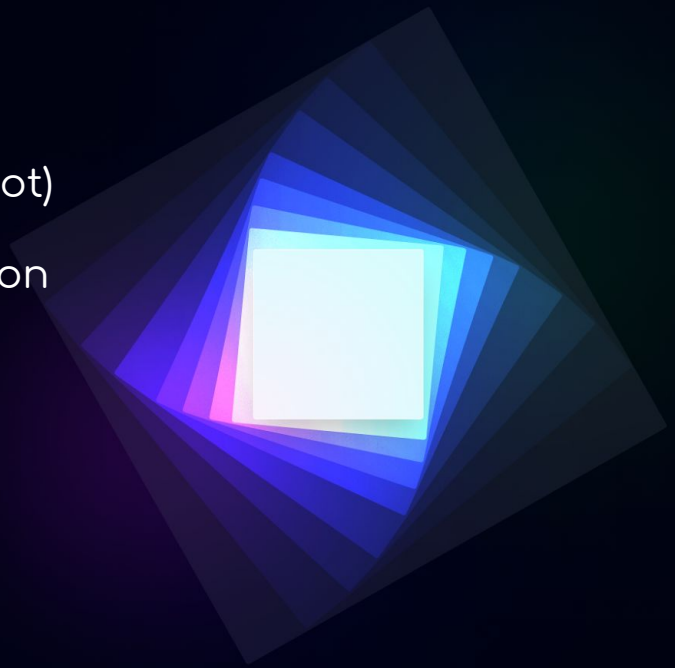
Narun Yadav

Kartik Pant



Our 6 months plan

- Init Session (Intro)
- Ways of linux installation (WSL/VM/Dual Boot)
- Filesystems and system services/ Automation
- Ricing + Contest
- Cyber Security
- Bash Scripting
- DevOps and CI/CD



