

Bài Tập Lab 2

Bài 1: Cập nhật gói phần mềm hiện tại

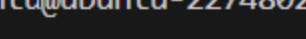
```
ubuntu@ubuntu-2274802010449:~$ sudo apt update
Hit:1 http://archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://archive.ubuntu.com/ubuntu jammy-updates InRelease [128 kB]
Get:3 http://security.ubuntu.com/ubuntu jammy-security InRelease [129 kB]
Get:4 http://archive.ubuntu.com/ubuntu jammy-backports InRelease [127 kB]
Get:5 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [2585 kB]
Get:6 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [2308 kB]
Get:7 http://archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [1440 kB]
Get:8 http://archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 Packages [51.8 kB]
Get:9 http://archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 Packages [3181 kB]
Get:10 http://archive.ubuntu.com/ubuntu jammy-backports/main amd64 Packages [81.4 kB]
Get:11 http://archive.ubuntu.com/ubuntu jammy-backports/universe amd64 Packages [33.7 kB]
Get:12 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 Packages [1150 kB]
Get:13 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 Packages [3097 kB]
Get:14 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 Packages [44.7 kB]
Fetched 14.4 MB in 5s (3037 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
17 packages can be upgraded. Run 'apt list --upgradable' to see them.
ubuntu@ubuntu-2274802010449:~$ sudo apt update -y
Hit:1 http://security.ubuntu.com/ubuntu jammy-security InRelease
Hit:2 http://archive.ubuntu.com/ubuntu jammy InRelease
Hit:3 http://archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:4 http://archive.ubuntu.com/ubuntu jammy-backports InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
17 packages can be upgraded. Run 'apt list --upgradable' to see them.
```

- Sau đó cài đặt gói figlet

```
ubuntu@ubuntu-2274802010449:~$ sudo apt update -y
Hit:1 http://security.ubuntu.com/ubuntu jammy-security InRelease
Hit:2 http://archive.ubuntu.com/ubuntu jammy InRelease
Hit:3 http://archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:4 http://archive.ubuntu.com/ubuntu jammy-backports InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
17 packages can be upgraded. Run 'apt list --upgradable' to see them.
ubuntu@ubuntu-2274802010449:~$ sudo apt install figlet -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  figlet
0 upgraded, 1 newly installed, 0 to remove and 17 not upgraded.
Need to get 133 kB of archives.
After this operation, 752 kB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu jammy/universe amd64 figlet amd64 2.2.5-3 [133 kB]
Fetched 133 kB in 1s (91.5 kB/s)
debconf: delaying package configuration, since apt-utils is not installed
Selecting previously unselected package figlet.
(Reading database ... 14850 files and directories currently installed.)
Preparing to unpack .../figlet_2.2.5-3_amd64.deb ...
Unpacking figlet (2.2.5-3) ...
Setting up figlet (2.2.5-3) ...
update-alternatives: using /usr/bin/figlet-figlet to provide /usr/bin/figlet (figlet) in a
update-alternatives: warning: skip creation of /usr/share/man/man6/figlet.6.gz because ass
```

- Kiểm tra xem gói figlet đã được cài thành công hay không bằng cách sử dụng thử những tính năng củ nó.

```
ubuntu@ubuntu-2274802010449:~$ figlet Hello
```



- Sau đó xóa figlet ra khỏi hệ thống

```
ubuntu@ubuntu-2274802010449:~$ sudo apt remove figlet -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages will be REMOVED:
  figlet
0 upgraded, 0 newly installed, 1 to remove and 17 not upgraded.
After this operation, 752 kB disk space will be freed.
(Reading database ... 14930 files and directories currently installed.)
Removing figlet (2.2.5-3) ...
ubuntu@ubuntu-2274802010449:~$
```

- Kiểm tra figlet đã được xóa/gỡ bằng cách thử chạy lại figlet và gặp lỗi.

```
ubuntu@ubuntu-2274802010449:~$ figlet Hello
bash: /usr/bin/figlet: No such file or directory
ubuntu@ubuntu-2274802010449:~$
```

Bài 2:

