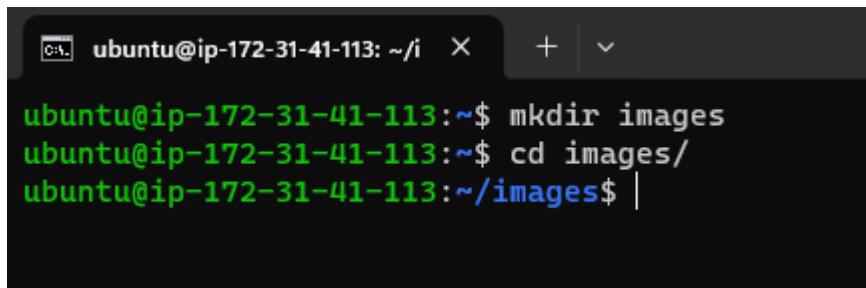


😊 Building Images

1. In this lab you are going to learn how to build images.
2. Now open your Ubuntu Session then you need to need create a directory.

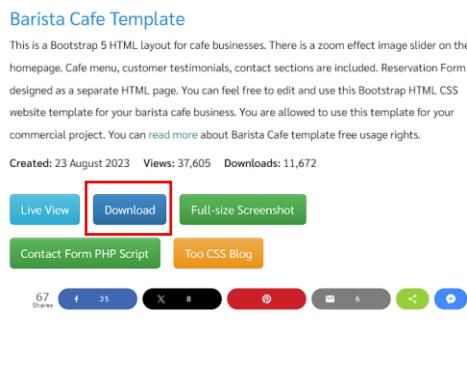


```
ubuntu@ip-172-31-41-113: ~/i × + | ~
ubuntu@ip-172-31-41-113:~$ mkdir images
ubuntu@ip-172-31-41-113:~$ cd images/
ubuntu@ip-172-31-41-113:~/images$ |
```

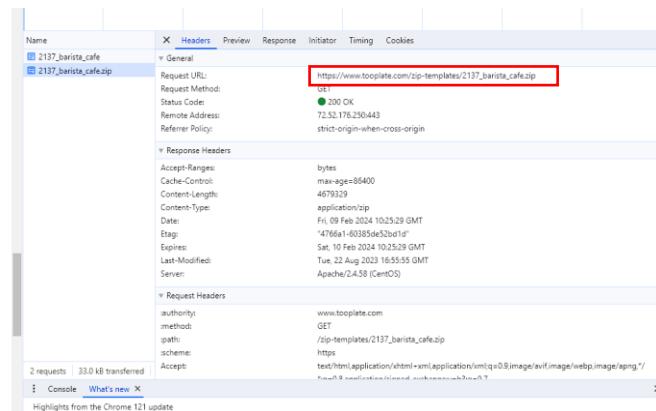
3. After that you need to navigate to a website from there you are going to take a template and host it via Apache2 service running in Ubuntu container.
4. Below is the website from which I used the template.

<https://www.tooplate.com/>

5. After that choose a template scroll it down and then press F12 on your keyboard to open elements.
6. Now you need the URL for that first click on download then from the elements choose the zip file and copy the URL from there.



Barista Cafe Template
This is a Bootstrap 5 HTML layout for cafe businesses. There is a zoom effect image slider on the homepage. Cafe menu, customer testimonials, contact sections are included. Reservation Form is designed as a separate HTML page. You can feel free to edit and use this Bootstrap HTML CSS website template for your barista cafe business. You are allowed to use this template for your commercial project. You can [read more](#) about Barista Cafe template free usage rights.
Created: 23 August 2023 Views: 37,605 Downloads: 11,672
[Live View](#) [Download](#) [Full-size Screenshot](#)
[Contact Form PHP Script](#) [Too CSS Blog](#)
67 Shares 



