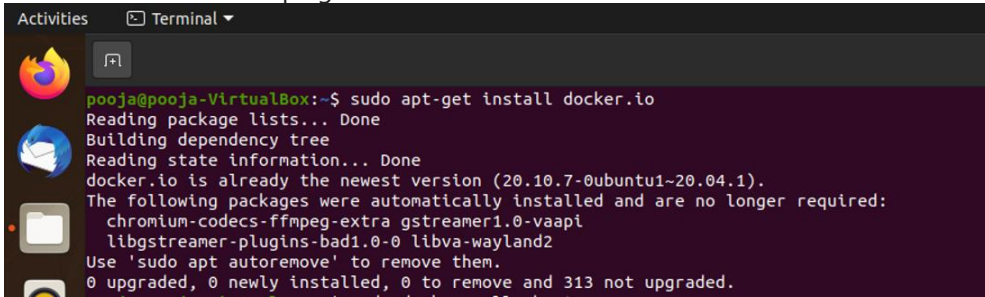
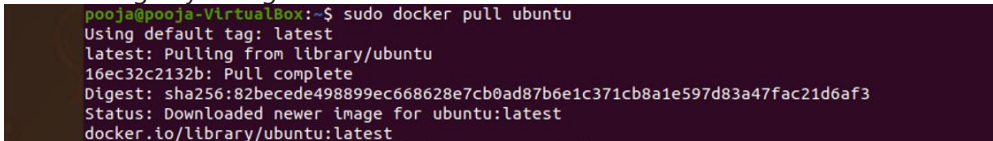


## Department of Information Technology

### Experiment No.3

Semester	T.E. Semester V – Department of Information Technology
Subject	DevOps Lab
Subject Professor In-charge	Prof. Rohit Barve
Assisting Teachers	Prof. Rohit Barve
Laboratory	Ms-Teams

Student Name	Pooja Naik
Roll Number	19101B0011
Grade and Subject Teacher's Signature	

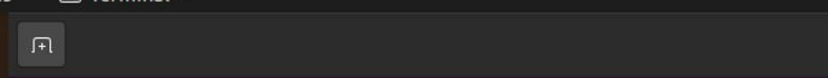
Experiment Number	3
Experiment Title	Docker
Resources / Apparatus Required	Hardware: Computer system Software: Ubuntu virtual Machine
Description	Docker is an open platform for developing, shipping, and running applications. Docker provides the ability to package and run an application in a loosely isolated environment called a container. The isolation and security allow you to run many containers simultaneously on a given host. Containers are lightweight and contain everything needed to run the application, so you do not need to rely on what is currently installed on the host. You can easily share containers while you work, and be sure that everyone you share with gets the same container that works in the same way.
Output	<p>Install docker -- sudo apt-get install docker.io</p>  <pre>pooja@pooja-VirtualBox:~\$ sudo apt-get install docker.io Reading package lists... Done Building dependency tree Reading state information... Done docker.io is already the newest version (20.10.7-0ubuntu1~20.04.1). The following packages were automatically installed and are no longer required:   chromium-codecs-ffmpeg-extra gstreamer1.0-vaapi   libgstreamer-plugins-bad1.0-0 libva-wayland2 Use 'sudo apt autoremove' to remove them. 0 upgraded, 0 newly installed, 0 to remove and 313 not upgraded.</pre> <p>Pull an image by its digest</p>  <pre>pooja@pooja-VirtualBox:~\$ sudo docker pull ubuntu Using default tag: latest latest: Pulling from library/ubuntu 16ec32c2132b: Pull complete Digest: sha256:82becede498899ec668628e7cb0ad87b6e1c371cb8a1e597d83a47fac21d6af3 Status: Downloaded newer image for ubuntu:latest docker.io/library/ubuntu:latest</pre>

To give a name to the docker `--name`

```

pooja@pooja-VirtualBox:~$ sudo docker run -it -d ubuntu
3d49226145a0ee9f5b62efcc1ca0d6902937ab95d203493530f4881c227d1876
pooja@pooja-VirtualBox:~$ sudo docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS   NAMES
3d49226145a0   ubuntu   "bash"    9 seconds ago      Up 7 seconds                zealous_galileo
pooja@pooja-VirtualBox:~$ sudo docker run -it -d --name poojanaik ubuntu
f8eafabb427cd0257c7c3ded96d4cf1a48fb269520c060bd13b134acd503671
pooja@pooja-VirtualBox:~$ sudo docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS   NAMES
f8eafabb427c   ubuntu   "bash"    8 seconds ago      Up 7 seconds                poojanaik
3d49226145a0   ubuntu   "bash"    38 seconds ago     Up 37 seconds              zealous_galileo
pooja@pooja-VirtualBox:~$