OUR OBJECTIVES

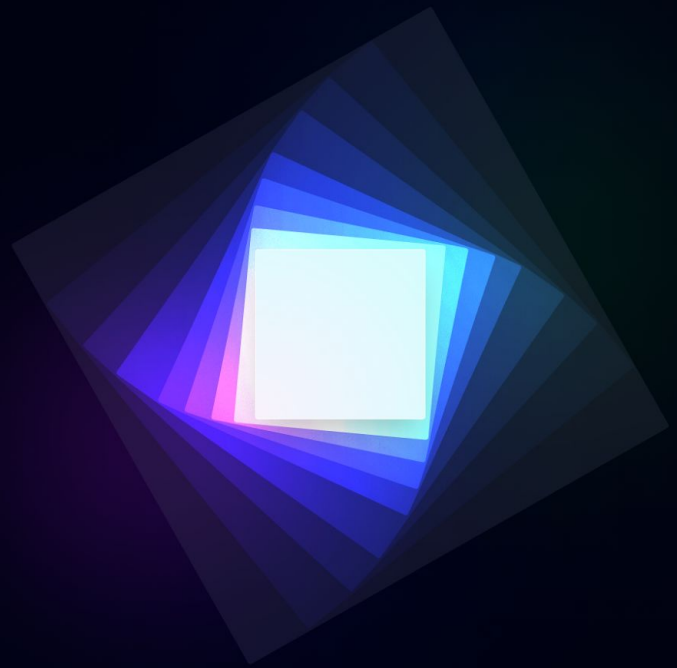
Gnu/Linux Users Club
IIIT Bhopal

1. To make people aware of the profits of Linux as an operating system

2. To guide people in path of DevOps

3. To help set-up development environments on Linux

4. To troubleshoot common problems faced by new Linux users



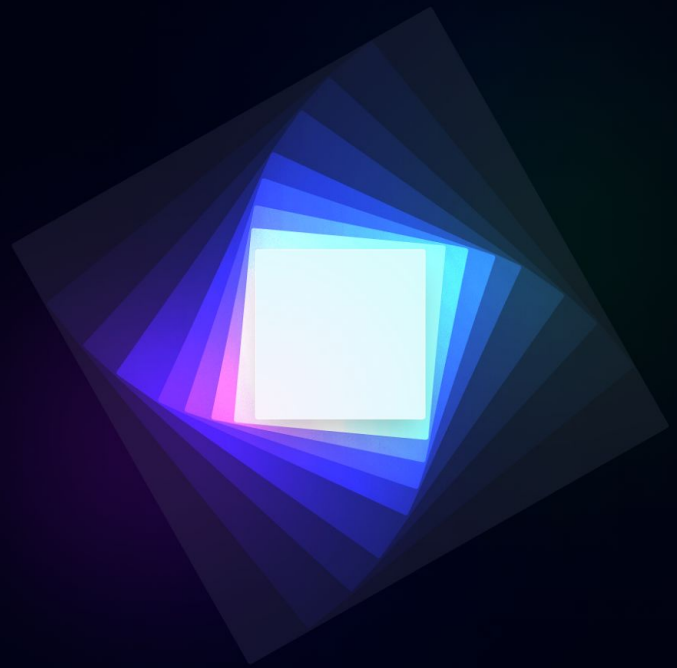
OUR OBJECTIVES

5. To organise webinars and provide platforms to discuss ideas related to this topic

6. To get people aware about GNU, free software foundation (FOSS) and open-source.

7. To help students use GitHub at an industry level.

8. To learn and get people aware of software licencing.

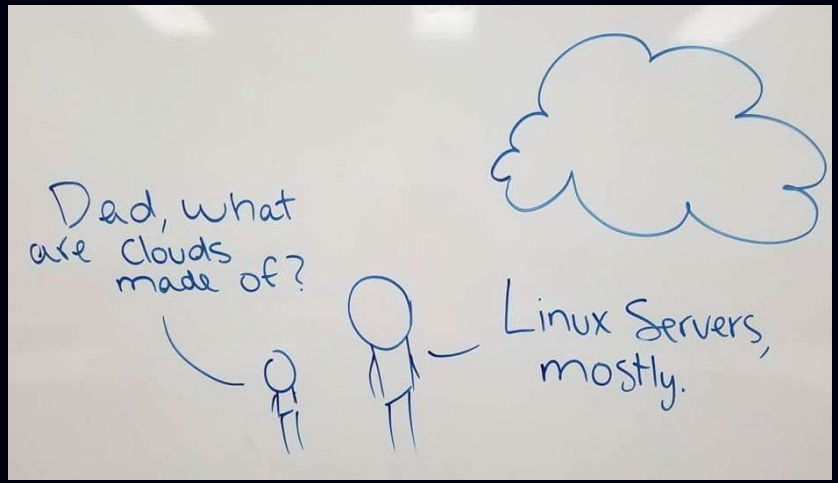


What is Linux?

Linux is an Unix-like operating system based on Linux Kernel. The software part of Linux OS is called GNU.