Name: 2137_barista_cafe
2137_barista_cafe.zip
Request URL: https://www.tooplate.com/zip-templates/2137_barista_cafe.zip
Request Method: GET
Status Code: 200 OK
Remote Address: 72.52.176.250:443
Referrer Policy: strict-origin-when-cross-origin
Response Headers
Accept-Ranges: bytes
Cache-Control: max-age=86400
Content-Length: 4679329
Content-Type: application/zip
Date: Fri, 09 Feb 2024 10:25:29 GMT
Etag: "476641-603835ed32bd1d"
Expires: Sat, 10 Feb 2024 10:25:29 GMT
Last-Modified: Tue, 22 Aug 2023 16:55:55 GMT
Server: Apache/2.4.58 (CentOS)
Request Headers
authority: www.tooplate.com
method: GET
path: /zip-templates/2137_barista_cafe.zip
scheme: https
accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/png,*/*
Highlight from the Chrome 121 update

7. After that come back to the session create a new directory in your previous one. Then name it, this name will also be your project name.
8. Now you are going to use wget command to get the zip file. and then you need to install the unzip on Ubuntu in order to unzip the zip file.

```
mkdir barista
wget 'mention your link'
ls
sudo apt install unzip -y
```

```

ubuntu@ip-172-31-41-113:~/images$ mkdir barista
ubuntu@ip-172-31-41-113:~/images$ wget https://www.tooplate.com/zip-templates/2137_barista_cafe.zip
--2024-02-09 10:30:38-- https://www.tooplate.com/zip-templates/2137_barista_cafe.zip
Resolving www.tooplate.com (www.tooplate.com)... 72.52.176.250
Connecting to www.tooplate.com (www.tooplate.com)|72.52.176.250|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 4679329 (4.5M) [application/zip]
Saving to: '2137_barista_cafe.zip'

2137_barista_cafe.zip      100%[=====] 4.46M 1.86MB/s   in 2.4s

2024-02-09 10:30:42 (1.86 MB/s) - '2137_barista_cafe.zip' saved [4679329/4679329]

ubuntu@ip-172-31-41-113:~/images$ ls
2137_barista_cafe.zip  barista
ubuntu@ip-172-31-41-113:~/images$ |

```

```

ubuntu@ip-172-31-41-113:~/images$ sudo apt install unzip -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Suggested packages:
  zip
The following NEW packages will be installed:
  unzip
0 upgraded, 1 newly installed, 0 to remove and 59 not upgraded.
Need to get 174 kB of archives.
After this operation, 385 kB of additional disk space will be used.
Get:1 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 unzip amd64 6.0-26ubuntu3.1 [174 kB]
Fetched 174 kB in 0s (7894 kB/s)
Selecting previously unselected package unzip.
(Reading database ... 65091 files and directories currently installed.)
Preparing to unpack .../unzip_6.0-26ubuntu3.1_amd64.deb ...
Unpacking unzip (6.0-26ubuntu3.1) ...
Setting up unzip (6.0-26ubuntu3.1) ...
Processing triggers for man-db (2.10.2-1) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-41-113:~/images$ |

```

9. Now you need to unzip this file.

unzip 'file name'

```

ubuntu@ip-172-31-41-113:~/images$ unzip 2137_barista_cafe.zip

```

```

ubuntu@ip-172-31-41-113:~/images$ ls
2137_barista_cafe  2137_barista_cafe.zip  barista

```

10. Now if you go inside your file, you can see the data.

```

ubuntu@ip-172-31-41-113:~/images$ cd 2137_barista_cafe
ubuntu@ip-172-31-41-113:~/images/2137_barista_cafe$ ls
'ABOUT THIS TEMPLATE.txt'  css  fonts  images  index.html  js  reservation.html  videos
ubuntu@ip-172-31-41-113:~/images/2137_barista_cafe$ |

```

11. Now you are going to tar this file. So, you archive everything in the directory.

tar czvf barista.tar.gz *

```

ubuntu@ip-172-31-41-113:~/images/2137_barista_cafe$ tar czvf barista.tar.gz *