```



```
Activities Terminal ▾  
pooja@pooja-VirtualBox:~$ sudo docker exec -it f8eafabb427c bash  
root@f8eafabb427c:/# sudo  
bash: sudo: command not found  
root@f8eafabb427c:/#
```

```

root@3d49226145b7:~# sudo docker exec -it 3d49226145b7 bash
root@3d49226145b7:/# apt-get update
Get:1 http://archive.ubuntu.com/ubuntu focal InRelease [765 kB]
Get:2 http://security.ubuntu.com/ubuntu focal-security InRelease [514 kB]
Get:3 http://archive.ubuntu.com/ubuntu focal-updates InRelease [514 kB]
Get:4 http://archive.ubuntu.com/ubuntu focal-backports InRelease [101 kB]
Get:5 http://security.ubuntu.com/ubuntu focal-security/main amd64 Packages [849 kB]
Get:6 http://archive.ubuntu.com/ubuntu focal/universe amd64 Packages [11.3 MB]
Get:7 http://security.ubuntu.com/ubuntu focal-security/multiverse amd64 Packages [30.6 kB]
Get:8 http://security.ubuntu.com/ubuntu focal-security/universe amd64 Packages [786 kB]
Get:9 http://security.ubuntu.com/ubuntu focal-security/restricted amd64 Packages [432 kB]
Get:10 http://archive.ubuntu.com/ubuntu focal/multiverse amd64 Packages [177 kB]
Get:11 http://archive.ubuntu.com/ubuntu focal/restricted amd64 Packages [33.4 kB]
Get:12 http://archive.ubuntu.com/ubuntu focal/main amd64 Packages [1275 kB]
Get:13 http://archive.ubuntu.com/ubuntu focal-updates/multiverse amd64 Packages [39.0 kB]
Get:14 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 Packages [1427 kB]
Get:15 http://archive.ubuntu.com/ubuntu focal-updates/universe amd64 Packages [1854 kB]
Get:16 http://archive.ubuntu.com/ubuntu focal-updates/restricted amd64 Packages [470 kB]
Get:17 http://archive.ubuntu.com/ubuntu focal-backports/main amd64 Packages [2606 B]
Get:18 http://archive.ubuntu.com/ubuntu focal-backports/universe amd64 Packages [5319 B]
Fetched 187 MB in 35s (520 kB/s)
Reading package lists... Done
root@3d49226145b7:/# apt install apache2
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils ca-certificates file krb5-locales
  libapp1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap
  libasn1-8-heimdal libbrotli1 libcurl4 libdbus-1-3 libedit2 libgdbm-compat4 libgdm3
  libgnssapi-krb5-2 libgnssapi3-heimdal libhcrypto4-heimdal
  libheimdall8-heimdal libidn12-heimdal libidn2-0 libidn3-2 libidn3-3 libidn3-4
  libidn3-5 libidn3-6 libidn3-7 libidn3-8 libidn3-9 libidn3-10 libidn3-11 libidn3-12
  libidn3-13 libidn3-14 libidn3-15 libidn3-16 libidn3-17 libidn3-18 libidn3-19
  libidn3-20 libidn3-21 libidn3-22 libidn3-23 libidn3-24 libidn3-25 libidn3-26 libidn3-27
  libidn3-28 libidn3-29 libidn3-30 libidn3-31 libidn3-32 libidn3-33 libidn3-34
  libidn3-35 libidn3-36 libidn3-37 libidn3-38 libidn3-39 libidn3-40 libidn3-41
  libidn3-42 libidn3-43 libidn3-44 libidn3-45 libidn3-46 libidn3-47 libidn3-48
  libidn3-49 libidn3-50 libidn3-51 libidn3-52 libidn3-53 libidn3-54 libidn3-55
  libidn3-56 libidn3-57 libidn3-58 libidn3-59 libidn3-60 libidn3-61 libidn3-62
  libidn3-63 libidn3-64 libidn3-65 libidn3-66 libidn3-67 libidn3-68 libidn3-69
  libidn3-70 libidn3-71 libidn3-72 libidn3-73 libidn3-74 libidn3-75 libidn3-76
  libidn3-77 libidn3-78 libidn3-79 libidn3-80 libidn3-81 libidn3-82 libidn3-83
  libidn3-84 libidn3-85 libidn3-86 libidn3-87 libidn3-88 libidn3-89 libidn3-90
  libidn3-91 libidn3-92 libidn3-93 libidn3-94 libidn3-95 libidn3-96 libidn3-97
  libidn3-98 libidn3-99 libidn3-100 libidn3-101 libidn3-102 libidn3-103
  libidn3-104 libidn3-105 libidn3-106 libidn3-107 libidn3-108 libidn3-109
  libidn3-110 libidn3-111 libidn3-112 libidn3-113 libidn3-114 libidn3-115
  libidn3-116 libidn3-117 libidn3-118 libidn3-119 libidn3-120 libidn3-121