- a) Cài đặt phần mềm lolcat.

```
ubuntu@ubuntu-2274802010449:~$ sudo gem install lolcat
Fetching lolcat-100.0.1.gem
Fetching paint-2.3.0.gem
Fetching optimist-3.0.1.gem
Fetching manpages-0.6.1.gem
Successfully installed paint-2.3.0
Successfully installed optimist-3.0.1
Successfully installed manpages-0.6.1
Successfully installed lolcat-100.0.1
Parsing documentation for paint-2.3.0
Installing ri documentation for paint-2.3.0
Parsing documentation for optimist-3.0.1
Installing ri documentation for optimist-3.0.1
Parsing documentation for manpages-0.6.1
Installing ri documentation for manpages-0.6.1
Parsing documentation for lolcat-100.0.1
Installing ri documentation for lolcat-100.0.1
Done installing documentation for paint, optimist, manpages, lolcat after 0 seconds
4 gems installed
```

- Kết hợp phần mềm này với phần mềm figlet để biến text thành cầu vồng trên terminal.

```
ubuntu@ubuntu-2274802010449:~$ figlet "Hello World" | lolcat
```

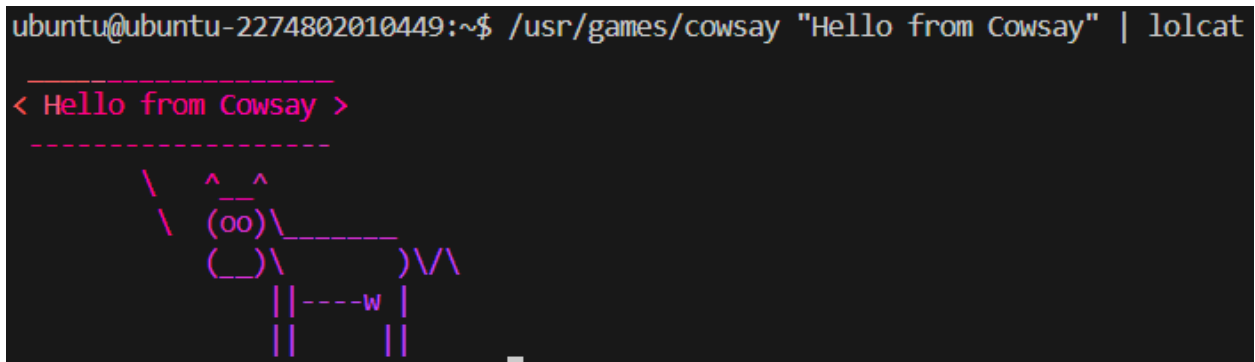


b) Cài đặt phần mềm cowsay

```
ubuntu@ubuntu-2274802010449:~$ sudo apt install cowsay -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libtext-charwidth-perl
Suggested packages:
  filters cowsay-off
The following NEW packages will be installed:
  cowsay libtext-charwidth-perl
0 upgraded, 2 newly installed, 0 to remove and 0 not upgraded.
Need to get 28.7 kB of archives.
After this operation, 139 kB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu jammy/main amd64 libtext-charwidth-perl amd64 0.04-10build3 [10.2 kB]
Get:2 http://archive.ubuntu.com/ubuntu jammy/universe amd64 cowsay all 3.03+dfsg2-8 [18.6 kB]
Fetched 28.7 kB in 1s (39.8 kB/s)
debconf: delaying package configuration, since apt-utils is not installed
Selecting previously unselected package libtext-charwidth-perl.
(Reading database ... 17940 files and directories currently installed.)
Preparing to unpack .../libtext-charwidth-perl_0.04-10build3_amd64.deb ...
Unpacking libtext-charwidth-perl (0.04-10build3) ...
Selecting previously unselected package cowsay.
Preparing to unpack .../cowsay_3.03+dfsg2-8_all.deb ...
Unpacking cowsay (3.03+dfsg2-8) ...
Setting up libtext-charwidth-perl (0.04-10build3) ...
Setting up cowsay (3.03+dfsg2-8) ...
```

