Step 1: Obtaining the demo application

```
natenguio@natenguio-virtualbox:~/Downloads/my-app$ cd ~
curl -L https://github.com/do-community/travellist-laravel-demo/archiv
e/tutorial-1.0.1.zip -o travellist.zip
  % Total    % Received % Xferd  Average Speed   Time    Time     Time
  Current
                                 Dload  Upload   Total   Spent    Left
  Speed
  0     0    0     0    0     0      0      0 --:--:-- --:--:-- --:--:
  0     0    0     0    0     0      0      0 --:--:-- --:--:-- --:--:
  0     0    0     0    0     0      0      0 --:--:-- --:--:-- --:--:
--        0
100  9632    0  9632    0     0   6096      0 --:--:-- 0:00:01 --:--:
100 82651    0 82651    0     0  40775      0 --:--:-- 0:00:02 --:--:
100 82651    0 82651    0     0  40773      0 --:--:-- 0:00:02 --:--:
```

Unzip the command to unpack the application code.

```
natenguio@natenguio-virtualbox:~$ sudo apt update
sudo apt install unzip
[sudo] password for natenguio:
Hit:1 https://download.docker.com/linux/ubuntu noble InRelease
Hit:2 http://archive.ubuntu.com/ubuntu noble InRelease
Hit:3 http://security.ubuntu.com/ubuntu noble-security InRelease
Hit:4 http://archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:5 http://archive.ubuntu.com/ubuntu noble-backports InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
190 packages can be upgraded. Run 'apt list --upgradable' to see them.
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
unzip is already the newest version (6.0-28ubuntu4.1).
unzip set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 190 not upgraded.
```

Unzip the contents of the applications and rename

```
natenguio@natenguio-virtualbox:~$ unzip travellist.zip
mv travellist-laravel-demo-tutorial-1.0.1 travellist-demo
Archive:  travellist.zip
a096c5838da7d0b89a85ce37078d8e66030957b3
   creating: travellist-laravel-demo-tutorial-1.0.1/
  inflating: travellist-laravel-demo-tutorial-1.0.1/.editorconfig
  inflating: travellist-laravel-demo-tutorial-1.0.1/.env.example
  inflating: travellist-laravel-demo-tutorial-1.0.1/.gitattributes
  inflating: travellist-laravel-demo-tutorial-1.0.1/.gitignore
  inflating: travellist-laravel-demo-tutorial-1.0.1/.styleci.yml
  inflating: travellist-laravel-demo-tutorial-1.0.1/README.md
   creating: travellist-laravel-demo-tutorial-1.0.1/app/
   creating: travellist-laravel-demo-tutorial-1.0.1/app/Console/
  inflating: travellist-laravel-demo-tutorial-1.0.1/app/Console/Kernel
.php
   creating: travellist-laravel-demo-tutorial-1.0.1/app/Exceptions/
  inflating: travellist-laravel-demo-tutorial-1.0.1/app/Exceptions/Han
dler.php
```

Navigate to the directory

```
natenguio@natenguio-virtualbox:~$ cd travellist-demo
natenguio@natenguio-virtualbox:~/travellist-demo$
natenguio@natenguio-virtualbox:~/travellist-demo$
```

Step 2: Setting up the application env file

Create the env file

```
natenguio@natenguio-virtualbox:~/travellist-demo$ cp .env.example .env
natenguio@natenguio-virtualbox:~/travellist-demo$
```

Configure the nano file

```
natengulo@natengulo-virtualbox: ~/Desktop ×
  GNU nano 7.2                                    .env *
APP_NAME=Travellist
APP_ENV=dev
APP_KEY=
APP_DEBUG=true
APP_URL=http://localhost:8000

LOG_CHANNEL=stack

DB_CONNECTION=mysql
DB_HOST=db
DB_PORT=3306
DB_DATABASE=travellist
DB_USERNAME=travellist_user
DB_PASSWORD=password
```

