Open Source Operating System

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Outline

- ✓ What is open source software?
- ✓ open source software
- ✓ open source Licenses
- ✓ open source Definition
- ✓ open source software vs. free software
- ✓ The Free Software Definition
- ✓ Some well known open source software
- ✓ Operating system
- ✓ Advantage of OS --Selecting Of OS
- ✓ History of Unix
- ✓ Linux
- ✓ Linux variants
- ✓ Linux vs. windows

What is Open Source Software?

- First of all let us see what is:
  - Software?
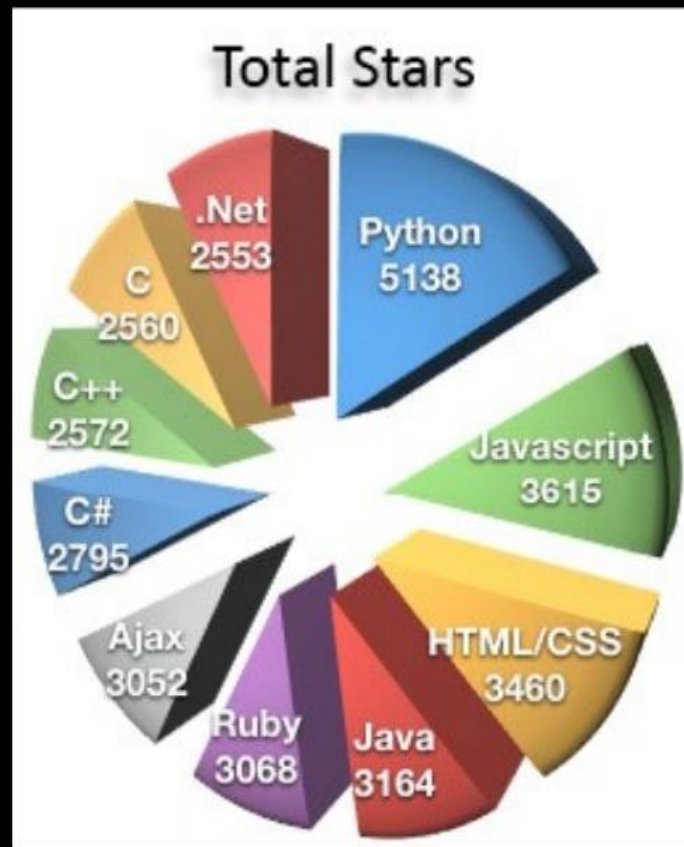 - Source?
  - Open?

Software

- Computer programme or software is set of instructions to computer to work in a desired manner.

Source

- Instructions to computers are normally written by programmers in Programming Languages like – C, C++, Java etc.

- These instructions are readable by humans and referred as **Source Code**.

- To make machines i.e. computers to understand this source code – it either permanently translated (compiled) or on-the-fly translated (interpreted) into machine level codes.

Source

Total Stars

- .Net 2553
- Python 5138
- Javascript 3615
- HTML/CSS 3460
- Java 3164
- Ruby 3068
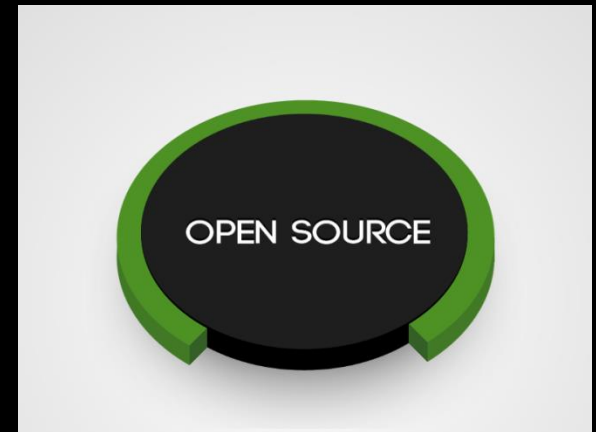- Ajax 3052
- C# 2795
- C++ 2572
- C 2560

Open

- ▣ Here original source code of the software is also given.

- ▣ If required, the users can modify the source code and then compile the software to use it.

