1- check the docker version installed
2- run docker container for hello-world

```
fady@fady-Elia:~$ docker -v
Docker version 20.10.21, build 20.10.21-0ubuntu1~22.04.3
fady@fady-Elia:~$ docker run hello-world

Hello from Docker!
This message shows that your installation appears to be working correctly.

To generate this message, Docker took the following steps:
 1. The Docker client contacted the Docker daemon.
 2. The Docker daemon pulled the "hello-world" image from the Docker Hub.
    (amd64)
 3. The Docker daemon created a new container from that image which runs the
    executable that produces the output you are currently reading.
 4. The Docker daemon streamed that output to the Docker client, which sent it
    to your terminal.

To try something more ambitious, you can run an Ubuntu container with:
 $ docker run -it ubuntu bash

Share images, automate workflows, and more with a free Docker ID:
 https://hub.docker.com/

For more examples and ideas, visit:
 https://docs.docker.com/get-started/
```

3- run docker container redis in detached mode
4- try to stop the running redis container
4- check the present container o the host
5- check the ID of the redis container

```
fady@fady-Elia:~$ docker run -d redis
beaae26ecbd0934ac6ab52368822799ec11127ed0966a2634b8d5089a02f2bcb
fady@fady-Elia:~$ docker container ps -a
CONTAINER ID   IMAGE                COMMAND                   CREATED          STATUS                     PORTS       NAMES
beaae26ecbd0   redis                "docker-entrypoint.s…"    49 seconds ago   Up 48 seconds              6379/tcp    distracted_mestorf
292abb995de9   redis                "docker-entrypoint.s…"    2 minutes ago    Up 2 minutes               6379/tcp    zealous_mirzakhani
18278b2b95c0   hello-world          "/hello"                  12 minutes ago   Exited (0) 12 minutes ago              priceless_snyder
a9dd03f7823b   hello-world          "/hello"                  24 hours ago     Exited (0) 24 hours ago                angry_keldysh
beca5c1d23b4   postgres:10.10       "docker-entrypoint.s…"    6 days ago       Exited (0) 6 days ago                  crazy_euclid
6b547cd591fe   postgres:9.6         "docker-entrypoint.s…"    6 days ago       Exited (1) 6 days ago                  happy_roentgen
f45554fc7d86   my-nginx-web-server  "/docker-entrypoint.…"    6 days ago       Exited (0) 6 days ago                  silly_tesla
19bf34a75c27   my-nginx-web-server  "/docker-entrypoint.…"    6 days ago       Created                                determined_gates
4697138ca461   my-nginx-web-server  "/docker-entrypoint.…"    6 days ago       Created                                hardcore_nash
c33cef22f445   my-nginx-web-server  "/docker-entrypoint.…"    6 days ago       Exited (0) 6 days ago                  charming_banzai
202de7b92061   my-nginx-web-server  "/docker-entrypoint.…"    6 days ago       Created                                nostalgic_aryabhata
f2e46aec2a2f   my-nginx-web-server  "/docker-entrypoint.…"    6 days ago       Created                                distracted_heisenberg
2194fadf0159   my-nginx-web-server  "/docker-entrypoint.…"    6 days ago       Exited (0) 6 days ago                  hungry_tesla
fady@fady-Elia:~$ docker stop beaae26ecbd0
beaae26ecbd0
fady@fady-Elia:~$ docker container ps -a
CONTAINER ID   IMAGE                COMMAND                   CREATED             STATUS                    PORTS       NAMES
beaae26ecbd0   redis                "docker-entrypoint.s…"    About a minute ago  Exited (0) 5 seconds ago              distracted_mestorf
292abb995de9   redis                "docker-entrypoint.s…"    3 minutes ago       Up 3 minutes              6379/tcp    zealous_mirzakhani
18278b2b95c0   hello-world          "/hello"                  13 minutes ago      Exited (0) 13 minutes ago             priceless_snyder
a9dd03f7823b   hello-world          "/hello"                  24 hours ago        Exited (0) 24 hours ago               angry_keldysh
beca5c1d23b4   postgres:10.10       "docker-entrypoint.s…"    6 days ago          Exited (0) 6 days ago                 crazy_euclid
6b547cd591fe   postgres:9.6         "docker-entrypoint.s…"    6 days ago          Exited (1) 6 days ago                 happy_roentgen
f45554fc7d86   my-nginx-web-server  "/docker-entrypoint.…"    6 days ago          Exited (0) 6 days ago                 silly_tesla
19bf34a75c27   my-nginx-web-server  "/docker-entrypoint.…"    6 days ago          Created                               determined_gates
4697138ca461   my-nginx-web-server  "/docker-entrypoint.…"    6 days ago          Created                               hardcore_nash
c33cef22f445   my-nginx-web-server  "/docker-entrypoint.…"    6 days ago          Exited (0) 6 days ago                 charming_banzai
202de7b92061   my-nginx-web-server  "/docker-entrypoint.…"    6 days ago          Created                               nostalgic_aryabhata
f2e46aec2a2f   my-nginx-web-server  "/docker-entrypoint.…"    6 days ago          Created                               distracted_heisenberg
2194fadf0159   my-nginx-web-server  "/docker-entrypoint.…"    6 days ago          Exited (0) 6 days ago                 hungry_tesla
fady@fady-Elia:~$
```