- Kết hợp cowsay với lolcat để vẽ hình ảnh có màu trên terminal.

```
ubuntu@ubuntu-2274802010449:~$ /usr/games/cowsay "Hello from Cowsay" | lolcat
```



c) Cài đặt phần mềm fortune-mod.

```
ubuntu@ubuntu-2274802010449:~$ sudo apt install fortune-mod -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  fortunes-min librecode0
Suggested packages:
  fortunes x11-utils bsdmaintils
The following NEW packages will be installed:
  fortune-mod fortunes-min librecode0
0 upgraded, 3 newly installed, 0 to remove and 0 not upgraded.
Need to get 762 kB of archives.
After this operation, 2154 kB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu jammy/main amd64 librecode0 amd64 3.6-24build2 [670 kB]
Get:2 http://archive.ubuntu.com/ubuntu jammy/universe amd64 fortune-mod amd64 1:1.99.1-7.1 [36.9 kB]
Get:3 http://archive.ubuntu.com/ubuntu jammy/universe amd64 fortunes-min all 1:1.99.1-7.1 [55.1 kB]
Fetched 762 kB in 2s (419 kB/s)
debconf: delaying package configuration, since apt-utils is not installed
Selecting previously unselected package librecode0:amd64.
(Reading database ... 18013 files and directories currently installed.)
Preparing to unpack .../librecode0_3.6-24build2_amd64.deb ...
Unpacking librecode0:amd64 (3.6-24build2) ...
Selecting previously unselected package fortune-mod.
Preparing to unpack .../fortune-mod_1%3a1.99.1-7.1_amd64.deb ...
Unpacking fortune-mod (1:1.99.1-7.1) ...
Selecting previously unselected package fortunes-min.
Preparing to unpack .../fortunes-min_1%3a1.99.1-7.1_all.deb ...
Unpacking fortunes-min (1:1.99.1-7.1) ...
Setting up librecode0:amd64 (3.6-24build2) ...
Setting up fortunes-min (1:1.99.1-7.1) ...
Setting up fortune-mod (1:1.99.1-7.1) ...
Processing triggers for libc-bin (2.35-0ubuntu3.8) ...
```

- Kết hợp fortune-mod với lolcat để tạo ra 1 đoạn danh ngôn có animation trên terminal.

```
ubuntu@ubuntu-2274802010449:~$ /usr/games/fortune | lolcat
Q:      What looks like a cat, flies like a bat, brays like a donkey, and
        plays like a monkey?
A:      Nothing.
```