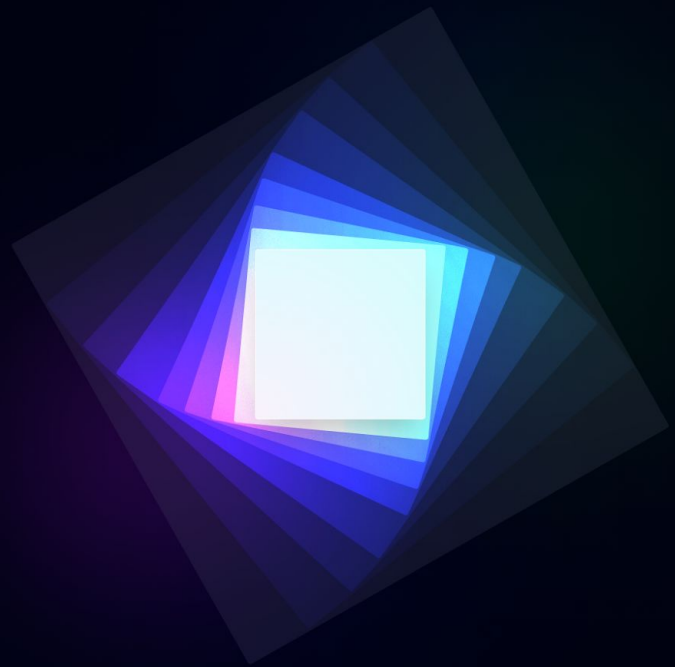
GNU : - GNU's not Unix

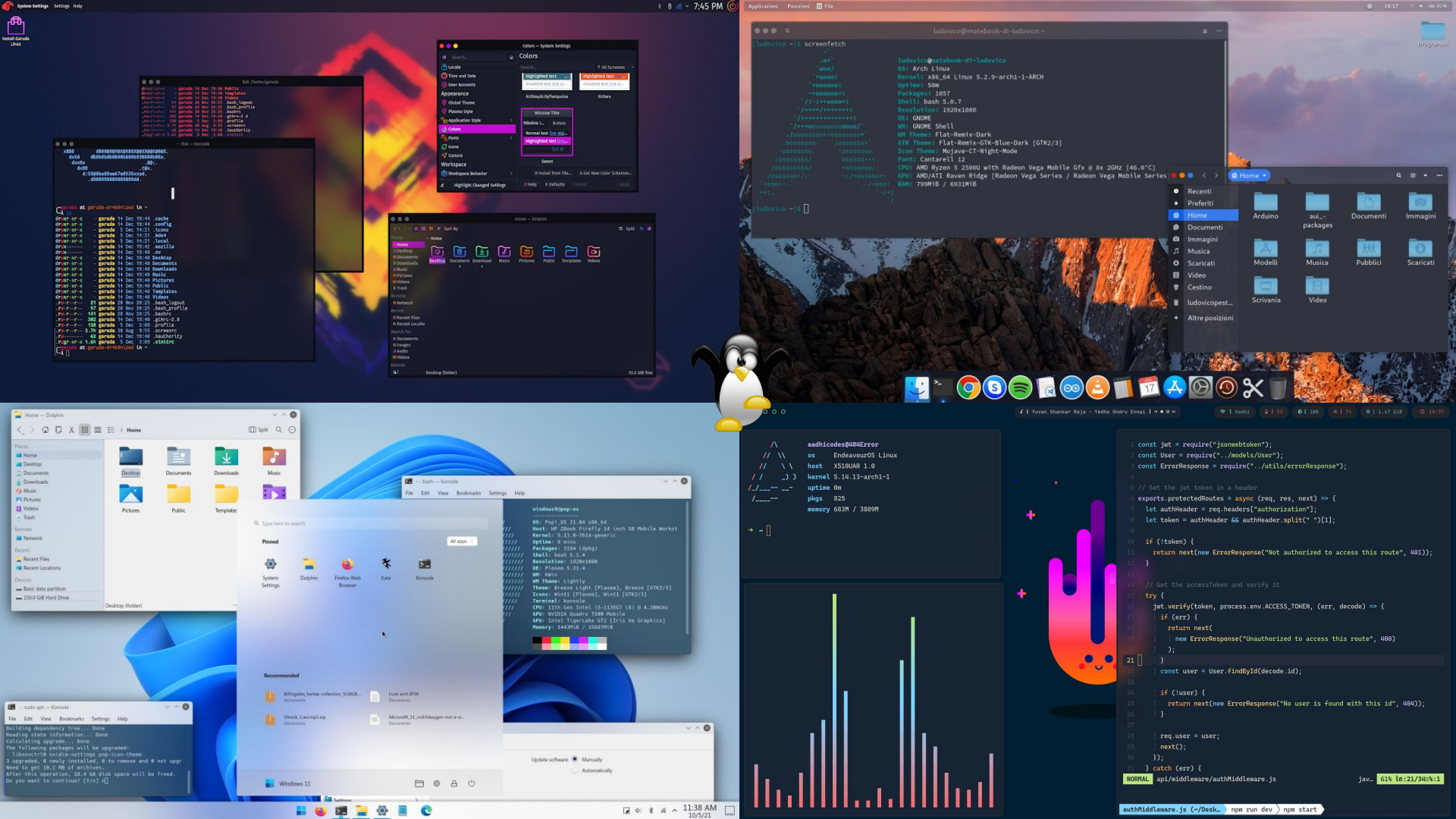
GNU is a collection of free softwares.



Where you will find Linux : -

1. Cloud Platforms
2. Android
3. Smart TVs and devices
4. Tesla Cars
5. Sophia Humanoid Robot
6. NASA Perseverance Mars Rover





7:45 PM
Colors — System Settings
Home — Dolphin
ludovico@matebook-di-ludovico:~
ludovico@matebook-di-ludovico
OS: Arch Linux
Kernel: x86_64 Linux 5.2.9-arch1-1-ARCH
Uptime: 50m
Packages: 1057
Shell: bash 5.0.7
Resolution: 1920x1080
DE: GNOME
WM: GNOME Shell
WM Theme: Flat-Remix-Dark
GTK Theme: Flat-Remix-GTK-Blue-Dark [GTK2/3]
Icon Theme: Mojave-CT-Night-Mode
Font: Cantarell 12
CPU: AMD Ryzen 5 2500U with Radeon Vega Mobile Gfx @ 8x 2GHz [46.0°C]
GPU: AMD/ATI Raven Ridge [Radeon Vega Series / Radeon Vega Mobile Series]
RAM: 799MiB / 6931MiB
Home
Recenti
Preferiti
Documenti
Immagini
Musica
Scaricati
Video
Cestino
Altre posizioni
Arduino
Documenti
Immagini
Modelli
Musica
Pubblici
Scaricati
Scrivania
Video
Desktop
Documents
Downloads
Music
Pictures
Public
Templates
Pinned
System Settings
Dolphin
Firefox Web Browser
Kate
Konsole
Recommended
Windows 11
11:38 AM
10/5/21
aadhicodes@404Error
os EndeavourOS Linux
host X510UAR 1.0
kernel 5.14.13-arch1-1
uptime 0m
pkgs 825
memory 683M / 3809M
const jwt = require("jsonwebtoken");
const User = require("../models/User");
const ErrorResponse = require("../utils/errorResponse");
// Set the jwt token in a header
exports.protectedRoutes = async (req, res, next) => {
let authHeader = req.headers["authorization"];
let token = authHeader && authHeader.split(" ")[1];
if (!token) {
return next(new ErrorResponse("Not authorized to access this route", 401));
}
// Get the accessToken and verify it
try {
jwt.verify(token, process.env.ACCESS_TOKEN, (err, decode) => {
if (err) {
return next(
new ErrorResponse("Unauthorized to access this route", 400)
);
}
const user = User.findById(decode.id);
if (!user) {
return next(new ErrorResponse("No user is found with this id", 404));
}
req.user = user;
next();
});
} catch (err) {
NORMAL api/middleware/authMiddleware.js
authMiddleware.js (~/Desk… npm run dev npm start

21:54
Fri 16 April
RAM
591 M / 3.74 G
CPU
57%
Temp
44°C
Storage
90.9 G / 457 G
Battery
discharging 78%
Wifi
FERDIAN
Is not playing
Music
21:54
Fri 16 Apr 2021
ferdi@kennedy
Arch x86_64
Openbox
zsh
urxvt
6 mins
~