  libidn3-122 libidn3-123 libidn3-124 libidn3-125 libidn3-126 libidn3-127
  libidn3-128 libidn3-129 libidn3-130 libidn3-131 libidn3-132 libidn3-133
  libidn3-134 libidn3-135 libidn3-136 libidn3-137 libidn3-138 libidn3-139
  libidn3-140 libidn3-141 libidn3-142 libidn3-143 libidn3-144 libidn3-145
  libidn3-146 libidn3-147 libidn3-148 libidn3-149 libidn3-150 libidn3-151
  libidn3-152 libidn3-153 libidn3-154 libidn3-155 libidn3-156 libidn3-157
  libidn3-158 libidn3-159 libidn3-160 libidn3-161 libidn3-162 libidn3-163
  libidn3-164 libidn3-165 libidn3-166 libidn3-167 libidn3-168 libidn3-169
  libidn3-170 libidn3-171 libidn3-172 libidn3-173 libidn3-174 libidn3-175
  libidn3-176 libidn3-177 libidn3-178 libidn3-179 libidn3-180 libidn3-181
  libidn3-182 libidn3-183 libidn3-184 libidn3-185 libidn3-186 libidn3-187
  libidn3-188 libidn3-189 libidn3-190 libidn3-191 libidn3-192 libidn3-193
  libidn3-194 libidn3-195 libidn3-196 libidn3-197 libidn3-198 libidn3-199
  libidn3-200 libidn3-201 libidn3-202 libidn3-203 libidn3-204 libidn3-205
  libidn3-206 libidn3-207 libidn3-208 libidn3-209 libidn3-210 libidn3-211
  libidn3-212 libidn3-213 libidn3-214 libidn3-215 libidn3-216 libidn3-217
  libidn3-218 libidn3-219 libidn3-220 libidn3-221 libidn3-222 libidn3-223
  libidn3-224 libidn3-225 libidn3-226 libidn3-227 libidn3-228 libidn3-229
  libidn3-230 libidn3-231 libidn3-232 libidn3-233 libidn3-234 libidn3-235
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  libidn3-242 libidn3-243 libidn3-244 libidn3-245 libidn3-246 libidn3-247
  libidn3-248 libidn3-249 libidn3-250 libidn3-251 libidn3-252 libidn3-253
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  libidn3-260 libidn3-261 libidn3-262 libidn3-263 libidn3-264 libidn3-265
  libidn3-266 libidn3-267 libidn3-268 libidn3-269 libidn3-270 libidn3-271
  libidn3-272 libidn3-273 libidn3-274 libidn3-275 libidn3-276 libidn3-277
  libidn3-278 libidn3-279 libidn3-280 libidn3-281 libidn3-282 libidn3-283
  libidn3-284 libidn3-285 libidn3-286 libidn3-287 libidn3-288 libidn3-289
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  libidn3-296 libidn3-297 libidn3-298 libidn3-299 libidn3-300 libidn3-301
  libidn3-302 libidn3-303 libidn3-304 libidn3-305 libidn3-306 libidn3-307
  libidn3-308 libidn3-309 libidn3-310 libidn3-311 libidn3-312 libidn3-313
  libidn3-314 libidn3-315 libidn3-316 libidn3-317 libidn3-318 libidn3-319
  libidn3-320 libidn3-321 libidn3-322 libidn3-323 libidn3-324 libidn3-325
  libidn3-326 libidn3-327 libidn3-328 libidn3-329 libidn3-330 libidn3-331
  libidn3-332 libidn3-333 libidn3-334 libidn3-335 libidn3-336 libidn3-337
  libidn3-338 libidn3-339 libidn3-340 libidn3-341 libidn3-342 libidn3-343
  libidn3-344 libidn3-345 libidn3-346 libidn3-347 libidn3-348 libidn3-349
  libidn3-350 libidn3-351 libidn3-352 libidn3-353 libidn3-354 libidn3-355
  libidn3-356 libidn3-357 libidn3-358 libidn3-359 libidn3-360 libidn3-361
  libidn3-362 libidn3-363 libidn3-364 libidn3-365 libidn3-366 libidn3-367
  libidn3-368 libidn3-369 libidn3-370 libidn3-371 libidn3-372 libidn3-373
  libidn3-374 libidn3-375 libidn3-376 libidn3-377 libidn3-378 libidn3-379
  libidn3-380 libidn3-381 libidn3-382 libidn3-383 libidn3-384 libidn3-385
  libidn3-386 libidn3-387 libidn3-388 libidn3-389 libidn3-390 libidn3-391
  libidn3-392 libidn3-393 libidn3-394 libidn3-395 libidn3-396 libidn3-397
  libidn3-398 libidn3-399 libidn3-400 libidn3-401 libidn3-402 libidn3-403
  libidn3-404 libidn3-405 libidn3-406 libidn3-407 libidn3-408 libidn3-409
  libidn3-410 libidn3-411 libidn3-412 libidn3-413 libidn3-414 libidn3-415
  libidn3-416 libidn3-417 libidn3-418 libidn3-419 libidn3-4
```

