

PHP “Hello World”

Getting started with web programming

In this lab you will run a simple PHP web application, it will be useful for you even if you choose to use another language. First install MAMP:

Mac

<https://www.mamp.info/en/mac/>

Windows

<https://www.mamp.info/en/windows/>

Important: Choose the free version.

MAMP will automatically start a webserver to serve the files, run PHP and a MySQL database. It will also run the phpMyAdmin web interface so you can make changes to the database.

1. Create a project folder:
Create a project folder where you will serve the files from, for example “myproject”.
2. Serve the files: Click on **Preferences** in the top-left corner, select **Server**, click on **Choose** and select your project folder.
3. Note the ports: Click on **Preferences** and then **Ports**. Note what ports Apache (Webserver) and the MySQL (Database) is running on.
4. Check that you can access phpMyAdmin, for example
<http://localhost:PORTNUMBER/phpMyAdmin5/>
5. Create a new database under **Databases**, name it “things”
6. Put all the code files from github in your project folder. There is a create_table.sql, copy that code and run it under **SQL** in phpMyAdmin. It will create the database. Now go to localhost:PORTNUMBER, it should return “hello”.

Task for the day:


1. Run and figure out how the program works. See if you can add two records “Elephant”, “Land” “Legs” and “Bird”, “Air”, “Wings”.
2. See if you can extend the program with a new column

Turning on error messages

Create a new file, test.php and put it in the folder serving your files. Put this code in the file:

```
<?php
phpinfo()
?>
```

Then go to to localhost:(portnumber)/test.php, it will look like this:

PHP Version 7.4.33	
	
System	Darwin emp-48-236.eduroam.uu.se 20.6.0 Darwin Kernel Version 20.6.0: Sun Nov 6 23:16:58 PST 2022; root:xnu-7195.141.46~1/RELEASE_ARM64_T8010 arm64
Build Date	Dec 8 2022 17:28:35
Configure Command	'./configure' '--with-apxs2=/Applications/MAMP/Library/bin/apxs' '--with-zlib' '--with-zlib-dir=/Applications/MAMP/Library' '--prefix=/Applications/MAMP/bin/php/php7.4.33' '--exec-prefix=/Applications/MAMP/bin/php/php7.4.33' '--sysconfdir=/Applications/MAMP/bin/php/php7.4.33/conf' '--with-config-file-path=/Applications/MAMP/bin/php/php7.4.33/conf' '--enable-ftp' '--with-bz2=/Applications/MAMP/Library' '--with-mysqli=mysqlnd' '--enable-mbstring=all' '--with-curl=/Applications/MAMP/Library' '--enable-sockets' '--enable-bcmath' '--enable-soap' '--enable-calendar' '--with-pgsql=shared,/Applications/MAMP/Library/pg' '--enable-exif' '--with-gettext=shared,/Applications/MAMP/Library' '--with-xsl=/Applications/MAMP/Library' '--with-pdo-mysql=mysqlnd' '--with-pdo-pgsql=shared,/Applications/MAMP/Library/pg' '--with-openssl=/Applications/MAMP/Library' '--with-iconv=/Applications/MAMP/Library' '--enable-opcache' '--enable-intl' '--with-tidy=shared,/Applications/MAMP/Library' '--with-readline' '--with-mhash' '--with-iconv-dir=/Applications/MAMP/Library' '--with-sodium=/Applications/MAMP/Library' '--with-password-argon2=/Applications/MAMP/Library' '--disable-cgi' '--with-zip' '--with-xmlrpc' '--with-kerberos' '--with-pdo-sqlite' '--with-sqlite3' '--with-imap=shared,/Applications/MAMP/Library/lib/imap-2007f/lib' '--with-imap-ssl=/Applications/MAMP/Library' '--disable-phpdbg' '--enable-gd' '--with-webp' '--with-jpeg' '--with-freetype' '--with-pear' '--enable-pcntl' '--with-external-pcre=/Applications/MAMP/Library' '--with-ldap=/Applications/MAMP/Library' '--with-ldap-sasl=/Applications/MAMP/Library' 'KERBEROS_FLAGS=-I/usr/include' 'KERBEROS_LIBS=-lkrb5' 'SQLITE_FLAGS=' 'SQLITE_LIBS=-lsqlite3' 'JPEG_FLAGS=' 'JPEG_LIBS=-ljpeg' 'SASL_FLAGS=-I/usr/include/sasl' 'SASL_LIBS=-lsasl2'
Server API	Apache 2.0 Handler
Virtual Directory Support	disabled
Configuration File (php.ini) Path	/Applications/MAMP/bin/php/php7.4.33/conf
Loaded Configuration File	/Applications/MAMP/bin/php/php7.4.33/conf/php.ini
Scan this dir for additional .ini files	(none)
Additional .ini files parsed	(none)
PHP API	20190902
PHP Extension	20190902
Zend Extension	320190902
Zend Extension Build	API320190902,NTS
PHP Extension Build	API20190902,NTS
Default Build	no

Open the value of **Loaded Configuration File**, which is `/Applications/MAMP/bin/php/php7.4.33/conf/php.ini` in our case. You can open it in the file explorer in Windows or use the terminal on mac and write “open `/Applications/MAMP/bin/php/php7.4.33/conf/php.ini`”

Change display_errors = Off to “On”:

```

; stderr = Display errors to STDERR
; On or stdout = Display errors to !
; Default Value: On
; Development Value: On
; Production Value: Off
; http://php.net/display-errors
display_errors = Off

; The display of errors which occur during
; separately from display_errors. PHP
; errors from clients. Turning the di

```

Now restart the server.