CPU 4%
147 updates
735 MB
0
06:26
sid@sid
OS: Void Linux x86_64
Uptime: 37 mins
Packages: 725 (xbps-query)
Shell: bash 5.1.4
Resolution: 1366x768
WM: bspwm
Terminal: st
CPU: Intel Pentium N3710 (4) @ 2.560GHz
GPU: Intel Atom/Celeron/Pentium Processo
Memory: 1078MiB / 3780MiB

```
  \\  \\ //      drishal@nixos
 =\\__\\/ //     os      NixOS 21.11 (Porcupine)
   //   \\//     host    20Y2CTO1WW ThinkPad P14s Gen 1
==//     //==   kernel  5.12.4
 //\\___//       uptime  12h 58m
// /\\  \\==     pkgs    1950
  // \\  \\       memory  4194M / 13784M
```

~ ❯ neofetch

drishal@nixos

OS: NixOS 21.11 (Porcupine) x86_64
Host: 20Y2CTO1WW ThinkPad P14s Gen 1
Kernel: 5.12.4
Uptime: 12 hours, 58 mins
Packages: 1950 (nix-system), 195 (nix-user), 47 (nix-
Shell: zsh 5.8
Resolution: 1920×1080
DE: none+xmonad
WM: xmonad
Theme: Arc-Dark [GTK2/3]
Icons: Papirus-Dark [GTK2/3]
Terminal: kitty
Terminal Font: FiraCode Nerd Font
CPU: AMD Ryzen 7 PRO 4750U with Radeon Graphics (16)
GPU: AMD ATI 07:00.0 Renoir
Memory: 4488MiB / 13784MiB

~ ❯ sudo nixos-

completing external command

nixos-build-vms	nixos-generate-config	nixos-option
nixos-container	nixos-help	nixos-rebuild
nixos-enter	nixos-install	nixos-version

Emacs Is More Than A Text Editor!

66 packages loaded in 1.006735 seconds

Recent Files: (r)
- ~/zshrc.org
- ~/.emacs.d/config.org
- ~/.alacritty.yml
- ~/.config/nixpkgs/home.nix
- ~/.config/rofi/config.rasi

Agenda for the coming week:
--- No items ---

Bookmarks:
--- No items ---

Projects:
--- No items ---

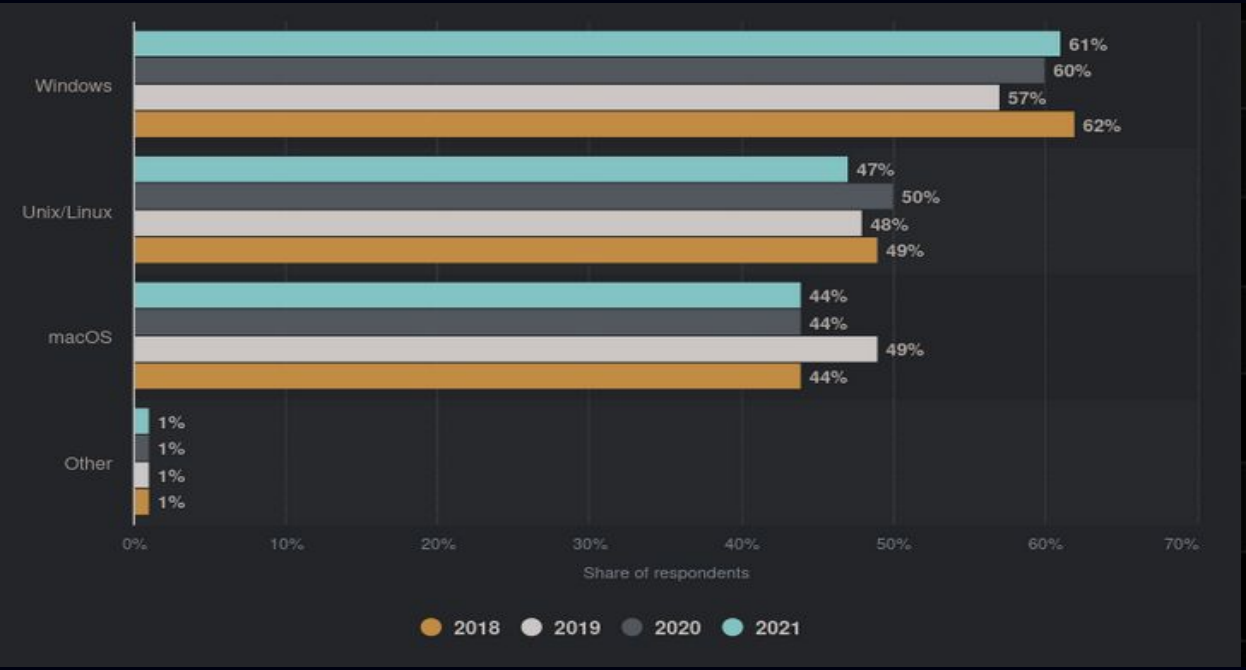
Registers:
--- No items ---

Who the hell uses VIM anyway? Go Evil!