# Department of Information Technology

## Experiment No.3

### Install apache2

```

root@beafabb427c:/# apt-get install apache2
Reading package lists... Done
Building dependency tree
Reading state information... Done
apache2 is already the newest version (2.4.41-4ubuntu3.4).
0 upgraded, 0 newly installed, 0 to remove and 3 not upgraded.
root@beafabb427c:/# ls
bin dev home lib32 libx32 net proc run sbin var
root@beafabb427c:/# cd var
bash: cd: too many arguments
root@beafabb427c:/# cd var
root@beafabb427c:/var# ls
backups cache lock log mail opt run spool tmp www
root@beafabb427c:/var# cd www
root@beafabb427c:/var/www# ls
html
root@beafabb427c:/var/www# cd html
root@beafabb427c:/var/www/html# apt install git
Reading package lists... Done
Building dependency tree
The following additional packages will be installed:
git-man less libbsd0 libcbor0.6 libcurl3-gnutls libedit2 liberror-perl
libfido2-1 libx11-6 libx11-data libxau6 libxcb1 libxdmcp6 libxext6
libxmu1 openssl-client patch xauth
Suggested packages:
gettext-base git-daemon-run | git-daemon-sysvinit git-doc git-el
git-email git-gui gitk gitweb git-cvs git-mediawiki git-svn keychain
libpam-ssh monkeysphere ssh-askpass ed diffutils-doc
The following NEW packages will be installed:
git git-man less libbsd0 libcbor0.6 libcurl3-gnutls libedit2
liberror-perl libfido2-1 libx11-6 libx11-data libxau6 libxcb1 libxdmcp6
libxext6 libxmu1 openssl-client patch xauth
0 upgraded, 19 newly installed, 0 to remove and 3 not upgraded.
Need to get 7615 kB of archives.
After this operation, 48.1 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 less amd64 551-1ubuntu0.1 [123 kB]
Get:2 http://archive.ubuntu.com/ubuntu focal/main amd64 libbsd0 amd64 0.10.0-1 [45.4 kB]
Get:3 http://archive.ubuntu.com/ubuntu focal/main amd64 libcbor0.6 amd64 0.6.0-0ubuntu1 [21.1 kB]
Get:4 http://archive.ubuntu.com/ubuntu focal/main amd64 libedit2 amd64 3.1-20191231-1 [87.0 kB]
Get:5 http://archive.ubuntu.com/ubuntu focal/main amd64 libfido2-1 amd64 1.3.1-1ubuntu1 [47.9 kB]
Get:6 http://archive.ubuntu.com/ubuntu focal/main amd64 libxau6 amd64 1:1.0.9-0ubuntu1 [7488 B]
Get:7 http://archive.ubuntu.com/ubuntu focal/main amd64 libxdmcp6 amd64 1:1.1.3-0ubuntu1 [10.6 kB]
Get:8 http://archive.ubuntu.com/ubuntu focal/main amd64 libxcb1 amd64 1.14-2 [44.7 kB]
Get:9 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 libx11-data all 2:1.6.9-2ubuntu1.2 [113 kB]
Get:10 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 libx11-6 amd64 2:1.6.9-2ubuntu1.2 [175 kB]
Get:11 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 libxext6 amd64 2:1.3.4-0ubuntu1 [29.1 kB]
Get:12 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 libxmu1 amd64 2:1.1.3-0ubuntu1 [9728 B]
Get:13 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 openssl-client amd64 1:0.21-4ubuntu0.2 [671 kB]
Get:14 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 patch amd64 2.7.6-6ubuntu0.1 [35.0 kB]