6- try to run a container from nginx:alpine and delete image

```
fady@fady-Elia:~$ docker run nginx:alpine
Unable to find image 'nginx:alpine' locally
alpine: Pulling from library/nginx
f56be85fc22e: Pull complete
97c80f11709c: Pull complete
afb503c1f124: Pull complete
f8c948b732dd: Pull complete
d021bba29710: Pull complete
cadcca1af197: Pull complete
4aacde79cec4: Pull complete
Digest: sha256:2e776a66a3556f001aba13431b26e448fe8acba277bf93d2ab1a785571a46d90
Status: Downloaded newer image for nginx:alpine
/docker-entrypoint.sh: /docker-entrypoint.d/ is not empty, will attempt to perform configuration
/docker-entrypoint.sh: Looking for shell scripts in /docker-entrypoint.d/
/docker-entrypoint.sh: Launching /docker-entrypoint.d/10-listen-on-ipv6-by-default.sh
10-listen-on-ipv6-by-default.sh: info: Getting the checksum of /etc/nginx/conf.d/default.conf
10-listen-on-ipv6-by-default.sh: info: Enabled listen on IPv6 in /etc/nginx/conf.d/default.conf
/docker-entrypoint.sh: Launching /docker-entrypoint.d/20-envsubst-on-templates.sh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/30-tune-worker-processes.sh
/docker-entrypoint.sh: Configuration complete; ready for start up
```

```
fady@fady-Elia:~$ docker images
REPOSITORY            TAG        IMAGE ID        CREATED          SIZE
nginx                 alpine     fe7edaf8a8dc    11 hours ago     41.4MB
redis                 latest     0ec8ab59a35f    47 hours ago     117MB
my-nginx-web-server   latest     e4c88261170c    6 days ago       142MB
hello-world           latest     9c7a54a9a43c    2 weeks ago      13.3kB
nginx                 latest     448a08f1d2f9    3 weeks ago      142MB
postgres              9.6        027ccf656dc1    15 months ago    200MB
postgres              10.10      9a05a2b9e69f    3 years ago      211MB
fady@fady-Elia:~$ docker rmi -f fe7edaf8a8dc
Untagged: nginx:alpine
Untagged: nginx@sha256:2e776a66a3556f001aba13431b26e448fe8acba277bf93d2ab1a785571a46d90
Deleted: sha256:fe7edaf8a8dcf9af72f49cf0a0219e3ace17667bafc537f0d4a0ab1bd7f10467
fady@fady-Elia:~$
```