~/ Dashboard

File Edit View Bookmarks Settings Help
19:22
Rishabh Narayan
rishabh at KDEPlasma in ~
o ./pfetch.sh
rishabh@KDEPlasma
os KDE neon User Edition 5.21
host HP 280 G2 MT (Legacy)
kernel 5.4.0-70-generic
uptime 11m
pkgs 1843
memory 1984M / 3791M
Individual Core Usage
100%
75%
50%
25%
0%
Usage 42.3%
Usage 39.2%
Usage 40.0%
40.4%

Prefered OS data among Devs

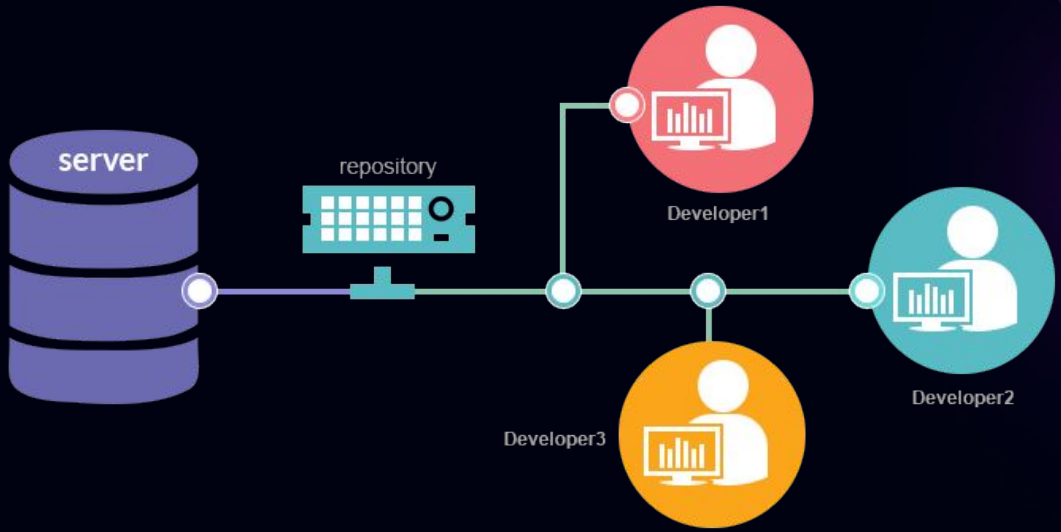


OS Market Share

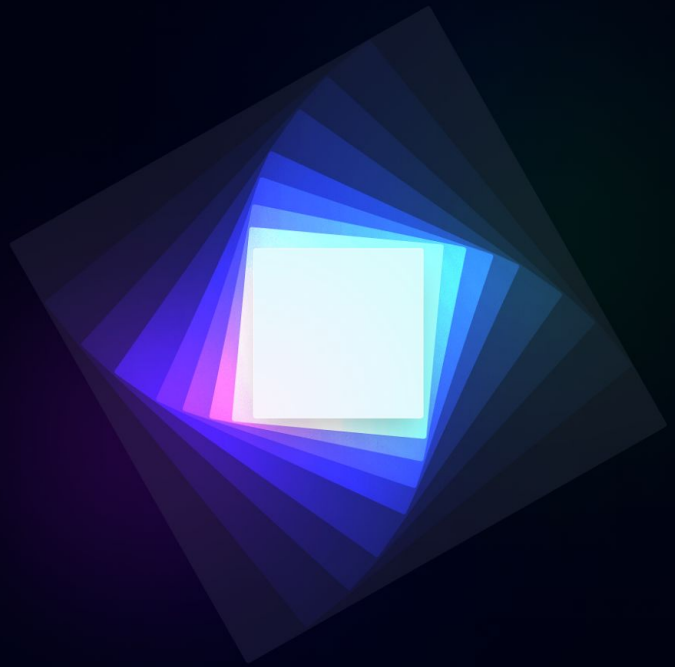
Platform	Share
Windows	87.56%
Mac OS	9.54%
Linux	2.35%
Chrome OS	0.41%
Unknown	0.13%
BSD	0.01%

What is Version Control System?

Version control refers to the practice of tracking and managing changes to software code, and Version Control Systems refers to software tools that assist software teams in managing changes to source code over time.



What is git and github?



Git is a distributed version control system that lets you manage and keep track of your source code history,

Github is a cloud-based hosting service that lets you manage Git repositories

What is OpenSource?