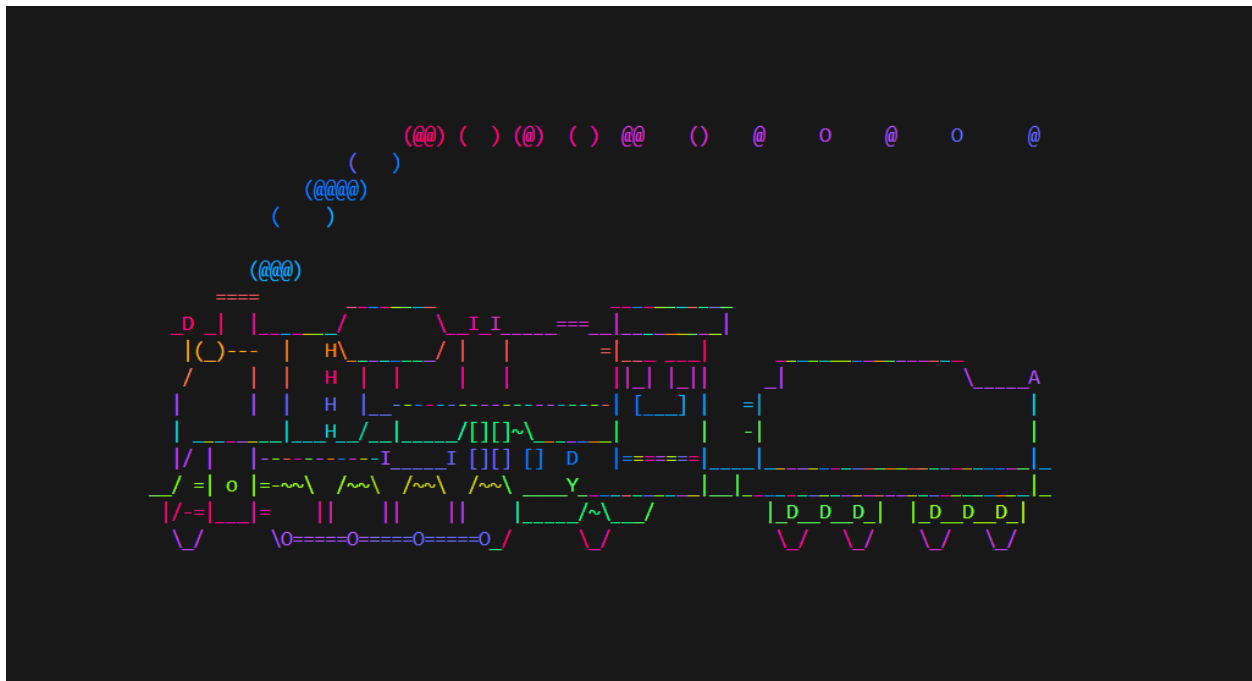
d) Cài đặt phần mềm sl

```

ubuntu@ubuntu-2274802010449:~$ sudo apt install sl -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  sl
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 12.7 kB of archives.
After this operation, 60.4 kB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu jammy/universe amd64 sl amd64 5.02-1 [12.7 kB]
Fetched 12.7 kB in 0s (31.0 kB/s)
debconf: delaying package configuration, since apt-utils is not installed
Selecting previously unselected package sl.
(Reading database ... 18050 files and directories currently installed.)
Preparing to unpack .../archives/sl_5.02-1_amd64.deb ...
Unpacking sl (5.02-1) ...
Setting up sl (5.02-1) ...
ubuntu@ubuntu-2274802010449:~$

```

- Kết hợp sl với lolcat và xem kết quả



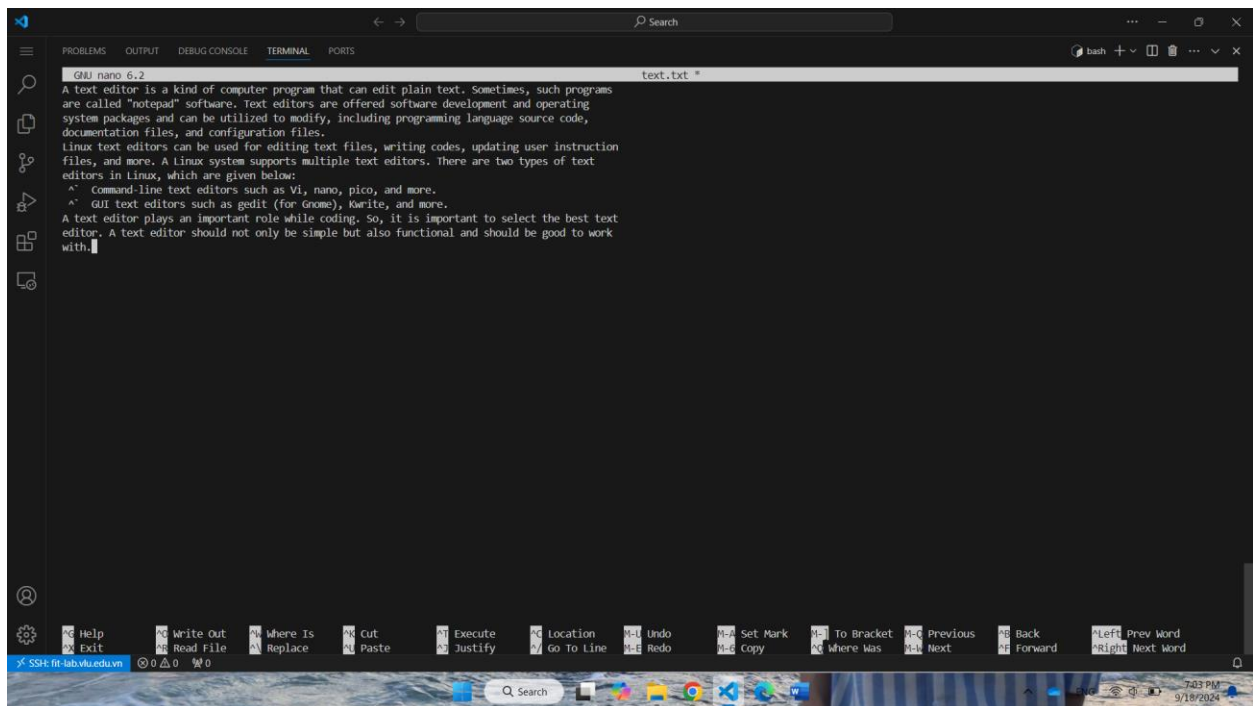
e) Cài đặt phần mềm text editor cho Linux Command Line.

```

ubuntu@ubuntu-2274802010449:~$ sudo apt install nano -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Suggested packages:
  hunspell
The following NEW packages will be installed:
  nano
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 280 kB of archives.
After this operation, 881 kB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu jammy/main amd64 nano amd64 6.2-1 [280 kB]
Fetched 280 kB in 2s (153 kB/s)
debconf: delaying package configuration, since apt-utils is not installed
Selecting previously unselected package nano.
(Reading database ... 18073 files and directories currently installed.)
Preparing to unpack .../archives/nano_6.2-1_amd64.deb ...
Unpacking nano (6.2-1) ...
Setting up nano (6.2-1) ...
update-alternatives: using /bin/nano to provide /usr/bin/editor (editor) in auto mode
update-alternatives: warning: skip creation of /usr/share/man/man1/editor.1.gz because associated file /usr/share/man/man1/nano.1.gz (of link group editor) doesn't exist
update-alternatives: using /bin/nano to provide /usr/bin/pico (pico) in auto mode
update-alternatives: warning: skip creation of /usr/share/man/man1/pico.1.gz because associated file /usr/share/man/man1/nano.1.gz (of link group pico) doesn't exist

