* Package manager - installing software on linux. (Lesson 10)

How to install software on linux.

→ using package manager.

* what is package manager and what is software package?

Software package – a compressed archieve, containing all the required files
- apps usually have dependencies.
- dependencies for an app needs, which are not packaged into the archieve.
- These dependencies also need to be installed
- files are split across different folders.
- managing apps, like uninstalling everything completely is more difficult.

Package manager
- downloads, install or update existing software from a repository.
- ensures the integrity and authentacity of the package
- manages and resolves all required dependencies.
- knows where to put all the files in the linux system.
- if you uninstall software using package manager it will clean up everything related to app.
- easy upgrading of software

Where do I get package manager?
- already included in every Linux Distribution.

- Ubuntu package manager is 'APT'.
Advanced package tool.

manage software with APT.

apt
- it show all the detail.

sudo apt search <package name>
→ Search for a given package.

sudo apt search openjdk
java
→ gives suggestions. which one to install

sudo apt install openjdk-11-jre-headless
- install a package.

sudo apt install package name1 package name2
- install multiple packages

java --version
- to check version

sudo apt remove packagename
- Remove installed package

* Difference of APT and APT-GET

apt-get
- you can achieve same if you use additional command options
- search commands not available.

apt.
- more user friendly, like progress bar
- fewer, but sufficient command options in a more organized way.
-(Recommended)

* Repositories.
Where do these packages come from.?

→ Repository. - storage location, containing thousands of programs

- package manager fetches the packages from these repositories.
- mostly hosted online
- always update the package index before upgrading or installing new packages

sudo apt update

- update the package index

* Ubuntu software center.

alternative ways to install software

- There are packages, that are not available in these official repositories.
- available, but not the latest version
- software packages are verified, before adding to the repository.
- verification process takes time.

alternative: 1 Ubuntu software center

eg - install intellij

use - ubuntu software application

alternative 2: snap package manager.

- snap is a software packaging and deployment system
- for os using linux kernel

sudo snap install --classic code

Snap	APT.
① self contained - dependencies contained in a package.	① Dependencies are shared. ✓✓
② Support universal linux packages .snap	② only for specific linux distributions.
③ automatic updates	③ Manual updates.

⑤ large size ④ Small size.

* add repository to the official repository list

- when installing relatively new application.
- which are not in official repository yet.
- Repository will be added to /etc/apt/sources.list

PPA → personal package archiere.

- ppa are provided by community.
- anybody can create ppa - private repository to distribute the software
- usually used by developers to provide updates more quickly than in the Ubuntu repositories.
- Be aware of possible risks before adding a PPA.
  - no guarantee of quality or security.
  - like any other unofficial software package it can cause difficulties eg when upgrading to a new Ubuntu release

* Wrap up.

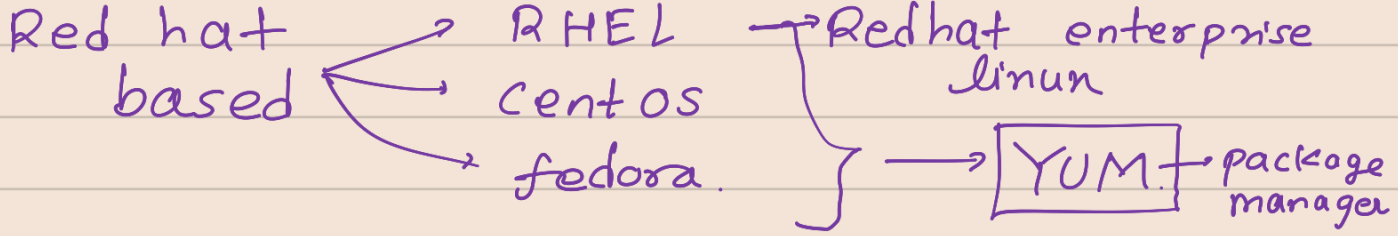
apt (recommended)

alternative - snap, Ubuntu software center, add repository.

* Package manager for other Linux Distros.

Based on source code

Debian based ← Ubuntu, Debian, Mint → apt, apt-get. (package manager.)



apt yum

Similar concept.

→ package manager uses official repositories.

- Download packages, resolve dependencies, etc.

Difference of repos

→ more or newer versions of packages