Practice D: build your own image

- We will build a simple PHP Calculator webpage
- PHP and HTTPD will be installed in the image
- Base image can any Linux (Centos Recommended)

Building images : Building your own image

- Steps :
- A) clone or download this source : https://github.com/stv707/k8_training.git

Building images : Building your own image

- Modify the Dockerfile to match below :

```
# Build image from official CentOS 7 Image
FROM centos:7

# Install Apache
RUN yum -y update
RUN yum -y install httpd httpd-tools

# Install EPEL Repo
RUN rpm -Uvh https://dl.fedoraproject.org/pub/epel/epel-release-latest-7.noarch.rpm \
 && rpm -Uvh https://mirror.webtatic.com/yum/el7/webtatic-release.rpm

# Install PHP
RUN yum -y install php72w php72w-bcmath php72w-cli php72w-common php72w-gd php72w-intl  php72w-mbstring

# Update Apache Configuration
RUN sed -E -i -e '/<Directory "\/var\/www\/html">/,/<\/Directory>/s/AllowOverride None/AllowOverride All/' /etc/httpd/conf/httpd.conf
RUN sed -E -i -e 's/DirectoryIndex (.*)$/DirectoryIndex index.php \1/g' /etc/httpd/conf/httpd.conf

# Set working dir to copy index.php
WORKDIR  /var/www/html/

# Copy index.php to WORKDIR
COPY index.php index.php

# open Port 80
EXPOSE 80

# Start Apache
CMD ["/usr/sbin/httpd","-D","FOREGROUND"]
```

Building images : Building your own image

- Use/Modify/Add index.php

```
<html>
<p> Welcome to simple PHP page </p>
<p> This page will sum up 2 numbers and give you the answer </p>


<form action="index.php" method="GET">
     Num1: <input type="number" name="num1">
     Num2: <input type="number" name="num2">
     <input type="submit">
</form>

<?php
     $num1 = $_GET["num1"];
     $num2 = $_GET["num2"];
     echo $num1 + $num2;
?>
```

Building images : Building your own image

- End Result :

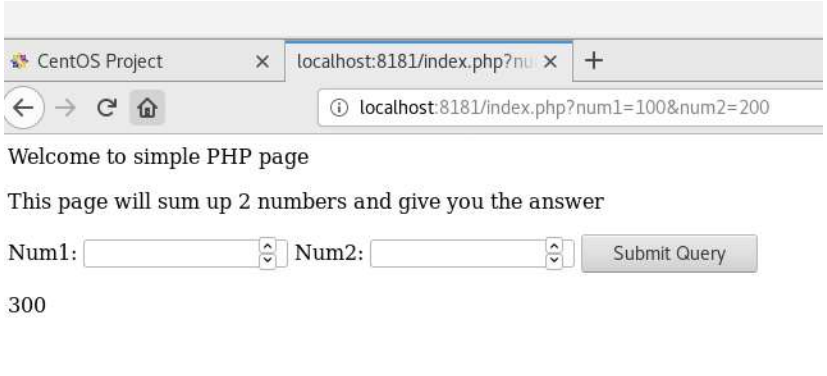
```
[root@servera dockerfile]# pwd
/root/dockerfile
[root@servera dockerfile]#
[root@servera dockerfile]#
[root@servera dockerfile]#
[root@servera dockerfile]# tree .
.
├── Dockerfile
└── index.php

0 directories, 2 files
[root@servera dockerfile]#
```

Building images : Building your own image

- Build your image and run the image and Verify the Image

```
[root@servera dockerfile]# docker build -t myphp2 .
Sending build context to Docker daemon  3.584kB
Step 1/11 : FROM centos:7
 ---> 5e35e350aded
Step 2/11 : RUN yum -y update
 ---> Using cache
 ---> ed99e45ead3e
Step 3/11 : RUN yum -y install httpd httpd-tools
 ---> Using cache
 ---> d72e0acf4497
Step 4/11 : RUN rpm -Uvh https://dl.fedoraproject.org/pub/epel/epel-rel
pm
 ---> Using cache
```




```
[root@servera dockerfile]# docker container  run -d -p 8181:80   myphp2
6e29ce677458ad6c2dae4686513034b16500a3573b2fc2c1f2bdb1bbd339c799
[root@servera dockerfile]#
[root@servera dockerfile]# docker container ls
CONTAINER ID        IMAGE               COMMAND                  CREATED             STATUS
6e29ce677458        myphp2              "/usr/sbin/httpd -D …"   7 seconds ago       Up 7 seconds
```

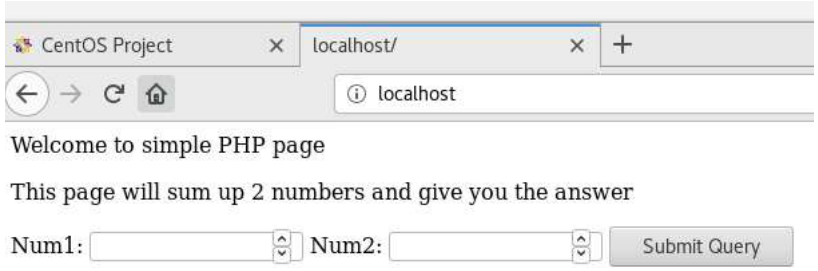
Additional docker image – bind mount

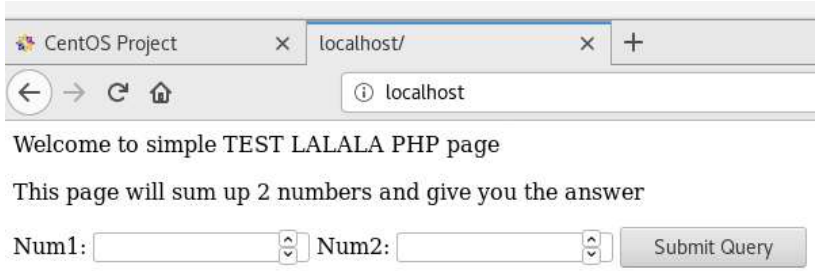
- For Developers, its best you start a container with code directory is bind mounted to your local machine
- With this option, you can develop / update / test your code from host machine and verify in Container

```
[root@servera code]# pwd
/root/code
[root@servera code]# ls
index.php
[root@servera code]# docker container run -d -p 80:80 -v /root/code/:/var/www/html  myphp
3ad4cdcd6ccb2e5f55d51513f4de32d2ecd2650a403de46e218c74a0792033cd
[root@servera code]#
[root@servera code]# docker container ls
CONTAINER ID        IMAGE               COMMAND                  CREATED             STATUS
3ad4cdcd6ccb        myphp               "/usr/sbin/httpd -D …"   22 seconds ago      Up 22 seconds
[root@servera code]#
```

Additional docker image – bind mount

- Changes on local /root/code will be reflected to running container whenever there is changes
- The before and After effect






```
<html>
<p> Welcome to simple TEST LALALA PHP page </p>
<p> This page will sum up 2 numbers and give you the answer </p>


<form action="index.php" method="GET">
     Num1: <input type="number" name="num1">
     Num2: <input type="number" name="num2">
     <input type="submit">
```

Building images : Building your own image

- Build more with additional Docker files and code given in Github