Free and Open Source Software for Personal Computing

IT1306

Level I - Semester 1

Introduction to FOSS
Free and Open Source Software

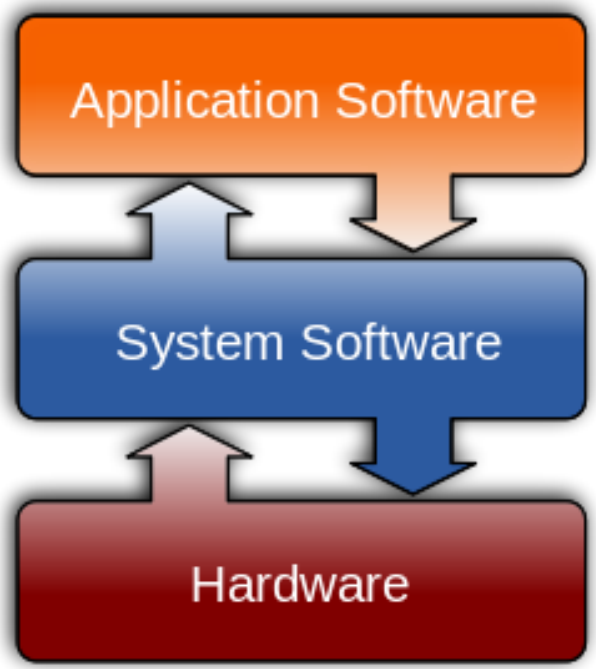
1.1. Introduction to Major Software Classification

1.1.1. System Software

1.1.2. Application Software

1.2. Introduction to Free and Open Source Software (FOSS)

Introduction to Major Software Classification



What is a Software?

- A set of instructions or programs instructing a computer to do specific tasks.
- Software consists of the computer programs that govern the operations of the computer.
- Gives the computer the power to act as an intelligent machine.
- Without software, computers are dead hardware
- Software is normally classified into two components called
    i. Application Software
    ii. System Software

Application Software

- Application Software is a set of programs designed to carry out operations for a specified purpose or task.
- Examples:
  Packaged application (e.g. MS Office, spread sheets, etc), database management systems, systems developed according to user requirements (bespoke) , accounting applications, web browser, photo editor, etc.

System Software

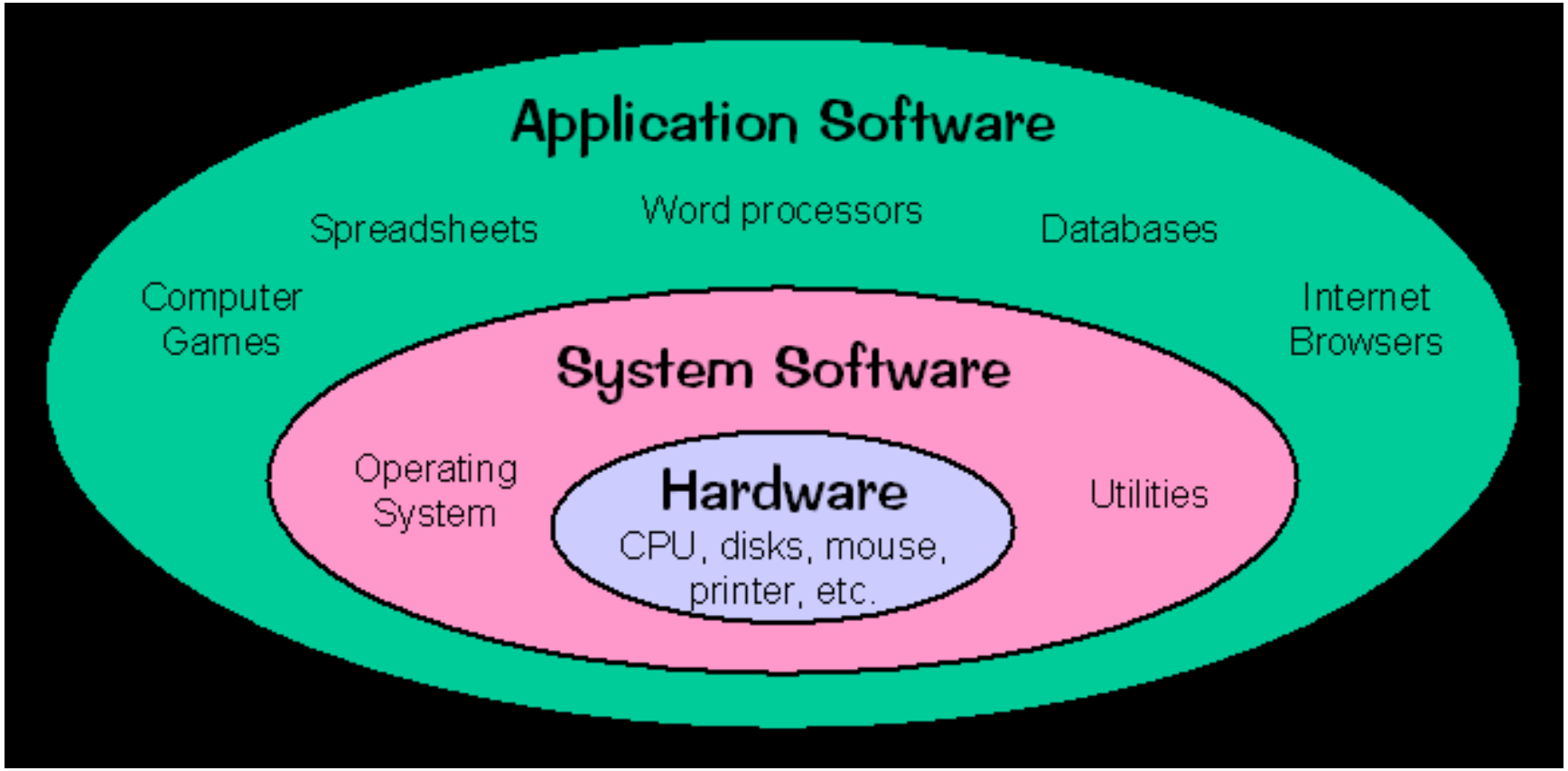
- Application software cannot run without having system software.
- Hardware devices together with system software **provide the infrastructure to run/execute application software**.
- acts as an interface between the hardware of the computer and the application software
- System software **communicates with hardware devices** to coordinate activities.