Make sure to configure them with the correct db username and password, as well as its ports

```
  GNU nano 7.2                                    .env *
APP_NAME=Travellist
APP_ENV=dev
APP_KEY=
APP_DEBUG=true
APP_URL=http://localhost:8000

LOG_CHANNEL=stack

DB_CONNECTION=mysql
DB_HOST=127.0.0.1
DB_PORT=3306
DB_DATABASE=travellist
DB_USERNAME=nat
DB_PASSWORD=12345

BROADCAST_DRIVER=log
CACHE_DRIVER=file
QUEUE_CONNECTION=sync
SESSION_DRIVER=cookie
SESSION_LIFETIME=120
```
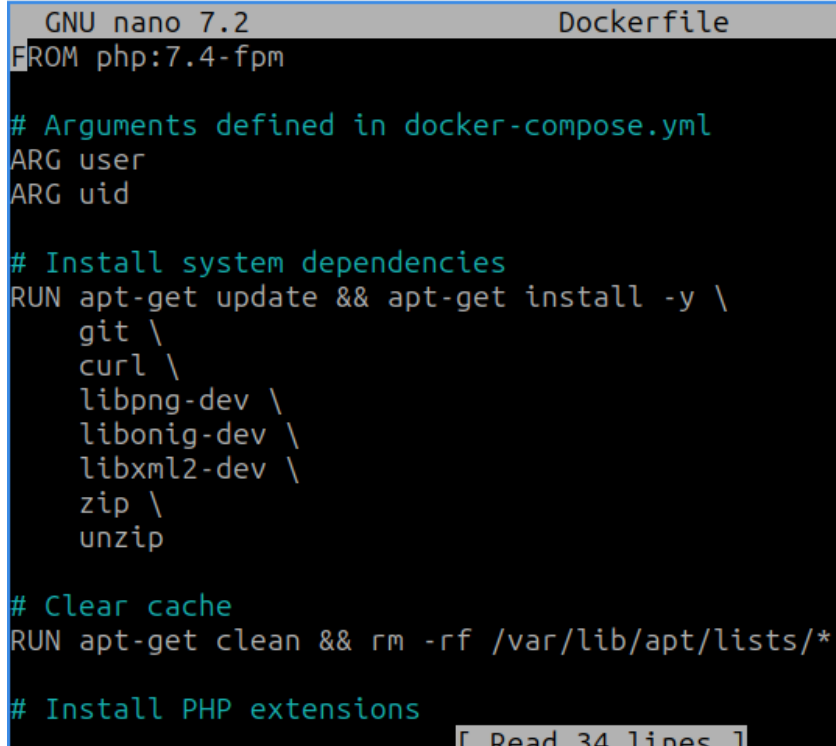
Step 3: setting up the application docker file.

Create the nano dockerfile

```
natenguio@natenguio-virtualbox:~/travellist-demo$ nano Dockerfile
natenguio@natenguio-virtualbox:~/travellist-demo$
```

Configure the nano file

```
  GNU nano 7.2                        Dockerfile
FROM php:7.4-fpm

# Arguments defined in docker-compose.yml
ARG user
ARG uid

# Install system dependencies
RUN apt-get update && apt-get install -y \
    git \
    curl \
    libpng-dev \
    libonig-dev \
    libxml2-dev \
    zip \
    unzip

# Clear cache
RUN apt-get clean && rm -rf /var/lib/apt/lists/*

# Install PHP extensions
                                [ Read 34 lines ]
```

Step 4: Set up nginx configuration and database dump files

Create docker-compose/nginx folder

```
natenguio@natenguio-virtualbox:~/travellist-demo$ mkdir -p docker-comp
ose/nginx
natenguio@natenguio-virtualbox:~/travellist-demo$
```

Configure the nano file

```
  GNU nano 7.2          docker-compose/nginx/travellist.conf *

server {
    listen 80;
    index index.php index.html;
    error_log  /var/log/nginx/error.log;
    access_log /var/log/nginx/access.log;
    root /var/www/public;
    location ~ \.php$ {
        try_files $uri =404;
        fastcgi_split_path_info ^(.+\.php)(/.+)$;
        fastcgi_pass app:9000;
        fastcgi_index index.php;
        include fastcgi_params;
        fastcgi_param SCRIPT_FILENAME $document_root$fastcgi_script_n>
        fastcgi_param PATH_INFO $fastcgi_path_info;
    }
    location / {
        try_files $uri $uri/ /index.php?$query_string;
        gzip_static on;
    }
}

^G Help       ^O Write Out  ^W Where Is   ^K Cut        ^T Execute
^X Exit       ^R Read File  ^\ Replace    ^U Paste      ^J Justify
```

Create a new folder for MySQL

```
natenguio@natenguio-virtualbox:~/travellist-demo$ mkdir docker-compose
/mysql
natenguio@natenguio-virtualbox:~/travellist-demo$
```

