

Bash Command Tutorial 4

Let's learn how to manage software with `apt`. Before installing anything with `apt`, it's good practice to run `sudo apt update` first. This makes sure that you're getting the most recent version of whatever package you install.

Once that's done, enter:

```
sudo apt install tree
```

After that installs, hit the up arrow once to scroll back through your command history (this is a very handy tool that you should learn to take advantage of.)

Replace "tree" with "htop" so that you're entering `sudo apt install htop`.

Remember, when you use `sudo` you're telling Linux to run the command as an administrator. You'll be asked for your password.

We've just installed two new packages.

- `tree` shows folders and files as a visual tree structure.
- `htop` is an interactive system monitor (we'll use this one later).

Let's practice using "tree". Let's start by nuking the practice directory from last time with `rm -r practice`. Before we move on, I want to stress how important it is that you practice typing these commands in **by hand** while you're still learning. Be sure to use the Tab autocomplete feature to save time. **Do not copy and paste!** Run these commands:

```
mkdir -p practice/folderA
```

(make parent directory "practice" and child directory "folderA")

```
cd practice
```

(change into the "practice" directory)

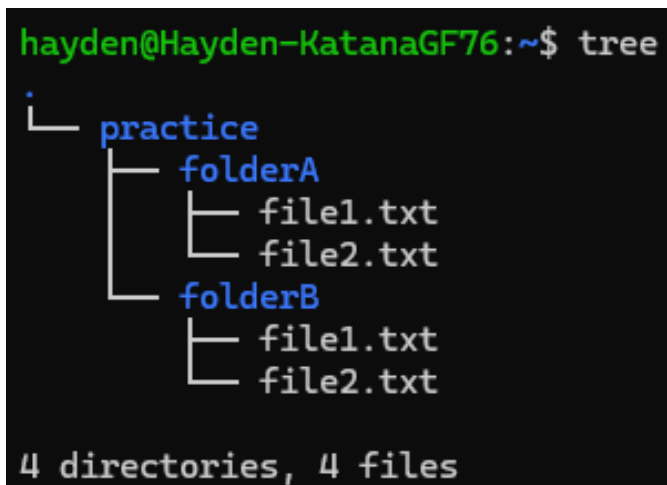
```
touch folderA/file1.txt folderA/file2.txt
```

(create two empty text files inside of “folderA”)

```
cp -r folderA/ folderB
```

(recursively copy folderA into a new directory, folderB)

Once you do all that, run `cd ..` to move up a directory and then run `tree`. You should see something like this:



```
hayden@Hayden-KatanaGF76:~$ tree
.
├── practice
│   ├── folderA
│   │   ├── file1.txt
│   │   └── file2.txt
│   └── folderB
│       ├── file1.txt
│       └── file2.txt
4 directories, 4 files
```

Pretty cool eh? It’s nothing fancy but it’s a great way to visualize the structure of your directories.

Most programs include a `--version` flag to show which version you’re using.

```
tree --version
```

```
tree v2.1.1 © 1996 - 2023 by Steve Baker, Thomas Moore, Francesc
Rocher, Florian Sesser, Kyosuke Tokoro
```

```
htop --version
```

```
htop 3.3.0
```

You can get even more details by using `apt show`. Try `sudo apt show tree`. You should see the package name, the maintainer, installed size, description, and all sorts of other info.

Package: tree

Version: 2.1.1-2ubuntu3

Priority: optional

Section: universe/utils

Origin: Ubuntu

Maintainer: Ubuntu Developers

<ubuntu-devel-discuss@lists.ubuntu.com>

...

Etc. And as a reminder, if you ever need to remove a package you can run `sudo apt remove [package]` (for example, `sudo apt remove tree`.)