7- delete the image redis\

```
fady@fady-Elia:~$ docker images
REPOSITORY            TAG        IMAGE ID        CREATED          SIZE
redis                 latest     0ec8ab59a35f    47 hours ago     117MB
my-nginx-web-server   latest     e4c88261170c    6 days ago       142MB
hello-world           latest     9c7a54a9a43c    2 weeks ago      13.3kB
nginx                 latest     448a08f1d2f9    3 weeks ago      142MB
postgres              9.6        027ccf656dc1    15 months ago    200MB
postgres              10.10      9a05a2b9e69f    3 years ago      211MB
fady@fady-Elia:~$ docker rmi 0ec8ab59a35f
Untagged: redis:latest
Untagged: redis@sha256:f9724694a0b97288d2255ff2b69642dfba7f34c8e41aaf0a59d33d10d8a42687
Deleted: sha256:0ec8ab59a35faa3aaee416630128e11949d44ac82d15d43053f8af5d61182a5d
Deleted: sha256:f89720eafb298773509177d4b8b76a32adda4da1015ca28f52daa03fc6090499
Deleted: sha256:c3b5385e13627e14d553f09a098275d1f1ada0b6228cc30c92e095d669df799c
Deleted: sha256:b830b2806be6a052c6d857f927f72ef18a2539e69fdb6d51cf95d76d7e06c8f1
Deleted: sha256:8de1c0863fac10debb4e19de0cc27639ae97c1111eca0920649b21d97bc8dded
Deleted: sha256:80940c1d5550f3f56f5ab008aa79e899e4d3c9b6b41b9f76077f31dcfb2c482c
Deleted: sha256:8cbe4b54fa88d8fc0198ea0cc3a5432aea41573e6a0ee26eca8c79f9fbfa40e3
fady@fady-Elia:~$ docker images
REPOSITORY            TAG        IMAGE ID        CREATED          SIZE
my-nginx-web-server   latest     e4c88261170c    6 days ago       142MB
hello-world           latest     9c7a54a9a43c    2 weeks ago      13.3kB
nginx                 latest     448a08f1d2f9    3 weeks ago      142MB
postgres              9.6        027ccf656dc1    15 months ago    200MB
postgres              10.10      9a05a2b9e69f    3 years ago      211MB
fady@fady-Elia:~$
```

8- pull image from nginx:1.14-alpine

```
fady@fady-Elia:~$ docker pull nginx:1.14-alpine
1.14-alpine: Pulling from library/nginx
bdf0201b3a05: Pull complete
3d0a573c81ed: Pull complete
8129faeb2eb6: Pull complete
3dc99f571daf: Pull complete
Digest: sha256:485b610fefec7ff6c463ced9623314a04ed67e3945b9c08d7e53a47f6d108dc7
Status: Downloaded newer image for nginx:1.14-alpine
docker.io/library/nginx:1.14-alpine
fady@fady-Elia:~$
```

Run an instance of the ubuntu image to run the sleep 1000 command at startup.
Exec into the container and touch a file called test-file

```
fady@fady-Elia:~$ docker run ubuntu sleep 1000
Unable to find image 'ubuntu:latest' locally
latest: Pulling from library/ubuntu
dbf6a9befcde: Pull complete
Digest: sha256:dfd64a3b4296d8c9b62aa3309984f8620b98d87e47492599ee20739e8eb54fbf
Status: Downloaded newer image for ubuntu:latest
```

```
fady@fady-Elia:~$ docker exec -it ubuntu /bin/bash
Error: No such container: ubuntu
fady@fady-Elia:~$ docker container ps
CONTAINER ID   IMAGE     COMMAND        CREATED        STATUS         PORTS     NAMES
e9cd943633e9   ubuntu    "sleep 1000"   5 minutes ago  Up 5 minutes             trusting_wilson
fady@fady-Elia:~$ docker exec -it e9cd943633e9 /bin/bash
root@e9cd943633e9:/# ls
bin  boot  dev  etc  home  lib  lib32  lib64  libx32  media  mnt  opt  proc  root  run  sbin  srv  sys  tmp  usr  var
root@e9cd943633e9:/# touch test-file
root@e9cd943633e9:/# ls
bin  boot  dev  etc  home  lib  lib32  lib64  libx32  media  mnt  opt  proc  root  run  sbin  srv  sys  test-file  tmp  usr  var
root@e9cd943633e9:/#
```

