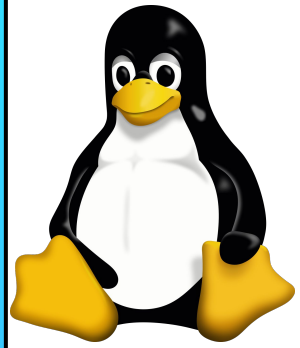


The Linux Week

Introduction to Linux

Welcome to Day 1

I am your host for today
Maya Mnaizel

Reference

Linux Professional Institute
Linux Essentials
Book Link

Day 1

- Definition of Linux
  - What is Linux
- History
  - About the creator of Linux
- Core Concepts
  - OS and Kernel
  - Open Source
  - Source Code
  - Distributions
- Use Cases

01

Definition

What is Linux

Introduction

It is a powerful open-source operating system based on the Unix Architecture
It is a fundamental component of modern computing environments

02

History

How it was created

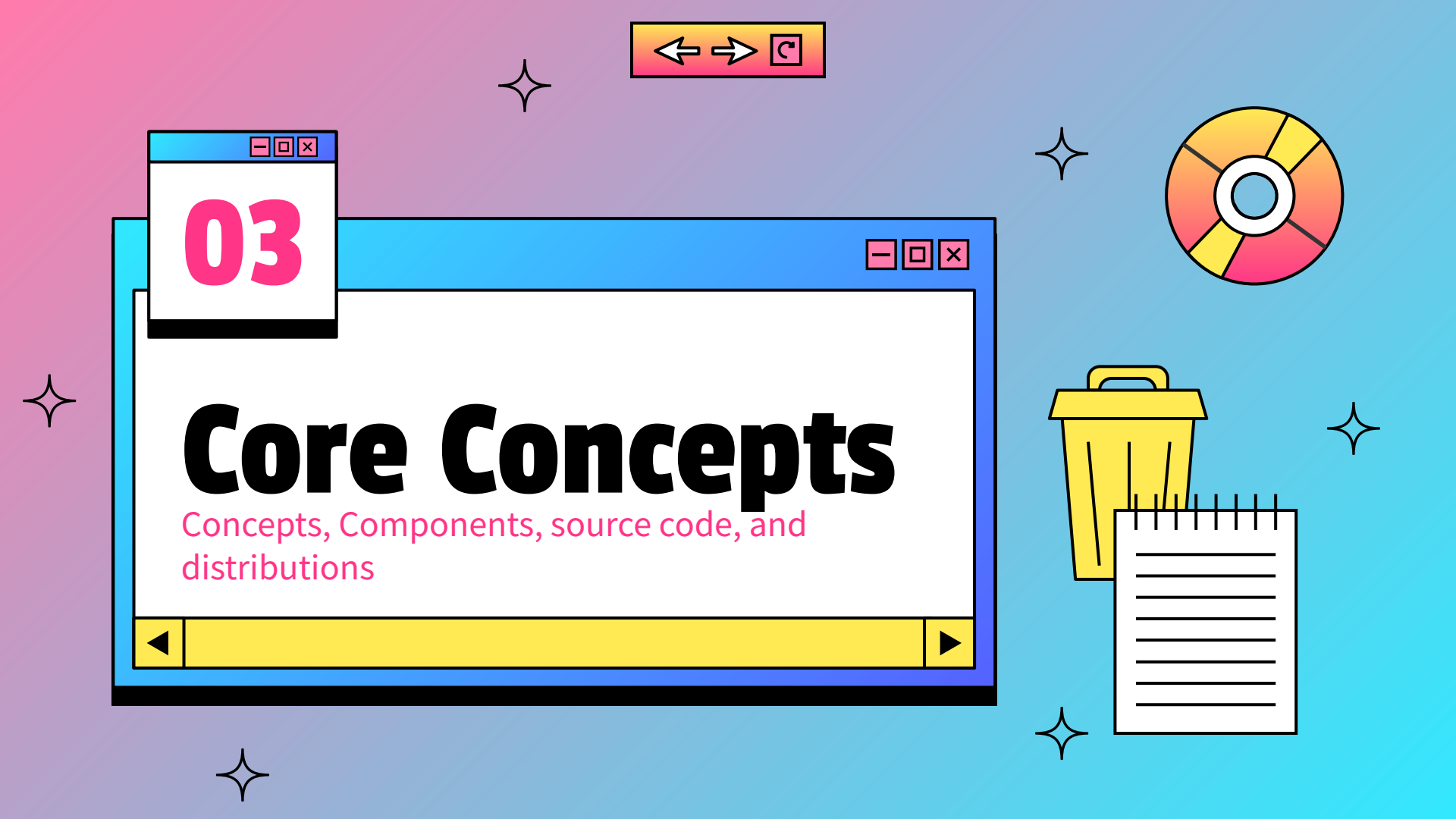
History

Linux was created by Linus Torvalds in 1991 as a personal project as a university project.
Other Creations: Git