```

### Change directory to html

```

Activities Terminal
root@beafabb427c:/var/www/html# apt install git
invoke-rc.d: could not determine current runlevel
invoke-rc.d: policy-rc.d denied execution of start.
Processing triggers for libc-bin (2.31-0ubuntu9.2) ...
Processing triggers for ca-certificates (20210119-20.04.1) ...
Updating certificates in /etc/ssl/certs...
0 added, 0 removed; done.
Running hooks in /etc/ca-certificates/update.d...
done.
root@3d49226145a0:/# cd var
root@3d49226145a0:/var# ls
backups cache lib local lock log mail opt run spool tmp www
root@3d49226145a0:/var# cd www
root@3d49226145a0:/var/www# ls
html
root@3d49226145a0:/var/www# cd html
root@3d49226145a0:/var/www/html# apt install git

```

### Install git

```

root@3d49226145a0:/var/www/html# apt install git
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
git-man less libbsd0 libcbor0.6 libcurl3-gnutls libedit2 liberror-perl
libfido2-1 libx11-6 libx11-data libxau6 libxcb1 libxdmcp6 libxext6
libxmu1 openssl-client patch xauth
Suggested packages:
gettext-base git-daemon-run | git-daemon-sysvinit git-doc git-el
git-email git-gui gitk gitweb git-cvs git-mediawiki git-svn keychain
libpam-ssh monkeysphere ssh-askpass ed diffutils-doc
The following NEW packages will be installed:
git git-man less libbsd0 libcbor0.6 libcurl3-gnutls libedit2
liberror-perl libfido2-1 libx11-6 libx11-data libxau6 libxcb1 libxdmcp6
libxext6 libxmu1 openssl-client patch xauth
0 upgraded, 19 newly installed, 0 to remove and 3 not upgraded.
Need to get 7615 kB of archives.
After this operation, 48.1 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 less amd64 551-1ubuntu0.1 [123 kB]
Get:2 http://archive.ubuntu.com/ubuntu focal/main amd64 libbsd0 amd64 0.10.0-1 [45.4 kB]
Get:3 http://archive.ubuntu.com/ubuntu focal/main amd64 libcbor0.6 amd64 0.6.0-0ubuntu1 [21.1 kB]
Get:4 http://archive.ubuntu.com/ubuntu focal/main amd64 libedit2 amd64 3.1-20191231-1 [87.0 kB]