9- Run a container with the nginx:alpine image and name it web

```
fady@fady-Elia:~$ docker run --name web nginx:alpine
Unable to find image 'nginx:alpine' locally
alpine: Pulling from library/nginx
f56be85fc22e: Already exists
97c80f11709c: Already exists
afb503c1f124: Already exists
f8c948b732dd: Already exists
d021bba29710: Already exists
cadcca1af197: Already exists
4aacde79cec4: Already exists
Digest: sha256:2e776a66a3556f001aba13431b26e448fe8acba277bf93d2ab1a785571a46d90
```

10- delete all the images from the host

```
fady@fady-Elia:~$ docker images
\REPOSITORY      TAG          IMAGE ID         CREATED         SIZE
hello-world     latest       9c7a54a9a43c     2 weeks ago     13.3kB
nginx           latest       448a08f1d2f9     3 weeks ago     142MB
ubuntu          latest       3b418d7b466a     4 weeks ago     77.8MB
postgres        9.6          027ccf656dc1     15 months ago   200MB
postgres        10.10        9a05a2b9e69f     3 years ago     211MB
nginx           1.14-alpine  8a2fb25a19f5     4 years ago     16MB
fady@fady-Elia:~$ docker rmi -f 9c7a54a9a43c 448a08f1d2f9 3b418d7b466a 027ccf656dc1 9a05a2b9e69f 8a2fb25a19f5
Untagged: hello-world:latest
Untagged: hello-world@sha256:fc6cf906cbfa013e80938cdf0bb199fbdbb86d6e3e013783e5a766f50f5dbce0
Deleted: sha256:9c7a54a9a43cca047013b82af109fe963fde787f63f9e016fdc3384500c2823d
Untagged: nginx:latest
Untagged: nginx@sha256:480868e8c8c797794257e2abd88d0f9a8809b2fe956cbfbc05dcc0bca1f7cd43
Deleted: sha256:448a08f1d2f94e8db6db9286fd77a3a4f3712786583720a12f1648abb8cace25
Untagged: ubuntu:latest
Untagged: ubuntu@sha256:dfd64a3b4296d8c9b62aa3309984f8620b98d87e47492599ee20739e8eb54fbf
Deleted: sha256:3b418d7b466ac6275a6bfcb0c86fbe4422ff6ea0af444a294f82d3bf5173ce74
Untagged: postgres:9.6
Untagged: postgres@sha256:caddd35b05cdd56c614ab1f674e63be778e0abdf54e71a7507ff3e28d4902698
Deleted: sha256:027ccf656dc121a26b53cac03415d4326a75bf2751f177210d47793754e8b316
Untagged: postgres:10.10
Untagged: postgres@sha256:3263c8dad1b5aa6be80144786b18515910165ed771863d686c8b8fda30fea1ad
Deleted: sha256:9a05a2b9e69ffa14627826208dae53ac2ad6aede47b6071bd78dc25774ec578b
Untagged: nginx:1.14-alpine
Untagged: nginx@sha256:485b610fefec7ff6c463ced9623314a04ed67e3945b9c08d7e53a47f6d108dc7
Deleted: sha256:8a2fb25a19f5dc1528b7a3fabe8b3145ff57fe10e4f1edac6c718a3cf4aa4b73
Deleted: sha256:f68a8bcb9dbd06e0d2750eabf63c45f51734a72831ed650d2349775865d5fc20
Deleted: sha256:cbf2c7789332fe231e8defa490527a7b2c3ae8589997ceee00895f3263f0a8cf
Deleted: sha256:894f3fad7e6ecd7f24e88340a44b7b73663a85c0eb7740e7ade169e9d8491a4c
Deleted: sha256:a464c54f93a9e88fc1d33df1e0e39cca427d60145a360962e8f19a1dbf900da9
fady@fady-Elia:~$ docker images
REPOSITORY    TAG        IMAGE ID    CREATED    SIZE
fady@fady-Elia:~$
```