```

12. After that you need to move the tar file up in the directory.

```
mv barista.tar.gz ../  
cd ..
```

```
ubuntu@ip-172-31-41-113:~/images/2137_barista_cafe$ ls  
'ABOUT THIS TEMPLATE.txt'  barista.tar.gz  css  fonts  images  index.html  js  reservation.html  
videos  
ubuntu@ip-172-31-41-113:~/images/2137_barista_cafe$ mv barista.tar.gz ../  
ubuntu@ip-172-31-41-113:~/images/2137_barista_cafe$ ls  
'ABOUT THIS TEMPLATE.txt'  css  fonts  images  index.html  js  reservation.html  videos  
ubuntu@ip-172-31-41-113:~/images/2137_barista_cafe$ cd ..  
ubuntu@ip-172-31-41-113:~/images$ ls  
2137_barista_cafe  2137_barista_cafe.zip  barista  barista.tar.gz  
ubuntu@ip-172-31-41-113:~/images$ |
```

13. As we have the tar file now, we can delete other things.

```
ubuntu@ip-172-31-41-113:~/images$ rm -rf 2137_barista_cafe 2137_barista_cafe.zip  
ubuntu@ip-172-31-41-113:~/images$ ls  
barista  barista.tar.gz  
ubuntu@ip-172-31-41-113:~/images$ |
```

14. Now you have the tarball so, you have the artifact.

15. Now move this artifact into barista directory.

```
ubuntu@ip-172-31-41-113:~/images$ mv barista.tar.gz barista/  
ubuntu@ip-172-31-41-113:~/images$ cd barista/  
ubuntu@ip-172-31-41-113:~/images/barista$ ls  
barista.tar.gz  
ubuntu@ip-172-31-41-113:~/images/barista$ |
```

16. Everything is setup now; you need to write the docker file.

17. So, use this code.

```
FROM ubuntu:latest  
LABEL "Author"="Docker"  
LABEL "Project"="barista"  
ENV DEBIAN_FRONTEND=noninteractive  
RUN apt update && apt install git -y  
RUN apt install apache2 -y  
CMD ["/usr/sbin/apache2ctl", "-D", "FOREGROUND"]  
EXPOSE 80  
WORKDIR /var/www/html  
VOLUME /var/log/apache2  
ADD barista.tar.gz /var/www/html
```

```
FROM ubuntu:latest
LABEL "Author"="Docker"
LABEL "Project"="barista"
ENV DEBIAN_FRONTEND=noninteractive
RUN apt update && apt install git -y
RUN apt install apache2 -y
CMD ["/usr/sbin/apache2ctl", "-D", "FOREGROUND"]
EXPOSE 80
WORKDIR /var/www/html
VOLUME /var/log/apache2
ADD barista.tar.gz /var/www/html
```

18. After run the docker build command to build your project.

```
docker build -t baristaimg .
```

19. If you docker images, you can see your image.

```
ubuntu@ip-172-31-41-113:~/images/barista$ docker images
REPOSITORY      TAG          IMAGE ID      CREATED       SIZE
baristaimg     latest        2041f8b9c385   2 minutes ago  263MB
ubuntu@ip-172-31-41-113:~/images/barista$ |
```

