1. Create an image from **not** optimized Dockerfile

```
FROM ubuntu:latest

RUN apt-get update

RUN apt-get -y upgrade

RUN apt install -y nginx

COPY index.html /var/www/html/

CMD ["nginx", "-g", "daemon off;"]
~
```

```
vladyslavpodkhaliuzin@vladyslavpodkhaliuzin:~/lesson4$ sudo docker build -t my-nginx:0.1 .
[+] Building 18.5s (11/11) FINISHED                                                                                                  docker:default
 => [internal] load build definition from Dockerfile                                                                                          0.0s
 => => transferring dockerfile: 196B                                                                                                          0.0s
 => [internal] load metadata for docker.io/library/ubuntu:latest                                                                              2.1s
 => [auth] library/ubuntu:pull token for registry-1.docker.io                                                                                 0.0s
 => [internal] load .dockerignore                                                                                                             0.0s
 => => transferring context: 2B                                                                                                               0.0s
 => [1/5] FROM docker.io/library/ubuntu:latest@sha256:72297848456d5d37d1262630108ab308d3e9ec7ed1c3286a32fe09856619a782                         3.6s
 => => resolve docker.io/library/ubuntu:latest@sha256:72297848456d5d37d1262630108ab308d3e9ec7ed1c3286a32fe09856619a782                         0.0s
 => => sha256:a3f23b6e99cee41b8fffbd8a22d75728bb1f06af30fc79f533f27c096eda8993 424B / 424B                                                    0.0s
 => => sha256:c3d1a34325805c22bf44a5157224bcff58dc6a8868558c7746d6a2ea64eb191c 2.31kB / 2.31kB                                                0.0s
 => => sha256:5b17151e9710ed47471b3928b05325fa4832121a395b9647b7e50d3993e17ce0 28.89MB / 28.89MB                                              2.6s
 => => sha256:72297848456d5d37d1262630108ab308d3e9ec7ed1c3286a32fe09856619a782 6.69kB / 6.69kB                                                0.0s
 => => extracting sha256:5b17151e9710ed47471b3928b05325fa4832121a395b9647b7e50d3993e17ce0                                                     0.8s
 => [internal] load build context                                                                                                             0.0s
 => => transferring context: 285B                                                                                                             0.0s
 => [2/5] RUN apt-get update                                                                                                                  4.4s
 => [3/5] RUN apt-get -y upgrade                                                                                                              5.3s
 => [4/5] RUN apt install -y nginx                                                                                                            2.5s
 => [5/5] COPY index.html /var/www/html/                                                                                                      0.0s
 => exporting to image                                                                                                                        0.1s
 => => exporting layers                                                                                                                       0.1s
 => => writing image sha256:f1e4af6a799956d59a5a71f02883d9cc8d07d80ff0a29a1949d1810372b0c698                                                  0.0s
 => => naming to docker.io/library/my-nginx:0.1                                                                                               0.0s
vladyslavpodkhaliuzin@vladyslavpodkhaliuzin:~/lesson4$ ll
total 16
drwxr-xr-x 2 root                  root                  4096 Feb  9 20:49 ./
drwxr-x--- 8 vladyslavpodkhaliuzin vladyslavpodkhaliuzin 4096 Feb  9 20:46 ../
-rw-r--r-- 1 root                  root                   157 Feb  9 20:48 Dockerfile
-rw-r--r-- 1 root                  root                   246 Feb  9 20:49 index.html
vladyslavpodkhaliuzin@vladyslavpodkhaliuzin:~/lesson4$ ocker images
Command 'ocker' not found, did you mean:
  command 'docker' from snap docker (27.2.0)
  command 'docker' from deb docker.io (24.0.7-0ubuntu4.1)
  command 'docker' from deb podman-docker (4.9.3+ds1-1ubuntu0.2)
See 'snap info <snapname>' for additional versions.
vladyslavpodkhaliuzin@vladyslavpodkhaliuzin:~/lesson4$ sudo docker images
REPOSITORY    TAG       IMAGE ID       CREATED              SIZE
my-nginx      0.1       f1e4af6a7999   About a minute ago   196MB
my-app        latest    632d3dcf016d   3 hours ago          197MB
hello-world   latest    f1f77a0f96b7   2 weeks ago          5.2kB
gitea/gitea   1.22.6    071c5c0e37f4   8 weeks ago          177MB
nginx         latest    0dff3f9967e3   2 months ago         197MB
postgres      14        0ab8e2d50b0a   2 months ago         444MB
vladyslavpodkhaliuzin@vladyslavpodkhaliuzin:~/lesson4$ sudo docker images -ls
unknown shorthand flag: 'l' in -ls
See 'docker images --help'.
vladyslavpodkhaliuzin@vladyslavpodkhaliuzin:~/lesson4$ _
```

