

Mohamed Monir Mohamed Dobe

Task (4, 5)

1-Install Docker

```
root@DESKTOP-1IPFIN4:~# sudo docker container 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/

root@DESKTOP-1IPFIN4:~#
```

2-create docker image for nodejs application

```

root@DESKTOP-1IIPF1N4:~# mkdir nod-app
root@DESKTOP-1IIPF1N4:~# cd
.cache/ .local/ ITI/ Zagazig/ nod-app/ snap/
root@DESKTOP-1IIPF1N4:~# cd nod-app
root@DESKTOP-1IIPF1N4:~/nod-app# npm init -y
Command 'npm' not found, but can be installed with:
apt install npm
root@DESKTOP-1IIPF1N4:~/nod-app# apt install npm
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  adwaita-icon-theme at-spi2-core build-essential bzip2 cpp cpp-11 dconf-gsettings-backend dconf-service dpkg-dev
  fakeroot fontconfig g++ g++-11 gcc gcc-11 gcc-11-base gsettings-desktop-schemas gtk-update-icon-cache gyp
  hicolor-icon-theme humanity-icon-theme javascript-common libalgorithm-diff-perl libalgorithm-diff-xs-perl
  libalgorithm-merge-perl libasan6 libatk-bridge2.0-0 libatk1.0-0 libatk1.0-data libatomic1 libatspi2-0-0
  libauthen-sasl-perl libavahi-client3 libavahi-common-data libavahi-common3 libc-ares2 libc-dev-bin libc-devtools
  libc6-dev libc-bin libc-l10n libc-locale libc-rc1 libc-rc2 libc-rc3 libc-rc4 libc-rc5 libc-rc6 libc-rc7 libc-rc8
  libc-rc9 libc-rc10 libc-rc11 libc-rc12 libc-rc13 libc-rc14 libc-rc15 libc-rc16 libc-rc17 libc-rc18 libc-rc19
  libc-rc20 libc-rc21 libc-rc22 libc-rc23 libc-rc24 libc-rc25 libc-rc26 libc-rc27 libc-rc28 libc-rc29 libc-rc30
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```

```
root@DESKTOP-1IPFIN4:~/nod-app# nano app.js
root@DESKTOP-1IPFIN4:~/nod-app# node app.js
App listening at http://localhost:3000
```

```
root@DESKTOP-1IPFIN4: ~/nc X + v
GNU nano 6.2 app.js
const express = require('express');
const app = express();
const port = 3000;

app.get('/', (req, res) => {
  res.send('Welcome to the Node.js PetClinic!');
});

app.listen(port, () => {
  console.log(`App listening at http://localhost:${port}`);
});
```



install PHP 7.3 and PHP 7.3 FPM

```
root@DESKTOP-1IPFIN4:~# php -v
PHP 7.3.33-19+ubuntu22.04.1+deb.sury.org+1 (cli) (built: Jun  6 2024 16:45:29) ( NTS )
Copyright (c) 1997-2018 The PHP Group
Zend Engine v3.3.33, Copyright (c) 1998-2018 Zend Technologies
    with Zend OPcache v7.3.33-19+ubuntu22.04.1+deb.sury.org+1, Copyright (c) 1999-2018, by Zend Technologies
root@DESKTOP-1IPFIN4:~# php7.3 -v
PHP 7.3.33-19+ubuntu22.04.1+deb.sury.org+1 (cli) (built: Jun  6 2024 16:45:29) ( NTS )
Copyright (c) 1997-2018 The PHP Group
Zend Engine v3.3.33, Copyright (c) 1998-2018 Zend Technologies
    with Zend OPcache v7.3.33-19+ubuntu22.04.1+deb.sury.org+1, Copyright (c) 1999-2018, by Zend Technologies
```

install common php7.3 modules

```
root@DESKTOP-1IPFIN4:~# sudo apt install php7.3 php7.3-cli php7.3-fpm php7.3-mysql php7.3-curl php7.3-gd php7.3-xml php7.3-mbstring
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
php7.3 is already the newest version (7.3.33-19+ubuntu22.04.1+deb.sury.org+1).
php7.3-cli is already the newest version (7.3.33-19+ubuntu22.04.1+deb.sury.org+1).
php7.3-cli set to manually installed.
php7.3-fpm is already the newest version (7.3.33-19+ubuntu22.04.1+deb.sury.org+1).
The following NEW packages will be installed:
  php7.3-curl php7.3-gd php7.3-mbstring php7.3-mysql php7.3-xml
```