20. Its time to run this image by using run command.

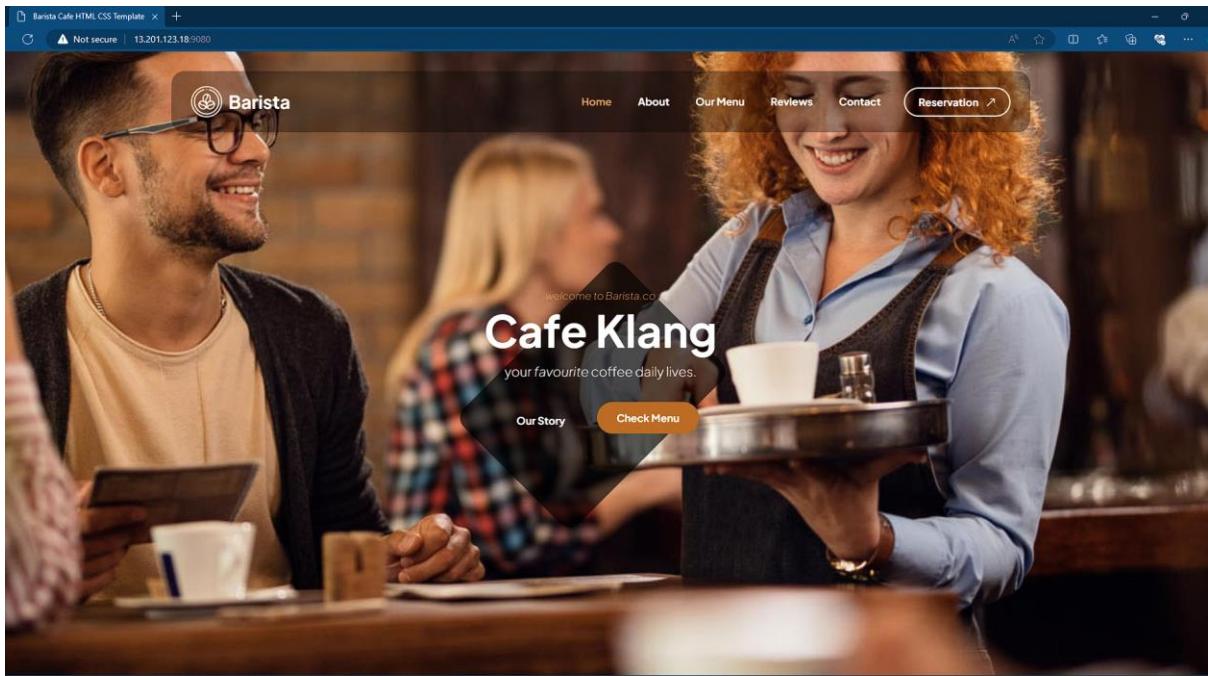
```
docker run -d --name baristawebsite -p 9080:80 baristaimg
```

```

ubuntu@ip-172-31-41-113:~/images/barista$ docker run -d --name baristawebsite -p 9080:80 baristaimg
385781c9aa9a103321a116bea145a1f9c56575acef61b3611b7454efecac3e0
ubuntu@ip-172-31-41-113:~/images/barista$ docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
ubuntu@ip-172-31-41-113:~/images/barista$ docker ps -a
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
385781c9aa9a baristaimg "/usr/sbin/apache2ct..." 15 seconds ago Up 13 seconds 0.0.0.0:9080->80/tcp, :::9080->80/tcp baristawebsite
ubuntu@ip-172-31-41-113:~/images/barista$ |

```

21. Once all it is done now you can see it by using Public IP address of your instance.



22. This is called as containerization. If you know docker concepts, you know docker file. You can also containerize an application. So, we have containerized our application.
23. Now you are going to host this image in the docker hub repository.
24. For that you should have an account in docker hub. If you already then that's good, if not then go and create an account there.
25. In docker hub click on create repository.
26. Now you can create your own repository here.

Welcome to Docker

Download the desktop application

[Download for Windows](#)

Also available for [Mac](#) and [Linux](#)



Create a Repository

Push container images to a repository on Docker Hub.



Docker Hub Basics

Watch the guide on how to create and push your first image into a Docker Hub repository.



Language-Specific Guides

Learn how to containerize language-specific applications using Docker.