2. Create an image from optimized Dockerfile

```
RUN apt-get update && apt-get -y upgrade && apt install -y nginx

COPY index.html /var/www/html/

CMD ["nginx", "-g", "daemon off;"]
```

```
vladyslavpodkhaliuzin@vladyslavpodkhaliuzin:~/lesson4$ sudo docker build -t wpodkhaliuzin/my-nginx:0.2 .
[+] Building 13.8s (9/9) FINISHED
 => [internal] load build definition from Dockerfile
 => => transferring dockerfile: 192B
 => [internal] load metadata for docker.io/library/ubuntu:latest
 => [auth] library/ubuntu:pull token for registry-1.docker.io
 => [internal] load .dockerignore
 => => transferring context: 2B
 => CACHED [1/3] FROM docker.io/library/ubuntu:latest@sha256:72297848456d5d37d1262630108ab308d3e9ec7ed1c3286a32fe09856619a782
 => [internal] load build context
 => => transferring context: 32B
 => [2/3] RUN apt-get update && apt-get -y upgrade && apt install -y nginx
 => [3/3] COPY index.html /var/www/html/
 => exporting to image
 => => exporting layers
 => => writing image sha256:fecd1e48760c8db14fff9cff93b1d60b537368e9e630b8642ab8659594279c20
 => => naming to docker.io/wpodkhaliuzin/my-nginx:0.2
```

3. Compare sizes of two images

```
vladyslavpodkhaliuzin@vladyslavpodkhaliuzin:~/lesson4$ sudo docker images
REPOSITORY                TAG       IMAGE ID       CREATED          SIZE
wpodkhaliuzin/my-nginx    0.2       fecd1e48760c   25 seconds ago   194MB
my-nginx                  0.1       f1e4af6a7999   12 hours ago     196MB
wpodkhaliuzin/my-nginx    0.1       f1e4af6a7999   12 hours ago     196MB
my-app                    latest    632d3dcf016d   15 hours ago     197MB
hello-world               latest    f1f77a0f96b7   2 weeks ago      5.2kB
gitea/gitea               1.22.6    071c5c0e37f4   8 weeks ago      177MB
nginx                     latest    0dff3f9967e3   2 months ago     197MB
postgres                  14        0ab8e2d50b0a   2 months ago     444MB
```

4. Pull an images from Docker Hub and start a container

```
vladyslavpodkhaliuzin@vladyslavpodkhaliuzin:~$ sudo docker images
REPOSITORY    TAG       IMAGE ID       CREATED        SIZE
my-app        latest    632d3dcf016d   2 days ago     197MB
hello-world   latest    f1f77a0f96b7   3 weeks ago    5.2kB
gitea/gitea   1.22.6    071c5c0e37f4   2 months ago   177MB
nginx         latest    0dff3f9967e3   2 months ago   197MB
postgres      14        0ab8e2d50b0a   2 months ago   444MB
vladyslavpodkhaliuzin@vladyslavpodkhaliuzin:~$ sudo docker pull wpodkhaliuzin/my-nginx:0.2
0.2: Pulling from wpodkhaliuzin/my-nginx
5b17151e9710: Already exists
231cd9df1804: Already exists
0c41592a04b0: Already exists
Digest: sha256:c5f771206c9817a1d48264721990dac0266fdbe0ab88f46ab21e08165af558dd
Status: Downloaded newer image for wpodkhaliuzin/my-nginx:0.2
docker.io/wpodkhaliuzin/my-nginx:0.2
vladyslavpodkhaliuzin@vladyslavpodkhaliuzin:~$ sudo docker images
REPOSITORY                TAG       IMAGE ID       CREATED        SIZE
wpodkhaliuzin/my-nginx    0.2       fecd1e48760c   2 days ago     194MB
my-app                    latest    632d3dcf016d   2 days ago     197MB
hello-world               latest    f1f77a0f96b7   3 weeks ago    5.2kB
gitea/gitea               1.22.6    071c5c0e37f4   2 months ago   177MB
nginx                     latest    0dff3f9967e3   2 months ago   197MB
postgres                  14        0ab8e2d50b0a   2 months ago   444MB
vladyslavpodkhaliuzin@vladyslavpodkhaliuzin:~$ sudo docker run -d -p 8080:80 wpodkhaliuzin/my-nginx:0.2
0d2262d1fb876f0718abd4638452ff08c51f0ad2b58cc26c46887983e59340b6
vladyslavpodkhaliuzin@vladyslavpodkhaliuzin:~$ sudo docker ps
CONTAINER ID   IMAGE                       COMMAND                  CREATED         STATUS         PORTS                                       NAMES
0d2262d1fb87   wpodkhaliuzin/my-nginx:0.2   "nginx -g 'daemon of…"   12 seconds ago   Up 11 seconds   0.0.0.0:8080->80/tcp, [::]:8080->80/tcp   romantic_chandra
sekhar
vladyslavpodkhaliuzin@vladyslavpodkhaliuzin:~$
```