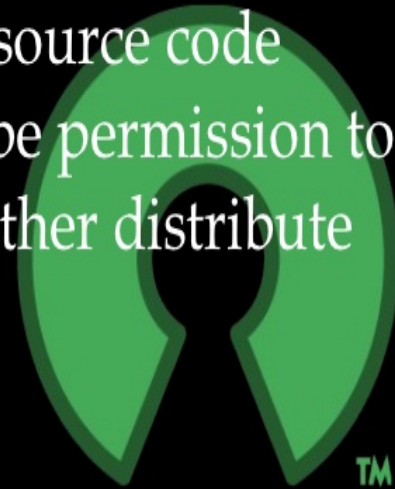- ▣ Thus, the source code is Opened up.

open source
initiative

Open Source Software

- Thus, Open Source Software is software for which the underlying programming code is also available to the users.

- They may read it, make changes, and build new versions of the software incorporating their changes.

Open Source Licenses

- Open source license doesn't just mean access to the source code – it has to meet other criteria as well.

- The important issue is that the source code should available; there should be permission to modify the source code and further distribute it.

Open Source Definition

- ▣ 1. Free Redistribution

- ▣ 2. Source Code

- ▣ 3. Derived Works

- ▣ 4. Integrity of The Author's Source Code

- ▣ 5. No Discrimination Against Persons or Groups

Open Source Software vs. Free Software

- Are they different?
  - NO
  - Open Source Software and Free Software for all practical purposes are same .
- But "Free" here actually means Freedom not free of cost
- "Free User " rather "Free Software"

The Free Software definition

Free software is a matter of the users' freedom to run, copy, distribute, study, change and improve the software. More precisely, it refers to four kinds of freedom, for the users of the software:

1. The freedom to run the program, for any purpose (freedom 0).

2. The freedom to study how the program works, and adapt it to your needs (freedom 1). Access to the source code is a precondition for this.

3. The freedom to redistribute copies so you can help your neighbor (freedom 2).

4. The freedom to improve the program, and release your improvements to the public, so that the whole community benefits (freedom 3). Access to the source code is a precondition for this.

Some Well Known Open Source Software

- <u>Linux</u> – an operating system.

- <u>Apache</u> – widely used web-server software.

- <u>MySQL</u> – widely relational database software that power most web-based applications.

- <u>PERL</u> – a scripting language.

- <u>PHP</u> – a widely used scripting language in dynamic websites.

- <u>OpenOffice</u> – Office suit like Microsoft Office.

- <u>Firefox</u> – Internet browsing software like Microsoft's Internet Explorer.

Some Well Known Open Source Software

- <u>Thunderbird</u> – E-mail client.

- <u>Audacity</u> – is an open source tool to edit audio.

- <u>Songbird</u> – is a media player.

- <u>GIMP</u> – is an Image Editor.

- <u>GMMP</u> – is a music player.

- <u>Eclipse</u> – An IDE for C / C++ / Java programming.

- <u>Gambas</u> – A visual programming language tool just same as V Basic.

- <u>NASM</u> - Netwide Assembler for assembly programming

Operating System

- Operating system is the software that you use to operate your PC. If the operating system is platform dependent, platform information will belong in the hardware section.

- Examples:
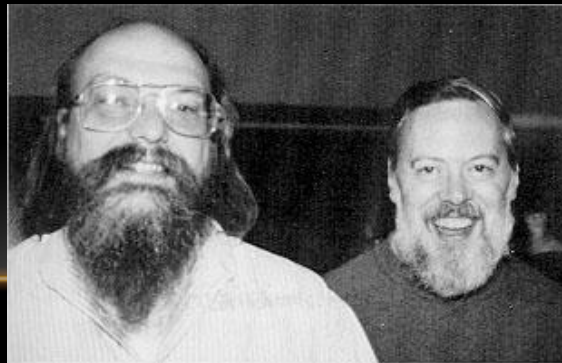 - Linux OS
  - Windows

Selecting an OS

- Intended use
- Commercial support
- Hardware compatibility
- Software compatibility
- Community

History of Unix

1969: First version of "Unics" by Ken Thompson and   ➢

Dennis Richie.

➢   Multi user operating system for the mainframes at the time.

➢   Written in Assembler.

