Homebrew Introduction

- Homebrew is a free and opensource package manager for Unix like OS
- Using homebrew, we can install command line utilities as well as GUI applications
- On its official website it is written that it is a missing package manager for mac & linux OS. It is popular for mac.

What is a package?

- collection of software files which get installed at the same time
- any command line utility is a package
- Ex: We want to install git, then first I would download the package for git and then we install that, so, that package contains all the software files which are for proper functioning of git.

Homebrew Importance: Why was it Required

- All unix based OS have their built-in package managers for installing applications

  Ex: Ubuntu has APT, Redhat enterprise has YUM and so on

- Mac OS, also based on Unix just has app store, which is limited to UI based applications.

and thus

Homebrew is a life saver here because through this we can install command line utilities (CLU).

What does Homebrew gives us?

→ Easy application installation

- Complex installation steps in traditional way
- Homebrew abstracts the installation completely: only one command

  brew install <app-name>

Homebrew Terminologies

· Package · Prefix · Cellar · Formulae · Cask
· Bottle · Tap · Keg · Keg-only · Rack

① Package:
Package is a collection of software files.
In homebrew world we can call a complete software as a package

② Prefix
Directory on system, which contains things related to homebrew
- usr/local (Intel MAC)
- opt/homebrew (Silicon Mac)

③ Cellar
- location in our system where brew installs all the applications
it is also a file
opt/homebrew/cellar

(4) Formulae

· Formulae is a ruby script which defines the package

- The formula file contains the installation instruction for that particular application & other related information

- Location of the tar ball. from where the package will be download
- Dependencies of the package
- How to install

· Formulae : The command line utilities / software

⑤ Cask

Cask are like formula but they get installed in /Applications directory instead of opt/homebrew/cellar. It is for GUI based applications, while formula is for command line utilities

Ruby files contain definition of homebrew package, which installs macOS native applications.

⑥ Bottle

As we know formula is a Ruby script that has instructions to install a particular piece of software. It contains instructions for fetching the software source code, configuring it, compiling it, installing it & managing its dependencies.

. Bottles are pre-compiled version of homebrew formula.

. They aim to reduce the time & resources required to install packages by providing pre-built binaries

- They are also stored in opt/ homebrew /cellar

⑦ Tap

- Remote git repositories from where brew downloads and installs the applications

Eg: homebrew / homebrew-core for formulae
homebrew / homebrew-cask for casks

- We can install applications from third party repositories also

↳ brew tap ayush/tap

Formulae vs Cask (2)

Feature	Formulae	Cask
Package Type	To install command line utilities.	To install GUI applications / MacOS native applications.
Installation Location	They get installed at location: **opt/homebrew/Cellar**	They get installed in **/Applications** folder.
Github Location	https://github.com/Homebrew/homebrew-core/tree/master/Formula	https://github.com/Homebrew/homebrew-cask/tree/master/Casks
Project Name	Homebrew-core	Homebrew-cask
Examples	tree, gedit, git, php, python, rabbitmq, sqlite etc.	atom, firefox, google-chrome, google-drive, postman etc.

How to install applications using brew?

→ We just need to remember one command
install anything using homebrew

- brew install <app-name>

if cask / GUI

- brew install --cask <app-name>

If installing from another tap?

→ add tap to brew as brew tap tapname/tap
→ it will go to the github repo and add the tap
→ it will be cloned at Library/Taps/tapname

Ex: to add mongodb/brew
- brew tap mongodb/tap
- brew install mongodb-community

Understanding bin, lib files for 'gettext' application

- This application contains bin, lib, include
- So corresponding file will be in all three places
- Also, symlink would be present for all 3 of them
  - opt/homebrew/bin
  - opt/homebrew/lib
  - opt/homebrew/include