```

- Sử dụng phần mềm đã cài đặt để viết nội dung dưới đây vào file có tên “text.txt”.



```

ubuntu@ubuntu-2274802010449:~$ cat text.txt
A text editor is a kind of computer program that can edit plain text. Sometimes, such programs
are called "notepad" software. Text editors are offered software development and operating
system packages and can be utilized to modify, including programming language source code,
documentation files, and configuration files.
Linux text editors can be used for editing text files, writing codes, updating user instruction
files, and more. A Linux system supports multiple text editors. There are two types of text
editors in Linux, which are given below:
• Command-line text editors such as Vi, nano, pico, and more.
• GUI text editors such as gedit (for Gnome), Kwrite, and more.
A text editor plays an important role while coding. So, it is important to select the best text
editor. A text editor should not only be simple but also functional and should be good to work
with.

```


Bài 3: Liệt kê tất cả những dependencies và phiên bản của chúng trong quá trình cài đặt những phần mềm trong bài

- Figlet

```
ubuntu@ubuntu-2274802010449:~$ apt-cache depends figlet
figlet
Depends: libc6
```

- Lolcat

```
ubuntu@ubuntu-2274802010449:~$ apt-cache depends lolcat
lolcat
|Depends: ruby
Depends: <ruby-interpret>
Depends: ruby-paint
Depends: ruby-optimist
```

- Cowsay

```
ubuntu@ubuntu-2274802010449:~$ apt-cache depends cowsay
cowsay
Depends: libtext-charwidth-perl
Depends: <perl:any>
perl
Suggests: filters
Suggests: cowsay-off
```

- Fortune-mod


```
ubuntu@ubuntu-2274802010449:~$ apt-cache depends fortune-mod
fortune-mod
  Depends: libc6
  Depends: librecode0
  Conflicts: <fortune>
| Recommends: fortunes-min
  Recommends: <fortune-cookie-db>
    fortunes
    fortunes-bg
    fortunes-bofh-excuses
    fortunes-br
    fortunes-cs
    fortunes-de
    fortunes-debian-hints
    fortunes-eo
    fortunes-eo-ascii
    fortunes-eo-iso3
    fortunes-es
    fortunes-es-off
    fortunes-ga
    fortunes-it
    fortunes-it-off
    fortunes-mario
    fortunes-min
    fortunes-off
    fortunes-pl
    fortunes-ru
    fortunes-spam
    fortunes-ubuntu-server
    fortunes-zh
  Suggests: fortunes
  Suggests: x11-utils
  Suggests: bsdmainutils
  Replaces: <fortune>
    fortune-mod
```

Bài 4: Cài đặt gói phần mềm có tên Asciiquarium.