➢   Bell Laboratories, USA.

➢   Rapid internal distribution and popularity, within Bell Labs.

Linux

- 1990: **Linus Torvalds**, a student in Helsinki/Finland, is using "**Minix**" on his 386 PC and is unsatisfied with it.

- Starting to develop a self-booting terminal emulation to dial in into the campus network.

- Soon adding harddisk drivers and support for a variety of software.

- Notices, he's quite on the way to develop a whole operating system.

- 1991: Releases **Linux kernel V0.01** on the FTP server of his university.

Linux

- Together with the GNU tools a fully operational operating system.

- Today many **Ten thousand developers** involved world-wide.

- **Big number of Linux distributions**, commercial and **free**.

- World-wide **acceptance as a professional** and industy-grade, operating system, mainly **in the area of network and servers**

Linux

- A very popular open source operating system that runs on a variety of hardware platforms . Linux is widely deployed as a server OS .

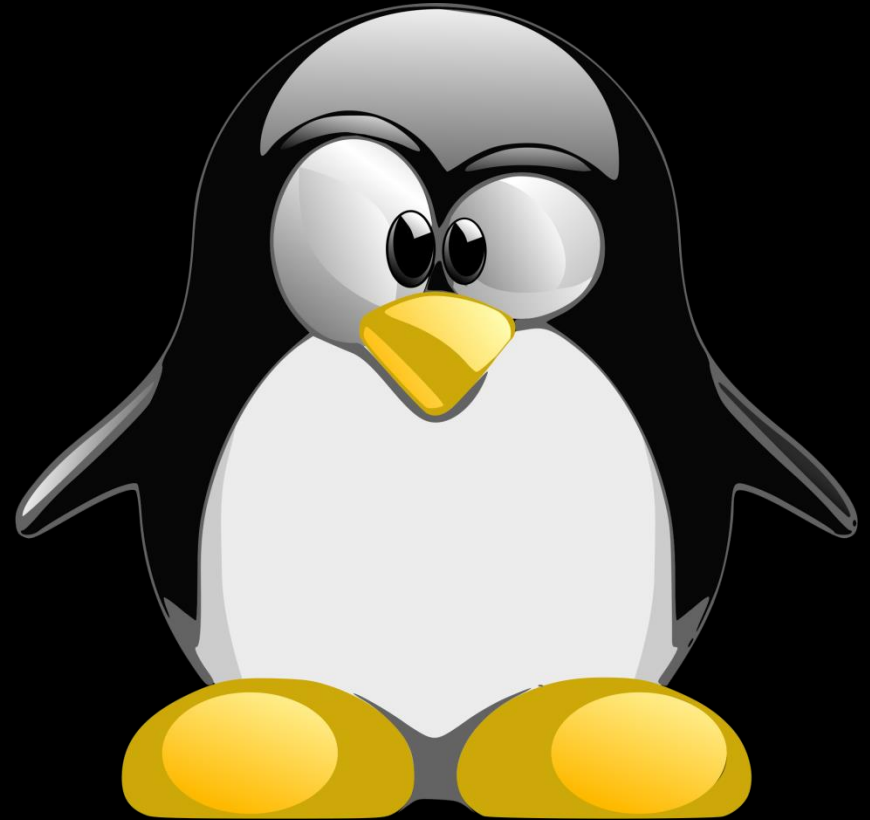- Linux is a multi-tasking, multiuser operating system. Although modified by numerous people.

LINUX

OS Linux family	Unix – like
Written in	initially in language of assembly and then in C language
Source model	Mainly open source
Developer	community
Marketing target	Personal computers , mobile devices , embedded devices , servers , mainframes , supercomputers
Available in	Multilingual
User land	Various

Linux Variants

- Ubuntu Linux
- Fedora Linux
- OpenSUSE Linux
- Mandriva Linux
- Linux Mint
- Debian Linux
- SlackWare Linux

Some of linux distributions icons

Linux vs. Windows

Linux	Windows
Free of Cost	Purchase License
Fast Upgrading	Slower Upgrading
Backward Compatibility	Forward Compatibility
Multiuser Support	Multiuser Support
Difficult for Programmer	Easy for Programmer

Thank You for listening

Any Question!