Get:5 http://archive.ubuntu.com/ubuntu focal/main amd64 libfido2-1 amd64 1.3.1-1ubuntu1 [47.9 kB]
Get:6 http://archive.ubuntu.com/ubuntu focal/main amd64 libxau6 amd64 1:1.0.9-0ubuntu1 [7488 B]
Get:7 http://archive.ubuntu.com/ubuntu focal/main amd64 libxdmcp6 amd64 1:1.1.3-0ubuntu1 [10.6 kB]
Get:8 http://archive.ubuntu.com/ubuntu focal/main amd64 libxcb1 amd64 1.14-2 [44.7 kB]
Get:9 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 libx11-data all 2:1.6.9-2ubuntu1.2 [113 kB]
Get:10 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 libx11-6 amd64 2:1.6.9-2ubuntu1.2 [175 kB]
Get:11 http://archive.ubuntu.com/ubuntu focal/main amd64 libxext6 amd64 2:1.3.4-0ubuntu1 [29.1 kB]
Get:12 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 libxmu1 amd64 2:1.1.3-0ubuntu1 [9728 B]
Get:13 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 openssl-client amd64 1:0.21-4ubuntu0.2 [671 kB]
Get:14 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 patch amd64 2.7.6-6ubuntu0.1 [35.0 kB]

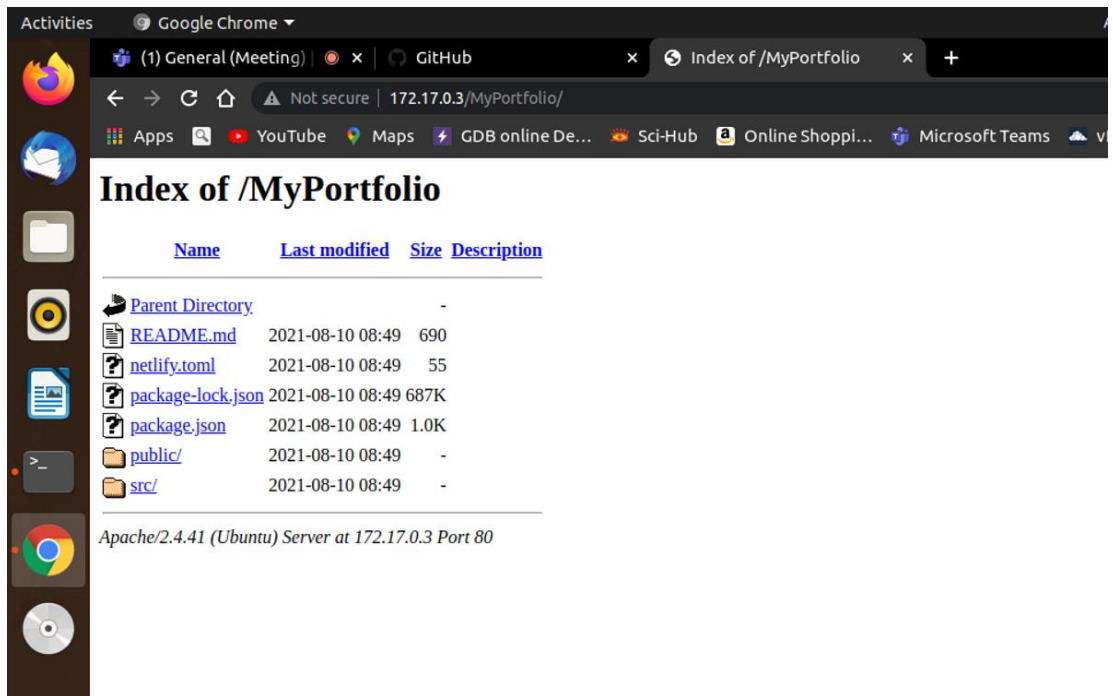
```

## Department of Information Technology

### Experiment No.3

Clone a repository from GitHub and start apache2 server:

```
root@f8eafabb427c:/var/www/html# git clone https://github.com/samsaw777/MyPortfolio.git
Cloning into 'MyPortfolio'...
remote: Enumerating objects: 339, done.
remote: Counting objects: 100% (339/339), done.
remote: Compressing objects: 100% (223/223), done.
remote: Total 339 (delta 202), reused 248 (delta 114), pack-reused 0
Receiving objects: 100% (339/339), 4.08 MiB | 6.50 MiB/s, done.
Resolving deltas: 100% (202/202), done.
root@f8eafabb427c:/var/www/html# service apache2 start
 * Starting Apache httpd web server apache2
AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 172.17.0.3 Set the 'ServerName'
directive globally to suppress this message
 *
root@f8eafabb427c:/var/www/html# ls
index.html
root@f8eafabb427c:/var/www/html#
```



To exit a container – exit

Conclusion

Successfully learnt and executed command for docker.