Configure the nano file

```
natenguio@natenguio-virtualbox: ~/travellist-demo  ×

  GNU nano 7.2          docker-compose/mysql/init_db.sql *
DROP TABLE IF EXISTS `places`;

CREATE TABLE `places` (
  `id` bigint(20) unsigned NOT NULL AUTO_INCREMENT,
  `name` varchar(255) COLLATE utf8mb4_unicode_ci NOT NULL,
  `visited` tinyint(1) NOT NULL DEFAULT '0',
  PRIMARY KEY (`id`)
) ENGINE=InnoDB AUTO_INCREMENT=12 DEFAULT CHARSET=utf8mb4 COLLATE=utf>

INSERT INTO `places` (name, visited) VALUES ('Berlin',0),('Budapest',>
```

Step 5: Create a multi-container environment with docker compose

Create docker-compose.yml

```
natenguio@natenguio-virtualbox:~/travellist-demo$ nano docker-compose.
yml
natenguio@natenguio-virtualbox:~/travellist-demo$
```

Configure nano file

```
natenguio@natenguio-virtualbox: ~/travellist-demo  ×

  GNU nano 7.2                    docker-compose.yml *
version: "3.7"
services:


networks:
  travellist:
    driver: bridge
```

Step 6: Run the application with docker compose

```
natenguio@natenguio-virtualbox:~/travellist-demo$ sudo docker-compose
build app
Building app
[+] Building 132.7s (14/14) FINISHED                    docker:default
 => [internal] load build definition from Dockerfile          0.2s
 => => transferring dockerfile: 776B                          0.0s
 => [internal] load metadata for docker.io/library/composer:lat  3.3s
 => [internal] load metadata for docker.io/library/php:7.4-fpm   3.5s
 => [internal] load .dockerignore                             0.2s
 => => transferring context: 2B                               0.0s
 => [stage-0 1/8] FROM docker.io/library/php:7.4-fpm@sha256:3a   16.3s
 => => resolve docker.io/library/php:7.4-fpm@sha256:3ac7c8c74b2  0.1s
 => => sha256:3ac7c8c74b2b047c7cb273469d74fc0d5 1.86kB / 1.86kB  0.0s
 => => sha256:7c6a2cba718f37c4b3ca3486476c7d3dc 2.41kB / 2.41kB  0.0s
 => => sha256:38f2b691dcb8c6d4630caa2999173e3 11.38kB / 11.38kB  0.0s
 => => sha256:a603fa5e3b4127f210503aaa6189abf 31.41MB / 31.41MB  1.9s
 => => sha256:c428f1a494230852524a2a5957cc5199c36c8 226B / 226B  1.0s
 => => sha256:156740b07ef8a632f9f7bea4e57e4ee 91.63MB / 91.63MB  7.3s
 => => sha256:fb5a4c8af82f00730b7427e47bda7f76cea2e 270B / 270B  2.0s
 => => extracting sha256:a603fa5e3b4127f210503aaa6189abf6286ee5  2.2s
 => => sha256:a8e3b94fe6c130216f4567f987d8a71cfebc4 491B / 491B  2.4s
 => => sha256:972155ae644b037435eddf206152975 10.74MB / 10.74MB  3.9s
 => => sha256:93346a3f46bcefa9de4ea57b9043f0b 25.40MB / 25.40MB  5.7s
 => => sha256:b922b67ca46b30a57ae7fa2105d7e0bfb 2.45kB / 2.45kB  4.4s
```

After it is finished, run the environment background mode

```
natenguio@natenguio-virtualbox:~/travellist-demo$ sudo docker-compose
up -d
Creating network "travellist-demo_travellist" with driver "bridge"
Pulling db (mysql:8.0)...
8.0: Pulling from library/mysql
cea172a6e83b: Pull complete
6cfd9ff0e16b: Pull complete
6cdb1d882a76: Pull complete
29c08134121b: Pull complete
bcc2e96984e1: Pull complete
a5636d731401: Pull complete
fb0ff87df77d: Pull complete
bb9c2ecc3352: Pull complete
fbde96d8818e: Downloading [=========================>
         ]  65.63MB/128.1MBplete
=======>]    5.33kB/5.33kBmplete
=======>]      122B/122B
```

```
Status: Downloaded newer image for nginx:alpine
Creating travellist-db    ... done
Creating travellist-app   ... done
Creating travellist-nginx ... done
natenguio@natenguio-virtualbox:~/travellist-demo$ ▌
```