Example: Operating systems (Microsoft Windows, Linux, Unix, Mac OSX, DOS, etc.), Utility Software (scanners, file compression programs, data backup programs etc.), Language Translators (Assembler, Compiler, Interpreter)

Application/System Software

System Software	Application Software
1. Used for operating computer hardware.	Used by user to perform specific task.
2. Installed on the computer when operating system is installed.	Installed according to user's requirements.
3. The user does not interact with system software (it works in the background)	The user interacts with application software.
4. It provides a platform for running application software.	Application software cannot run without the presence of system software.

Application/System Software



Introduction to Free and Open Source Software (FOSS)

What is Free(F) and Open(O) Source(S) Software(S) - FOSS

- There are two major philosophies in the FOSS world
  - Free Software Foundation (FSF) philosophy and
  - Open Source Initiative (OSI) philosophy.
- An umbrella term used for software that is considered both Free software and open-source software.

What is Free(F) and Open(O) Source(S) Software(S) - FOSS

Free Software Foundation (FSF) philosophy

- Free Software:
  - Computer software distributed under terms that allow users to run the software for any purpose as well as to study, change, and distribute it and any adapted versions
- Protecting four user freedoms:
  - The freedom to run a program, for any purpose;
  - The freedom to study how a program works and adapt it to a person's needs. Access to the source code is a precondition for this;
  - The freedom to redistribute copies so that you can help your neighbor;
  - The freedom to improve a program and release your improvements to the public, so that the whole community benefits. Access to the source code is a precondition for this.

What is Free(F) and Open(O) Source(S) Software(S) - FOSS

Open Source Initiative (OSI) philosophy

- Open Source Software:
  - A type of computer software in which source code is released under a license in which the copyright holder grants users the rights to study, change, and distribute the software to anyone and for any purpose.
  - Open-source software may be developed in a collaborative public manner.
- When programmers can read, redistribute, and modify the source code for a piece of software, the software evolves.
- People improve it, people adapt it, people fix bugs.

FOSS Examples

- GNU/Linux Operating System
- Libre Office
- Open Office
- GIMP
- MySQL
- PHP
- Eclipse

FOSS – Pros & Cons

BENEFITS

- No cost or almost always cheaper than proprietary software.
- Security.
- Availability of source code.
- Open standards and vendor independence.

LIMITATIONS

- Lack of compatibility with proprietary systems.
- Lack of extensive documentation.

What is Proprietary Software

- Software that is solely owned by the individual or the organization that developed it.
- The source code can only be modified by the individual or organization who created it.
- The owner or publisher of the software holds intellectual property rights of the source code exclusively.
- The internal structure of proprietary software is not exposed and the restrictions are imposed upon the users by the End User License Agreement (EULA)

Ref: Difference Between Open Source and Proprietary Software | Difference Between http://www.differencebetween.net/technology/difference-between-open-source-and-proprietary-software/#ixzz6CEeEGwZr

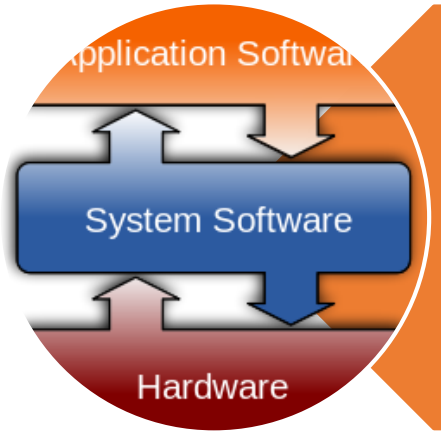
Proprietary Software Examples

- Windows
- macOS
- Google Earth
- Adobe Flash Player
- Microsoft Office

Activity

Activity 1	**Compare and Contrast FOSS and Proprietary Software.**
Activity 2	**Find more examples for FOSS & Proprietary Software.**
Activity 3	**Is “Google Docs” an example for FOSS? Justify your answer.**

Summary



Introduction to Major Software Classification

- Different types of software .
- Distinguished the difference between application and system software.

Introduction to Free and Open Source Software (FOSS)

- What is FOSS?
- Distinguished the difference between open source and proprietary software
- Identified different types of free and open source software