Exercise 2: Changing images.

In this exercise, we'll do how to modify an existing Docker image, and commit it as a new one. we'll modify the ubuntu:16.04 image to include the ping utility.

Getting setup:
we use our previous image of ubuntu we pull from docker hub.

Let's modify an image:
Let's run the image in a new container and install the ping utility.

First start the container with /bin/bash:

```
08f580
dhruvrajsinh@sf-cpu-371:~$ docker run -it ubuntu:16.04 /bin/bash
root@635f959d50bc:/#
```

Now let's trying to run ping command in terminal.

but it will show that command not found so we have to download ping utility in our system.

so first we have to update by apt-get-update

```
dhruvrajsinh@sf-cpu-371:~$ docker run -it ubuntu:16.04 /bin/bash
root@635f959d50bc:/# ping www.google.com
bash: ping: command not found
root@635f959d50bc:/# apt-get-update
bash: apt-get-update: command not found
root@635f959d50bc:/# apt-get update
Get:1 http://security.ubuntu.com/ubuntu xenial-security InRelease [99.8 kB]
Get:2 http://archive.ubuntu.com/ubuntu xenial InRelease [247 kB]
Get:3 http://security.ubuntu.com/ubuntu xenial-security/main amd64 Packages [2051 kB]
Get:4 http://archive.ubuntu.com/ubuntu xenial-updates InRelease [99.8 kB]
Get:5 http://archive.ubuntu.com/ubuntu xenial-backports InRelease [97.4 kB]
Get:6 http://archive.ubuntu.com/ubuntu xenial/main amd64 Packages [1558 kB]
Get:7 http://security.ubuntu.com/ubuntu xenial-security/restricted amd64 Packages [15.9 kB]
28% [6 Packages 1135 kB/1558 kB 73%] [7 Packages 5585 B/15.9 kB 35%]
C
```

Now we can install the ping command.

```
C
root@635f959d50bc:/# apt-get install iputils-ping
Reading package lists... Done
Building dependency tree
Reading state information... Done
```

now we are able to use ping command.

```
root@635f959d50bc:/# ping www.google.com
PING www.google.com (142.250.192.132) 56(84) bytes of data.
64 bytes from bom12s18-in-f4.1e100.net (142.250.192.132): icmp_seq=1 ttl=116 time=18.5 ms
64 bytes from bom12s18-in-f4.1e100.net (142.250.192.132): icmp_seq=2 ttl=116 time=24.9 ms
64 bytes from bom12s18-in-f4.1e100.net (142.250.192.132): icmp_seq=3 ttl=116 time=22.0 ms
64 bytes from bom12s18-in-f4.1e100.net (142.250.192.132): icmp_seq=4 ttl=116 time=71.7 ms
64 bytes from bom12s18-in-f4.1e100.net (142.250.192.132): icmp_seq=5 ttl=116 time=26.8 ms
64 bytes from bom12s18-in-f4.1e100.net (142.250.192.132): icmp_seq=6 ttl=116 time=33.0 ms
64 bytes from bom12s18-in-f4.1e100.net (142.250.192.132): icmp_seq=7 ttl=116 time=15.4 ms
64 bytes from bom12s18-in-f4.1e100.net (142.250.192.132): icmp_seq=8 ttl=116 time=69.2 ms
64 bytes from bom12s18-in-f4.1e100.net (142.250.192.132): icmp_seq=9 ttl=116 time=39.2 ms
64 bytes from bom12s18-in-f4.1e100.net (142.250.192.132): icmp_seq=10 ttl=116 time=17.5 ms
64 bytes from bom12s18-in-f4.1e100.net (142.250.192.132): icmp_seq=11 ttl=116 time=13.4 ms
64 bytes from bom12s18-in-f4.1e100.net (142.250.192.132): icmp_seq=12 ttl=116 time=56.2 ms
^C
```

Let's commit changes:

installing ping command every time is not very special why we can do some that after we pull the images the ping command is already install. this concept is called docker commit. 1.Let's find our container to create the new image from.

Fortunately, we have a Docker container with our ping utility already installed from the previous steps. It should be stopped right now, but let's find its container ID.

Now let's commit it as a new image.

docker commit takes a container, and allows you to commit its changes as a new image.

docker commit –help

```
dhruvrajsinh@sf-cpu-371:~$ docker commit --help

Usage:  docker commit [OPTIONS] CONTAINER [REPOSITORY[:TAG]]

Create a new image from a container's changes

Aliases:
  docker container commit, docker commit

Options:
  -a, --author string    Author (e.g., "John Hannibal Smith <hannibal@a-team.com>")
  -c, --change list      Apply Dockerfile instruction to the created image
  -m, --message string   Commit message
  -p, --pause            Pause container during commit (default true)
dhruvrajsinh@sf-cpu-371:~$
```

now let's Pass the container ID, an author, commit message, and give it the name /ping:

```
c2f18885e798   ubuntu:16.04   "/bin/bash"   47 hours ago     Exited (0) 47 hours ago
llo
dhruvrajsinh@sf-cpu-371:~$ docker commit -a dabhidhruvraj -m ''added ping utility' 635f9
>
```

now let's check by **docker images** to see our new images.

now let's run this new image in new container to show that ping is work or not.

```
root@635f959d50bc:/# ping www.google.com
PING www.google.com (142.250.192.132) 56(84) bytes of data.
64 bytes from bom12s18-in-f4.1e100.net (142.250.192.132): icmp_seq=1 ttl=116 time=18.5 ms
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```