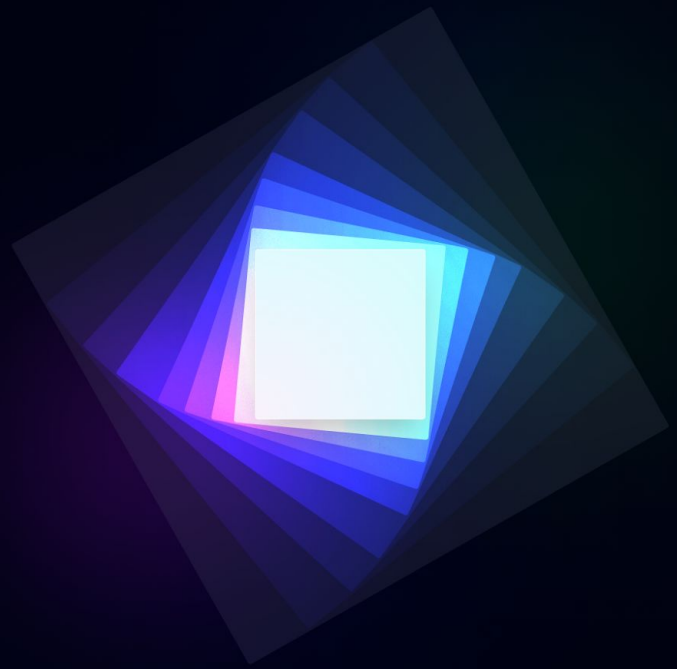
The term open source refers to something people can modify and share because its design is publicly accessible.
Open source software is software with source code that anyone can inspect, modify, and enhance.

Why Opensource?

Community

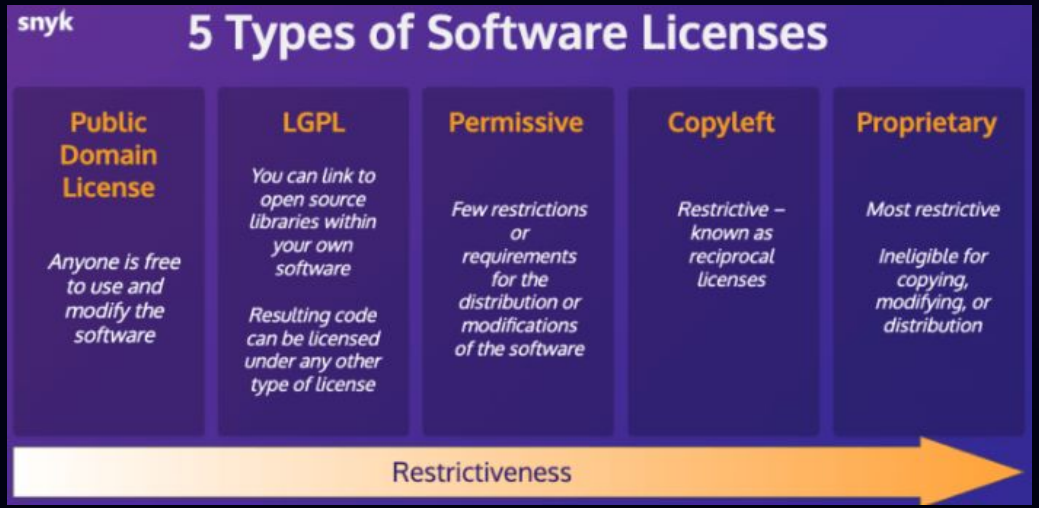
Control

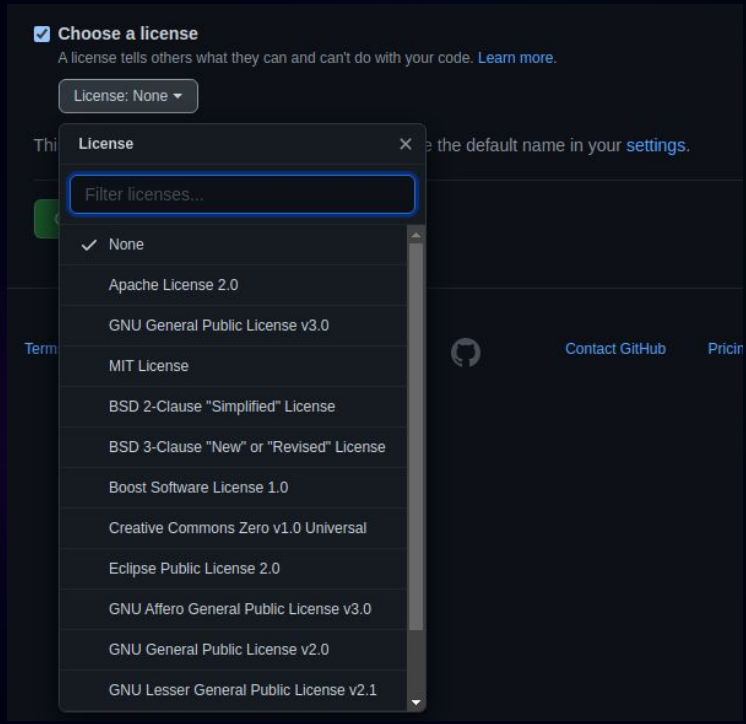
Security



Software Licensing

The license is a text document designed to protect the intellectual property of the software developer and to limit any claims against them that may arise from its use.