```
Processing triggers for php7.3-fpm (7.3.33-19+ubuntu22.04.1+deb.sury.org+1)
root@DESKTOP-1IPFIN4:~# php -m
[PHP Modules]
calendar
Core
ctype
curl
date
dom
exif
fileinfo
filter
ftp
gd
gettext
hash
iconv
json
libxml
mbstring
mysqli
mysqlnd
openssl
pcntl
pcre
PDO
pdo_mysql
Phar
posix
readline
Reflection
```

create virtual host on nginx pointing to /var/www/html

create info.php file inside /var/www/html

google phpinfo.php script and copy paste it inside info.php

give the server inside nginx name of mobadra.com

make the nginx listen to php-fpm on port 9000

add static folder under the root /var/www/mobadra.com/html and upload images
on this folder

create static location inside server nginx mobadra.com/static/image1.png

make sure the images are gzipped <-- from headers you will see gzip in the Content-
Encoding: gzip

cache server

create docker image for php app

```

root@DESKTOP-1IPFIN4: ~# sudo mkdir -p /var/www/mobadra.com/html
root@DESKTOP-1IPFIN4: ~# sudo chown -R $USER:$USER /var/www/mobadra.com/html
root@DESKTOP-1IPFIN4: ~# "C
root@DESKTOP-1IPFIN4: ~# sudo nano /etc/nginx/sites-available/mobadra.com
root@DESKTOP-1IPFIN4: ~# sudo ln -s /etc/nginx/sites-available/mobadra.com /etc/nginx/sites-enabled/
root@DESKTOP-1IPFIN4: ~# sudo nginx -t
nginx: the configuration file /etc/nginx/nginx.conf syntax is ok
nginx: configuration file /etc/nginx/nginx.conf test is successful
root@DESKTOP-1IPFIN4: ~# sudo systemctl restart nginx
root@DESKTOP-1IPFIN4: ~# echo "<?php phpinfo(); ?>" > /var/www/mobadra.com/html/info.php
root@DESKTOP-1IPFIN4: ~# sudo mkdir -p /var/www/mobadra.com/static
root@DESKTOP-1IPFIN4: ~# scp /var/www/mobadra.com/static
usage: scp [-346ABCOpqRrsTv] [-c cipher] [-D sftp_server_path] [-F ssh_config]
          [-i identity_file] [-J destination] [-l limit]
          [-o ssh_option] [-P port] [-S program] source ... target
root@DESKTOP-1IPFIN4: ~# nano /var/www/mobadra.com/static
root@DESKTOP-1IPFIN4: ~# nano /var/www/mobadra.com/static
root@DESKTOP-1IPFIN4: ~# sudo systemctl reload nginx
root@DESKTOP-1IPFIN4: ~# sudo nano /etc/nginx/sites-available/mobadra.com
root@DESKTOP-1IPFIN4: ~# sudo systemctl reload nginx
root@DESKTOP-1IPFIN4: ~# cd /path/to/my/php/project
-bash: cd: /path/to/my/php/project: No such file or directory
root@DESKTOP-1IPFIN4: ~# cd /path/to/your/php/project
-bash: cd: /path/to/your/php/project: No such file or directory
root@DESKTOP-1IPFIN4: ~# sudo nano /etc/nginx/sites-available/mobadra.com
root@DESKTOP-1IPFIN4: ~# nano /var/www/mobadra.com/static
root@DESKTOP-1IPFIN4: ~# nano phpdocker
root@DESKTOP-1IPFIN4: ~# nano phpdocker

```

```

root@DESKTOP-1IPFIN4: ~  ×  +  ▾
GNU nano 6.2
location /static {
    alias /var/www/mobadra.com/static;
    gzip on;
    gzip_types image/png;
}

```

```
root@DESKTOP-1IPFIN4: ~  
GNU nano 6.2 /etc/nginx/sites-available/mobadra.com  
server {  
    listen 80;  
    server_name mobadra.com www.mobadra.com;  
  
    root /var/www/mobadra.com/html;  
    index index.php index.html index.htm;  
  
    location / {  
        try_files $uri $uri/ =404;  
    }  
  
    location ~ \.php$ {  
        include snippets/fastcgi-php.conf;  
        fastcgi_pass 127.0.0.1:9000;  
        fastcgi_param SCRIPT_FILENAME $document_root$fastcgi_script_name;  
        include fastcgi_params;  
    }  
  
    location ~ /\.ht {  
        deny all;  
    }  
  
    location /static {  
        alias /var/www/mobadra.com/static;  
        gzip on;  
        gzip_types image/png;  
        expires max;  
        add_header Cache-Control "public";  
    }  
}
```

```
root@DESKTOP-1IPFIN4: ~  
GNU nano 6.2 /var/www/html/info.php  
<?php  
// Show all information, defaults to INFO_ALL  
phpinfo();  
  
// Show just the module information.  
// phpinfo(8) yields identical results.  
phpinfo(INFO_MODULES);  
?>
```



Welcome to nginx!

If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to nginx.org.
Commercial support is available at nginx.com.

Thank you for using nginx.



Welcome to nginx!

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Thank you for using nginx.