Turning off cache

1. Click on “Preferences” or similar.
2. Click on “General”
3. Make sure PHP-Cache is off.
4. Restart the server

The screenshot shows the 'General' tab of the MAMP Preferences dialog. At the top, there are four tabs: 'General', 'Ports', 'Server', and 'Cloud'. Below the tabs, there are two sections: 'When starting MAMP:' and 'When quitting MAMP:'. Under 'When starting MAMP:', there are three unchecked checkboxes: 'Start servers', 'Check for updates', and 'Open WebStart page'. Under 'When quitting MAMP:', there is one checked checkbox: 'Stop servers'. Below these sections, there is a 'PHP-Cache:' label followed by a dropdown menu set to 'off'. At the bottom, there is a 'My favorite link:' label followed by an empty text input field. At the very bottom, there are three buttons: 'Show all dialogs again', 'Cancel', and 'OK'.

Learning theory

It is very tempting to just start programming and doing the assignment without actually learning any theory. This will be fun at first but then you'll have problems understanding error messages, extending the code etc. Basic proficiency in these languages will be needed in this course, please try to go through these guides at least partly:

HTML:

<https://www.w3schools.com/html/>

PHP:

<https://www.w3schools.com/php/>

SQL:

<https://www.w3schools.com/sql/>

Especially HTML <form> and HTTP Methods.

https://www.w3schools.com/tags/ref_httpmethods.asp

https://www.w3schools.com/tags/att_form_method.asp

https://www.w3schools.com/php/php_superglobals_post.asp

Also try to understand the provided code sample shared on github.

Debugging

Make tiny steps and always refresh the page to see if the things are working. Use these shortcut keyboard commands to make it easy:

Ctrl (Cmd on Mac) + S (save file)

Ctrl (Cmd on Mac) + R (Refresh website)

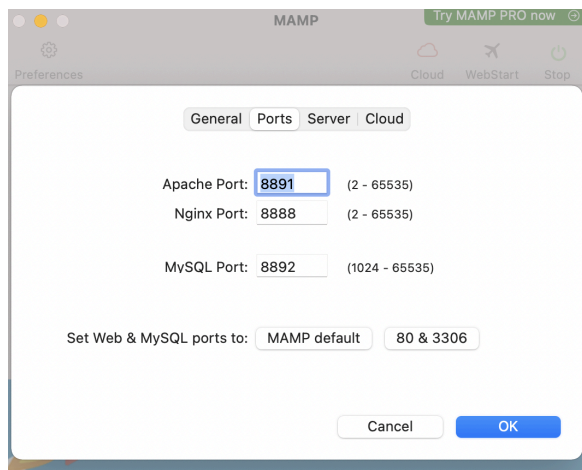
Ctrl (Cmd on Mac) + Tab (Switch application)

Use the print_r function and echo, comment out code to pinpoint errors.

Locate myPhPAdmin

First check the port your application is running on.

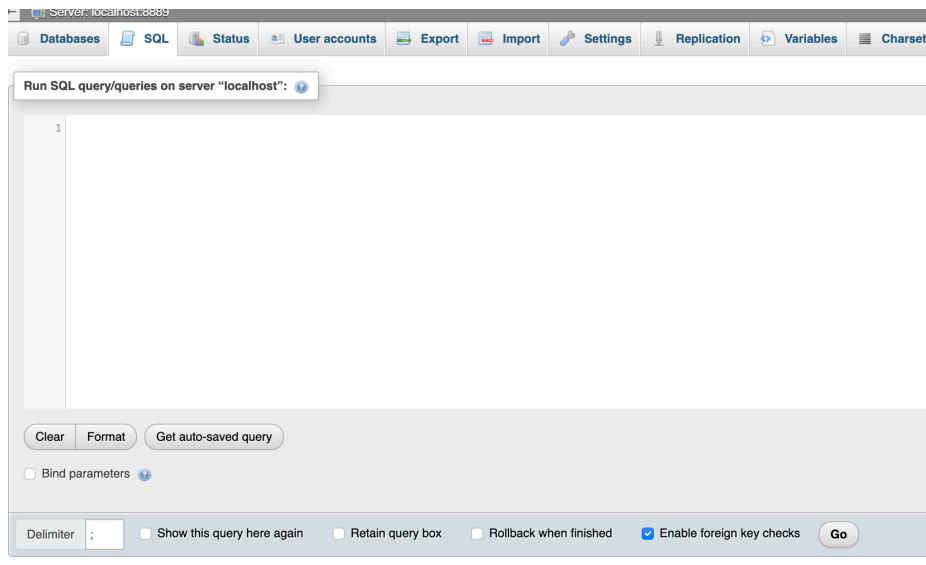
Go to “Preferences” -> “Ports”, read the port of “Apache port”.



Go to:

<http://localhost:PORTNUMBER/phpMyAdmin5/>

Click on “SQL”, here you can put in SQL query and execute it with the “Go” button.



Final Tips

1. Make sure your files are always served from the web server (starting with localhost in the address bar).
2. Remember to add a semicolon to all lines in PHP.
You can just use .php files, you don't have to use .html files. All HTML is valid in a PHP-file.
3. A simple way to work with git:

Upload changes:

```
git add -A  
git commit -m "changes 123"  
git push
```

Download changes:

```
git stash  
git pull  
git stash pop
```

4. Make sure you understand what it means to request a page with HTTP POST PUT GET or DELETE.
5. Make sure you understand the difference between URL encoded and application/x-www-form-urlencoded.

How to read a URL encoded parameter in PHP:

```
<?php  
$param = $_GET['param_name'];  
$decoded_param = urldecode($param);  
?>
```

How to read parameters in application/x-www-form-urlencoded POST request:

```
<?php  
$param = $_POST['param_name'];  
?>
```