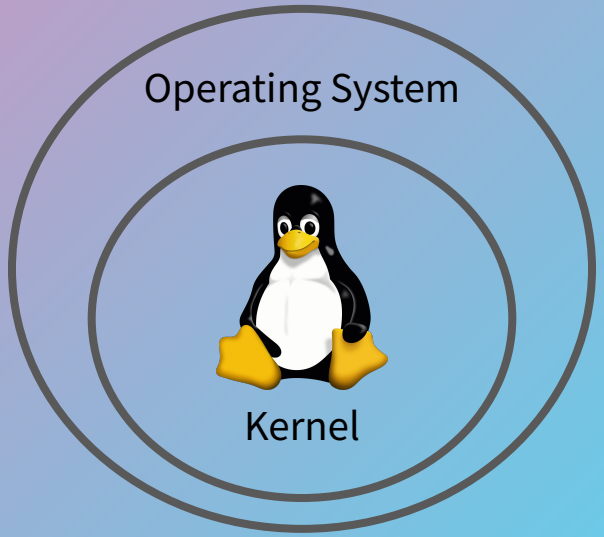
History of Linux

It was inspired by Unix, Linux itself doesn’t contain Unix code

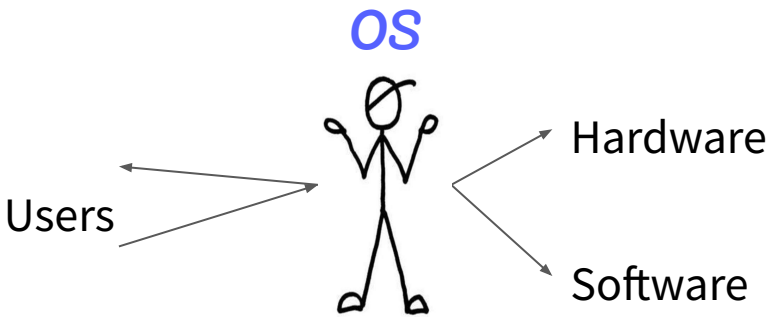
In 2003 the base of Android is a modified version of Linux Kernel with additional open-source software


03
Core Concepts
Concepts, Components, source code, and distributions

Kernel and Operating systems

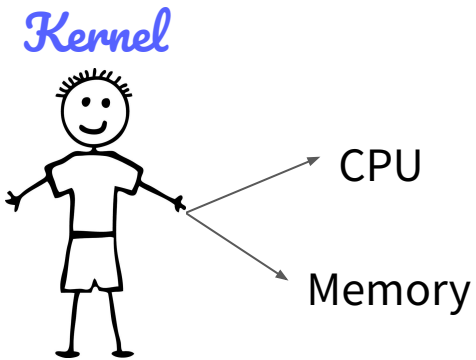


Core Concepts



Operating Systems:

- a software that manages the hardware and software
- Intermediary between the users and the software



Kernel:

- Core component of Linux
- Manages system resources like CPU, memory, and devices

Open Source

The source code of Linux is freely available to anyone to view, modify and distribute
Open source allow developer community to contribute to its development

3.3

Source Code

Deeper Dive

```
git clone https://github.com/torvalds/linux.git
cd linux
```

Source Code for Linux

arch/

Architecture Source:
ex arch/x86/

block/

Block device subsystems, handles hard drives and SSD

crypto/

Cryptographic API key

drivers/

/net ->network device driver
gpu/ ->graphical processors

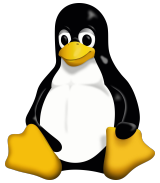
fs/

File system code

init/

Initialization code

Source Code for Linux



kernel/

Core kernel code

mm/

Memory management code

net/

TCP/IP, Sockets. Network interfaces

include/

File defining structure

tools/

Tools and utilities

documentation/

Documentation for kernel, tools, etc

Linux Distribution

01 Ubuntu 

02 Fedora 

03 RedHat 

04 Debian 

05 SUSE 

06 Arch 

04

Use Cases

Why do we need it

Use Cases for Linux

01 **Servers**

Web, DB, mail and file servers

02 **Development**

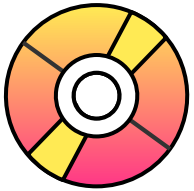
Game development, DevOps, Data analysis

03 **Embedded Systems**

IoT, Smart TVs, routers

04 **Supercomputers**

All top 500 HPC run on some variant of Linux



05 **Raspbian and Raspberry Pi**

06 **Network & security**

Routers, file walls, penetration testing (Kali)

It is usually offered as Infrastructure as a service (IaaS)

Linux in the Cloud

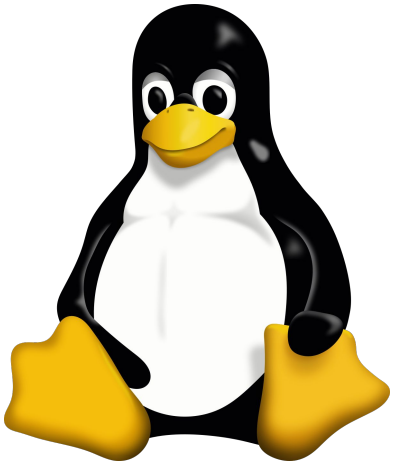
Exercises

1- Considering cost and performance, which distributions are mostly suitable for a business that aims to reduce licensing costs, while keeping performance at its highest? Explain why.

2- What are the major advantages of the Raspberry Pi and which functions can they take in business

Q/A Session

Thank you !



End of Day 1!

By Maya Mnaizel