Trước khi cài đặt asciiquarium, hãy chắc chắn rằng các thư viện cần thiết đã được cài đặt. Bạn có thể làm điều này bằng cách cài đặt perl và Term::Animation, một thư viện cần thiết để chạy asciiquarium.

```
sudo apt install libcurses-perl -y
```

```
sudo apt install perl -y
```

```
sudo cpanm Term::Animation
```

```
ubuntu@ubuntu-2274802010449:~$ sudo apt install asciiquarium -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
E: Unable to locate package asciiquarium
```

```
ubuntu@ubuntu-2274802010449:~$ sudo apt install cpanminus
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libalgorithm-c3-perl libany-uri-escape-perl libb-hooks-endofscope-perl libb-hooks-op-check-perl libclass-c3-perl libclass-c3-xs-perl libclass-method-modifiers-perl libclass-xsaccessor-perl
  libclone-perl libcpan-changes-perl libcpan-distnameinfo-perl libcpan-meta-check-perl libdata-optlist-perl libdata-perl-perl libdata-section-perl libdevel-callchecker-perl
  libdynaloader-functions-perl libencode-locale-perl libexporter-tiny-perl libfile-pushd-perl libfile-slurp-perl libgetopt-long-descriptive-perl libhtml-parser-perl libhtml-tagset-perl
  libhttp-date-perl libhttp-message-perl libidn2-perl libimport-into-perl libio-html-perl libio-stringy-perl liblist-moreutils-perl liblist-moreutils-xs-perl liblocal-lib-perl liblwp-mediatypes-perl
  libmodule-build-perl libmodule-cpanfile-perl libmodule-implementation-perl libmodule-runtime-perl libmodule-signature-perl libmoo-perl libmoox-handlessvia-perl libmo-compat-perl
  libnamespace-autoclean-perl libnamespace-clean-perl libnet-libidn-perl libpackage-stash-perl libpackage-stash-xs-perl libparams-classify-perl libparams-util-perl libparams-validate-perl
  libparse-pafile-perl libpath-tiny-perl libpod-markdown-perl libpod-readme-perl libreadonly-perl libref-util-perl libref-util-xs-perl librole-tiny-perl libsoftware-license-perl libstrictures-perl
  libstring-shellquote-perl libsub-exporter-perl libsub-exporter-progressive-perl libsub-identify-perl libsub-install-perl libsub-name-perl libsub-quote-perl libtext-template-perl libtimedate-perl
  libtry-tiny-perl libtype-tiny-perl libtype-tiny-xs-perl libunicode-utf8-perl liburi-escape-xs-perl liburi-perl libvariable-magic-perl make
Suggested packages:
  gcc | c-compiler libdata-dump-perl libscalar-number-perl libbareword-filehandles-perl libindirect-perl libmultidimensional-perl libdevel-lexalias-perl libdevel-stacktrace-perl libbusiness-isbn-perl
  libwww-perl make-doc
The following NEW packages will be installed:
  cpanminus libalgorithm-c3-perl libany-uri-escape-perl libb-hooks-endofscope-perl libb-hooks-op-check-perl libclass-c3-perl libclass-c3-xs-perl libclass-method-modifiers-perl
  libclass-xsaccessor-perl libclone-perl libcpan-changes-perl libcpan-distnameinfo-perl libcpan-meta-check-perl libdata-optlist-perl libdata-perl-perl libdata-section-perl libdevel-callchecker-perl
  libdynaloader-functions-perl libencode-locale-perl libexporter-tiny-perl libfile-pushd-perl libfile-slurp-perl libgetopt-long-descriptive-perl libhtml-parser-perl libhtml-tagset-perl
  libhttp-date-perl libhttp-message-perl libidn2-perl libimport-into-perl libio-html-perl libio-stringy-perl liblist-moreutils-perl liblist-moreutils-xs-perl liblocal-lib-perl liblwp-mediatypes-perl
  libmodule-build-perl libmodule-cpanfile-perl libmodule-implementation-perl libmodule-runtime-perl libmodule-signature-perl libmoo-perl libmoox-handlessvia-perl libmo-compat-perl
  libnamespace-autoclean-perl libnamespace-clean-perl libnet-libidn-perl libpackage-stash-perl libpackage-stash-xs-perl libparams-classify-perl libparams-util-perl libparams-validate-perl
  libparse-pafile-perl libpath-tiny-perl libpod-markdown-perl libpod-readme-perl libreadonly-perl libref-util-perl libref-util-xs-perl librole-tiny-perl libsoftware-license-perl libstrictures-perl
  libstring-shellquote-perl libsub-exporter-perl libsub-exporter-progressive-perl libsub-identify-perl libsub-install-perl libsub-name-perl libsub-quote-perl libtext-template-perl libtimedate-perl
  libtry-tiny-perl libtype-tiny-perl libtype-tiny-xs-perl libunicode-utf8-perl liburi-escape-xs-perl liburi-perl libvariable-magic-perl make
0 upgraded, 78 newly installed, 0 to remove and 0 not upgraded.
```