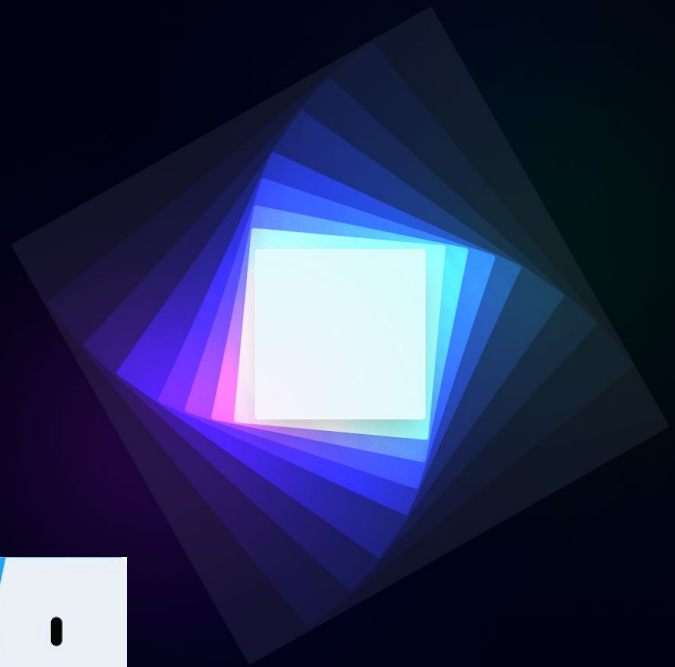




Software Licensing

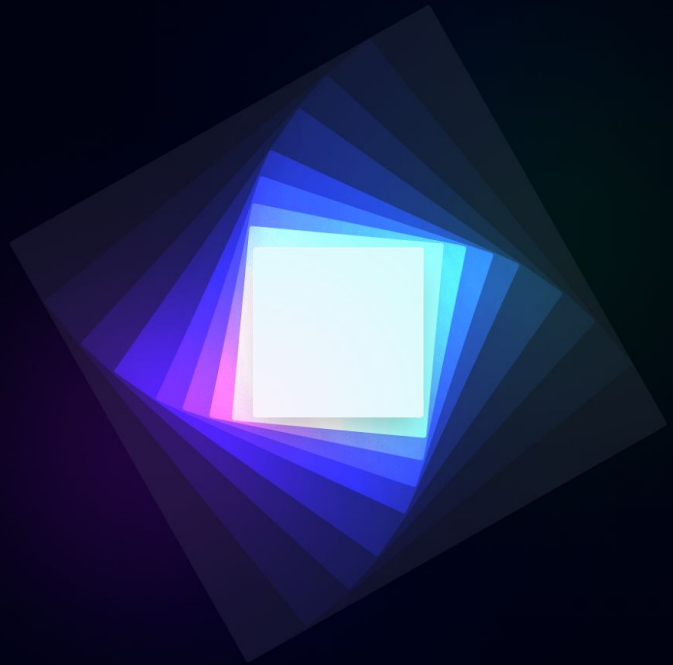
Trivia -

Apple's famous Mac Os used to actually be an open source OS, FreeBSD, which Apple modified and then made it closed source because BSD license allows it



DevOps

- What is DevOps? “DevOps is an approach to bridge the gap between agile software development and operations“
- Promotes collaborative Mindset between Devs and Ops
- It’s what Agile is to software development

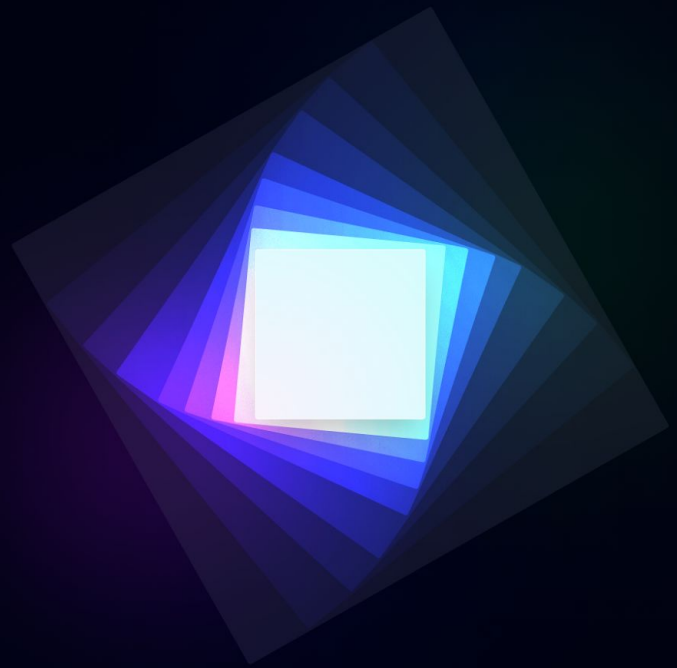


- **Automation**
- **Metrics**
- Sharing

DevOps

Automation
What can be automated?

