Helpful Links

➜ Install Apache, MySQL, PHP on macOS High Sierra 10.13
➜ Set up localhost on macOS High Sierra (Apache, MySQL, and PHP 7) with SSL/HTTPS

Turn on apache

- At the terminal, type: **>** `sudo apachectl start`
- In a browser type: `localhost` or `localh ost /in dex.html`
- If you see: **It Works!**, it works.

Apache General Information

Apache Doc Root Directory	/Library/WebServer/Documents
httpd.conf lives in:	/etc/apache2/httpd.conf
localhost web access	**http://localhost/index.php**
Other docs and dirs in Document Root	phpinfo.php, phpmyadmin, php.ini, inc/
bash alias	`docroo t='cd /Libra ry/ Web Ser ver /Do cu m ents\'`

Turn on PHP

At the terminal, type: **$>** `sudo vi /etc/a pac he2 /ht tpd.c onf`

Uncomment: `#LoadM odule php7_m odule libexe c/a pac - he2 /li bph p7.so`

Save file then restart apache: **$>** `sudo apachectl restart`

In the document root: **$>** `sudo vi index.php`

Enter:
`<?php`
`phpinfo();`
`?>`

Save file then restart apache: **$>** `sudo apachectl restart`

In a browser, type: `localh ost /in dex.php`

Install MySQL

- Download from https://dev.mysql.com/downloads/mysql
- Choose the version for your OS
- Click "No thanks, just start my download"
- Go through the download process
- Make sure you copy the password for root@localhost
- Start MySQL Server
- Add `/usr/l oca l/m ysq l/bin` to path in `.bash_ profile`

To update password, see **"If you lock yourself out of phpmyadmin"**

Install phpmyadmin

- Download phpmyadmin
- Make new directory in the document root: `sudo mkdir phpmyad min`
- Make it writeable by owner (which could be root): `sudo chmod 75 5 phpmyadmin`
- Unzip or unpack the zip file and copy to new directory

Also see: phpmyadmin setup doc

- From `localh ost /ph pmy adm in/ setup`, create a new server connection by clicking **New server**
- Under Authentication tab, enter `root` as user and new password for root

Then click **Save**.

- Now navigate to `localh ost /ph pmy admin`

If you lock yourself out of phpmyadmin:

...by turning on no password **IN** phpmyadmin:
At the command line:
`$ sudo mysql`
mysql> `SET PASSWORD FOR root@l oca lho st= PAS SWO R( tme in');`
mysql> `quit;`
Now use username *root* and password *letmein*

Database Access Information

Directory for include files	[docroot]/inc
MySQL Login file	db_conn.php
PHP include line	`requir e_once 'inc/d b_c onn.ph p';`

[docroot]/inc/db_conn.php

```
<?php
// creden tials for connecting to database
$host = 'hostn ame';  //database hostname
$user = 'db_user';  //database username
$pw = 'db_us er_pw';  //database user password
$db = 'datab ase';  //mysql database name
?>
```

Database normalization

FIRST NORMAL FORM

➜ NO repeating columns containing same type of data

➜ ALL columns contain a single value

➜ Unique PRIMARY KEY for each row

SECOND NORMAL FORM

➜ Table must be in First Normal Form

➜ Create new tables for any data that is repeated in columns

➜ Each new table needs a unique PRIMARY KEY for each row. `AUTO_INCREMENT` can do this.

THIRD NORMAL FORM

➜ Table must be in First and Second Normal Form. This is usually all that is necessary.

➜ Any data that is *not* dependent on a primary key, but *is* dependent on another value, should be removed to another table. This is a very strict use of normalization.