**S-102**

**Introduction**

During the S-102 Project ,with my colleagues we’ve installed the Apache server into our Raspberry after installing The Raspberry OS into.

On the first day , we had read the project , we put together all the information and understood what we’re supposed to do . We started to think how to better do our work , and we’ve came with 2 ideas . Install MYSQL,PHP and PhpMyAdmin in order to develop our web , but afterwards we understood that this isn’t necessary and we switched to out 2nd idea, adding our websites thanks to virtual host, and not use any software . Why ?

We understood that we don’t have data on our websites, and this option will only complicate a bit our task.

**The Distribution of work**

The works it’s devised by: configurating the OS , Download Apache, Download PHP,MYSQL, PHPmyAdmin, configurating the virtual host , adding the websites and insert the SSL certificate.

* Alice- Configurated the OS , Download Apache , added the websites and the SSL certificate
* Clement-Configurating the virtual host
* Ecaterina-Download the software, doing the rapport

***Precision:*** During this project, everyone have contributed equally to it . Even when somebody was face to the screen , the others searched information if needed, looked if everything is good, gave their opinion and knowledge in order to make a good work. Globally we worked as a team , and shared all our knowledge to each others.

**Our Sources**

Namecheap.com , Raspberry.com , digitalocean.com and many other YouTube video .

**The work processes**

*1st step* : **Install the OS**

We did go to the raspberrypi.com and we choose the raspberry PI OS on the SD card .

*2nd step:* **Installing the Apache**

To update and upgrade the machine :

We used the command <sudo apt-get install apache2>

Afterwards we restarted with <sudo service apache2 >

And we have verified in which directory the Apache have the directory for precision.

After we’ve verified by taping our IP address or http://localhost in a random browser , to see that the server is working.

*3nd step* : **Adding the websites**

For adding the websites, we simply downloaded our leftovers or even projects of HTML and we added them to the www folder(/var/www)

We downloaded them manually and move them in the www folder with the command mv , in order to access them in a browser afterwards.

*Between steps* we restarted the apache system and seen his status to be sure that everything is good with the follows commands:

<Sudo systemctl restart apache2> --------to restart

we were in the /etc/apache2/sites-avaible path

<Sudo systemctl status apache2> ---- to see the status we were in the /etc/apache2/sites-avaible path

*4nd step* : **Configurating the virtual Host**

For our virtual host we did go to sites\_avaible in order to configurate all our websites with the fallow commands:

</etc/apache2/sites\_avaible> -Once we were there we did:

<Sudo nano cvAlice.com.conf>(is the Alice web)

And afterwards we put the follow text:

<VirtuaHost \*81>

ServerAdmin wenmaster@localhost

ServerName cv.fr

DocumentRoot /var/www/CvAlice

<Sudo nano cvClement.com.conf>(is teh Clement web)

And afterwards we put the follow text:

<VirtuaHost \*82>

ServerAdmin wenmaster@localhost

ServerName cv.fr

DocumentRoot /var/www/CvClement

Sudo nano coinEcaterina.com.conf (is the Ecaterina Web)

And afterwards we put the follow text:

<VirtuaHost \*83>

ServerAdmin wenmaster@localhost

ServerName cv.fr

DocumentRoot /var/www/coinEcaterina/projet\_coin

We put the last website <coinEcaterina> in an another folder because this way it was easier for the machine to read all 3 websites . We had a problem when all 3 websites where on the same directory www , and we think it was a problem of reading the files knowing that some could have the same name how the website coinEcaterina have multiples files.

We also created the 80 port of the virtual host that is the default virtual host

Also we enabled the websites to 000 default.conf. In result when we type in a browser our IP address and :81 or :82 or :83 we have the webs we added, but they aren’t secure. To change it, we did go to the step 5 .

*5nd step*: **Configurating the TSL/SSL certificate**

For the TSL certificate we started by disabling default-ssl.conf and enabled the port 443 that we created on our virtual host.Also we created the files for the password.

sudo htpasswd /etc/apache2/.htpasswd alice

With the cat function we print the following : cat /etc/apache2/.htpassw,where we change the password.

*Configuration of entering the website with a password*

1.We verified that in default-ssl.conf we have our file with the 443 port .

2.We target the path that we want to secure with Directory.

3.And we completed it with the necessary information .

4.We chose to verify the configuration before restart.

5.We added a ht.acces to our www path where the 443 port we want to secure is

6.At the end we restarted and verified the status of apache to see if a https web was detected .

We used the systemctl to see the success of restart.

*The Command we used:(each number of command correspond to a comment higher)*

1.sudo nano /etc/apache2/sites-enabled/default-ssl.conf

2.<Directory "/var/www/html">

</Directory>// in our virtual host of the port 443

3. AuthType Basic

AuthName “Restricted Content”

AuthUserFile /etc/apache2/.htpasswd

Require valid-user

4. sudo apache2ctl configtest

5. sudo nano /var/www/html/.htaccess

6. sudo systemctl restart apache2

sudo systemctl status apache2

***Finally we get*** :

<VirtualHost \*:443>

ServerName example.com

DocumentRoot /var/ww/html

***SSLEngine on***

SSLCertificateFile /etc/apache2/server.crt

SSLCertificateHeyFile /etc/apache2/server.key

<**Directory** “ /var/www/html”>

**AuthType Basic**

**AuthName “Restricted Content”**

**AuthUserFile /etc/apache2/.htpasswd**

**Require valid-user**

</Directory>

</VirtualHost>