- Tải mã nguồn từ kho lưu trữ thông qua lệnh wget

```
ubuntu@ubuntu-2274802010449:~$ wget http://www.robobunny.com/projects/asciiquarium/asciiquarium.tar.gz
--2024-09-18 12:31:21-- http://www.robobunny.com/projects/asciiquarium/asciiquarium.tar.gz
Resolving www.robobunny.com (www.robobunny.com)... 71.158.88.45
Connecting to www.robobunny.com (www.robobunny.com)[71.158.88.45]:80... connected.
HTTP request sent, awaiting response... 301 Moved Permanently
Location: https://robobunny.com/projects/asciiquarium/asciiquarium.tar.gz [following]
--2024-09-18 12:31:22-- https://robobunny.com/projects/asciiquarium/asciiquarium.tar.gz
Resolving robobunny.com (robobunny.com)... 71.158.88.45
Connecting to robobunny.com (robobunny.com)[71.158.88.45]:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 15436 (15K) [application/gzip]
Saving to: 'asciiquarium.tar.gz'

asciiquarium.tar.gz 100%[=====>] 15.07K 60.6KB/s in 0.2s

2024-09-18 12:31:23 (60.6 KB/s) - 'asciiquarium.tar.gz' saved [15436/15436]

ubuntu@ubuntu-2274802010449:~$
```

- Giải nén tệp tải về

```
ubuntu@ubuntu-2274802010449:~$ tar -zxvf asciiquarium.tar.gz
asciiquarium_1.1/
asciiquarium_1.1/CHANGES
asciiquarium_1.1/README
asciiquarium_1.1/MANIFEST
asciiquarium_1.1/asciiquarium
asciiquarium_1.1/gpl.txt
ubuntu@ubuntu-2274802010449:~$
```

- Di chuyển vào thư `asciiquarium_1.1`

```
ubuntu@ubuntu-2274802010449:~$ cd asciiquarium_1.1
ubuntu@ubuntu-2274802010449:~/asciiquarium_1.1$
```

- Sao chép tệp thực thi 'asciiquarium' vào thư mục /usr/local/bin/

```
ubuntu@ubuntu-2274802010449:~/asciiquarium_1.1$ sudo cp asciiquarium /usr/local/bin/
```

- Cấp quyền thực thi cho tập `asciiaquarium`

```
ubuntu@ubuntu-2274802010449:~/asciiquarium_1.1$ sudo chmod +x /usr/local/bin/asciiquarium
```

- Kiểm tra kết quả cài đặt bằng cách chạy các câu lệnh của Asciiquarium trên terminal