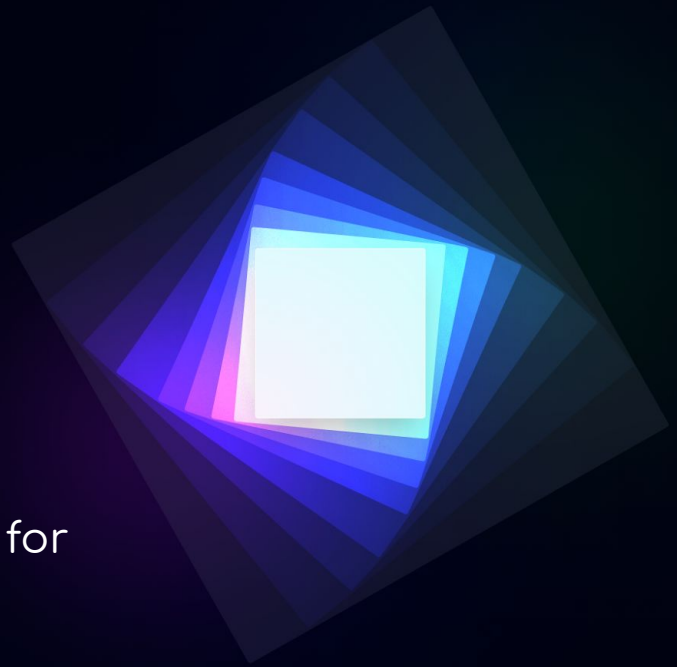
- Builds
- Deployments
- Testings
- Monitoring
- System rollouts &
  System configuration



DevOps

Tools we will explore

- Github Actions
- Netlify , Vercel and Surge.sh
- Heroku
- Docker
- K3s and K8s
- Ansible
- All major build system based on GNU make for C/CPP/Rust.
- CI services like CircleCI , Jenkins and Gitlab

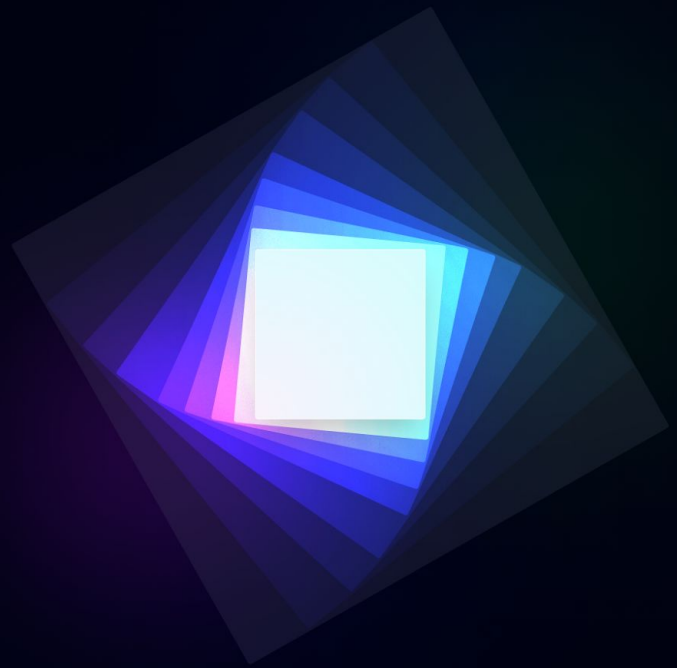


DevOps

Gnu/Linux Users Club
IIIT Bhopal

Projects and Tech

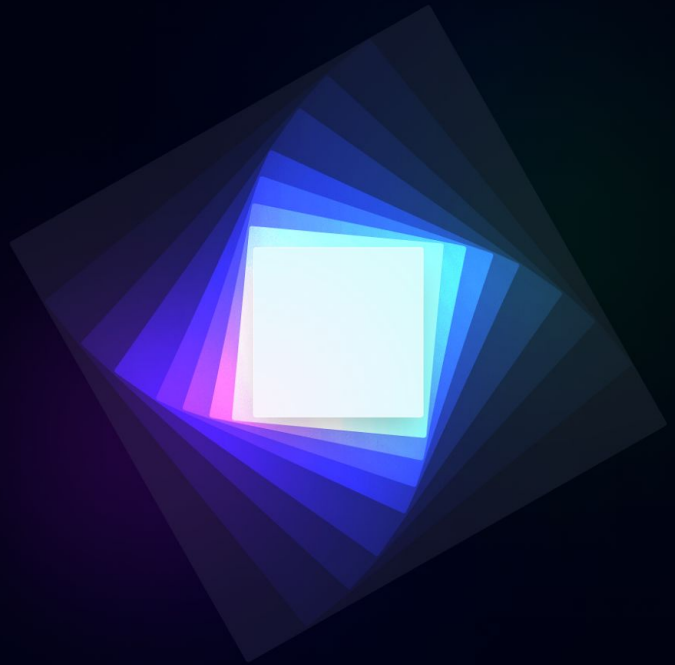
- Django + mongodb
- Discord bots in js and python
- Front end projects with React and Svelte
- Gitbook databases
- Docker and Kubernetes projects
- Our own Linux Distribution based on Arch Linux
- Http server in Rust with REST endpoints
- Small projects on distributed systems
- Bash Scripting



Shell-Scripts

What is The SHELL

The shell is a Computer program that takes commands from the keyboard and gives them to the operating system to perform



What is Shell-Scripting

Shell Scripting is a to write a file with series of commands for the shell to execute