Check the information about the state of the services

```
natenguio@natenguio-virtualbox:~/travellist-demo$ sudo docker-compose
ps
      Name                Command            State          Ports
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
travellist-app     docker-php-             Up      9000/tcp
                   entrypoint php-fpm
travellist-db      docker-entrypoint.sh    Up      3306/tcp, 33060/tcp
                   mysqld
travellist-nginx   /docker-                Up      0.0.0.0:8000-
                   entrypoint.sh ngin              >80/tcp,:::8000-
                   ...                             >80/tcp
natenguio@natenguio-virtualbox:~/travellist-demo$ ▌
```

Execute commands inside service containers

```
natenguio@natenguio-virtualbox:~/travellist-demo$ sudo docker-compose
exec app ls -l
total 256
-rw-rw-r-- 1 sammy sammy    737 Apr 24 12:41 Dockerfile
-rw-rw-r-- 1 sammy sammy    101 Jan  7  2020 README.md
drwxrwxr-x 6 sammy sammy   4096 Jan  7  2020 app
-rwxr-xr-x 1 sammy sammy   1686 Jan  7  2020 artisan
drwxrwxr-x 3 sammy sammy   4096 Jan  7  2020 bootstrap
-rw-rw-r-- 1 sammy sammy   1501 Jan  7  2020 composer.json
-rw-rw-r-- 1 sammy sammy 179071 Jan  7  2020 composer.lock
drwxrwxr-x 2 sammy sammy   4096 Jan  7  2020 config
drwxrwxr-x 5 sammy sammy   4096 Jan  7  2020 database
drwxrwxr-x 4 sammy sammy   4096 Apr 24 12:44 docker-compose
-rw-rw-r-- 1 sammy sammy   1015 Apr 24 12:47 docker-compose.yml
-rw-rw-r-- 1 sammy sammy   1013 Jan  7  2020 package.json
-rw-rw-r-- 1 sammy sammy   1405 Jan  7  2020 phpunit.xml
drwxrwxr-x 2 sammy sammy   4096 Jan  7  2020 public
-rw-rw-r-- 1 sammy sammy    273 Jan  7  2020 readme.md
drwxrwxr-x 6 sammy sammy   4096 Jan  7  2020 resources
```

Run the composer install to install the application dependencies

```
natenguio@natenguio-virtualbox:~/travellist-demo$ sudo docker-compose
exec app rm -rf vendor composer.lock
sudo docker-compose exec app composer install
No composer.lock file present. Updating dependencies to latest instead
 of installing from lock file. See https://getcomposer.org/install for
 more information.
Loading composer repositories with package information
Updating dependencies
Lock file operations: 86 installs, 0 updates, 0 removals
  - Locking carbonphp/carbon-doctrine-types (2.1.0)
  - Locking doctrine/inflector (2.0.10)
  - Locking doctrine/instantiator (1.5.0)
  - Locking doctrine/lexer (1.2.3)
  - Locking dragonmantank/cron-expression (v2.3.1)
  - Locking egulias/email-validator (2.1.25)
  - Locking facade/flare-client-php (1.10.0)
  - Locking facade/ignition (1.18.1)
  - Locking facade/ignition-contracts (1.0.2)
```

```
Generating optimized autoload files
> Illuminate\Foundation\ComposerScripts::postAutoloadDump
> @php artisan package:discover --ansi
Discovered Package: facade/ignition
Discovered Package: fideloper/proxy
Discovered Package: laravel/tinker
Discovered Package: nesbot/carbon
Discovered Package: nunomaduro/collision
Package manifest generated successfully.
64 packages you are using are looking for funding.
Use the `composer fund` command to find out more!
natenguio@natenguio-virtualbox:~/travellist-demo$
```

Generate a unique application key with artisan Laravel command line tool.

```
natenguio@natenguio-virtualbox:~/travellist-demo$ sudo docker-compose
exec app php artisan key:generate
Application key set successfully.
natenguio@natenguio-virtualbox:~/travellist-demo$
```

Go to the browser and access localhost:8000

This should show

My Travel Bucket List

Places I'd Like to Visit

- Berlin
- Budapest
- Denver
- Helsinki
- Lisbon
- Nairobi
- Rio
- Tokyo

Places I've Already Been To

- Cincinnati
- Moscow
- Oslo