27. But for now, I am going to push this image into the repository using commands.
28. First do a docker ps command to see your images.
29. Then run the build command with your username attached to it. After that if you check for your images, you'll see that you have two images of same ID.

```
docker build -t pulkitk2711/baristaimg .
```

```

ubuntu@ip-172-31-41-113:~/images/barista$ docker ps
CONTAINER ID        IMAGE               COMMAND                  CREATED             STATUS              PORTS               NAMES
385781c9aa9a        baristaimg        "/usr/sbin/apache2ct..."   16 minutes ago    Up 16 minutes   0.0.0.0:9080->80/tcp, :::9080->80/tcp   baristawebserver
[1] Building 1.7s (10/10) FINISHED
--> [internal] load build definition from Dockerfile
--> => transferring dockerfile: 345B
--> [internal] load metadata for docker.io/library/ubuntu:latest
--> [internal] load .dockerignore
--> => transferring context: 2B
--> [1/5] FROM docker.io/library/ubuntu:latest@sha256:e9569c25505f33ff72e88b2990887c9dcf230f23259da296eb814fc2b41af999
--> [internal] load build context
--> => transferring context: 388
--> CACHED [2/5] RUN apt update && apt install git -y
--> CACHED [3/5] RUN apt install apache2 -y
--> CACHED [4/5] WORKDIR /var/www/html
--> CACHED [5/5] ADD barista.tar.gz /var/www/html
--> exporting to image
--> exporting layers
--> => writing image sha256:2041f8b9c385e67622572959c84b32e38bbc15e13bb4c61203ce3c2fd96d23d2
--> => naming to docker.io/pulkitk2711/baristaimg
ubuntu@ip-172-31-41-113:~/images/barista$ docker images
REPOSITORY          TAG      IMAGE ID            CREATED             SIZE
baristaimg          latest   2041f8b9c385   22 minutes ago   263MB
pulkitk2711/baristaimg  latest   2041f8b9c385   22 minutes ago   263MB
ubuntu@ip-172-31-41-113:~/images/barista$ 

```

30. Then you need to login into the docker. For that write docker login and then write your username and password. Then write the push command to push this image on docker.

docker login

docker push username/baristaimg

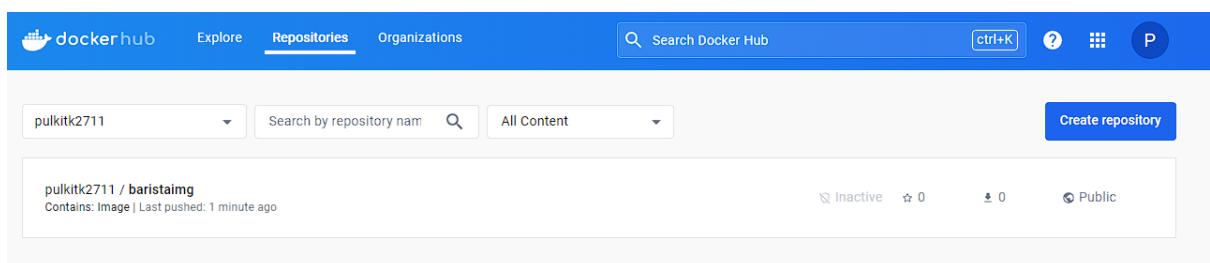
```

ubuntu@ip-172-31-41-113:~/images/barista$ docker login
Log in with your Docker ID or email address to push and pull images from Docker Hub. If you don't have a Docker ID, head over to https://hub.docker.com/ to create one.
You can log in with your password or a Personal Access Token (PAT). Using a limited-scope PAT grants better security and is required for organizations using SSO. Learn more at https://docs.docker.com/go/access-tokens/
Username: pulkitk2711
Password:
WARNING! Your password will be stored unencrypted in /home/ubuntu/.docker/config.json.
Configure a credential helper to remove this warning. See
https://docs.docker.com/engine/reference/commandline/login/#credentials-store

Login Succeeded
ubuntu@ip-172-31-41-113:~/images/barista$ docker push pulkitk2711/baristaimg
Using default tag: latest
The push refers to repository [docker.io/pulkitk2711/baristaimg]
4be2dad14853: Pushed
5f70bf1aa866: Pushed
b345d5a6cff08: Pushed
f103e21de70: Pushed
1a102d1ac2b0: Mounted from library/ubuntu
latest: digest: sha256:4ffef6988d1c07770b3c8abde589e27774f0164ecdd99c32d7df0c6fec50599bed size: 1370
ubuntu@ip-172-31-41-113:~/images/barista$ 

```

31. Now you can see your image in your repository on docker hub. So, this is a public image anyone can use it.



(i) Add a short description for this repository
The short description is used to index your content on Docker Hub and in search engines. It's visible to users in search results.

Update

pulkitk2711 / baristaimg

Description
This repository does not have a description

Last pushed: 9 minutes ago

Docker commands
To push a new tag to this repository:

Public View

`docker push pulkitk2711/baristaimg:tagname`

Tags
This repository contains 1 tag(s).

Tag	OS	Type	Pulled	Pushed
latest		Image	---	9 minutes ago

[See all](#)

Automated Builds
Manually pushing images to Hub? Connect your account to GitHub or BitBucket to automatically build and tag new images whenever your code is updated, so you can focus your time on creating.

Available with Pro, Team and Business subscriptions. [Read more about automated builds](#).

Upgrade

32. Now remove the image locally. As you can see all the images have been removed. I don't have any images right now.

```
ubuntu@ip-172-31-41-113:~$ docker ps -a
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS
 NAMES
385781c9aa9a baristaimg "/usr/sbin/apache2ct..." 26 minutes ago Up 26 minutes 0.0.0.0:9080->80/tcp, :::9080->80/
tcp baristawebiste
ubuntu@ip-172-31-41-113:~$ docker stop 385781c9aa9a
385781c9aa9a
ubuntu@ip-172-31-41-113:~$ docker rm 385781c9aa9a
385781c9aa9a
ubuntu@ip-172-31-41-113:~$ docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
baristaimg latest 2041f8bb9c385 30 minutes ago 263MB
pulkitk2711/baristaimg latest 2041f8bb9c385 30 minutes ago 263MB
ubuntu@ip-172-31-41-113:~$ docker rmi baristaimg pulkitk2711/baristaimg
Untagged: baristaimg:latest
Untagged: pulkitk2711/baristaimg:latest
Untagged: pulkitk2711/baristaimg@sha256:4ff6f068dc1d7174a3c0abde589e27774f0164ecd49c32d7df0c6fec50599bed
Deleted: sha256:2041f8bb9c385e67622572959c84b32e38bbc15e13bb4c61203ce3c2fd96d23d2
ubuntu@ip-172-31-41-113:~$ docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
ubuntu@ip-172-31-41-113:~$ |
```

33. Again, I am going to run docker run command but this time I'll take the public image path.

34. See, it is successful.

```
ubuntu@ip-172-31-41-113:~$ docker run -d --name baristawebiste -p 9080:80 pulkitk2711/baristaimg
Unable to find image 'pulkitk2711/baristaimg:latest' locally
latest: Pulling from pulkitk2711/baristaimg
57c139bbda7e: Already exists
d95801e0d4c0: Already exists
867d255d18d8: Already exists
4f4fb700ef54: Already exists
518141440ff: Already exists
Digest: sha256:4ff6f068dc1d7174a3c0abde589e27774f0164ecd49c32d7df0c6fec50599bed
Status: Downloaded newer image for pulkitk2711/baristaimg:latest
efcb732589932e4bf74655ed3f3d1e1bd7fzb1cede497f003f2108b6b4204c59
ubuntu@ip-172-31-41-113:~$ docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
efcb73258993 pulkitk2711/baristaimg "/usr/sbin/apache2ct..." 12 seconds ago Up 11 seconds 0.0.0.0:9080->80/tcp, :::9080->80/tcp baristawebiste
ubuntu@ip-172-31-41-113:~$ |
```