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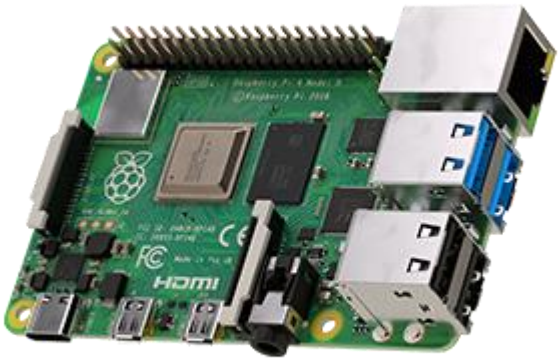
Report of Project S103



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INTRODUCTION

Welcome to the report of the project S103- Installation of a post for development. Our team is composed of Lao Alex, Martin Enzo and Bhatoo Muhammad Hakeem. In this report you will find our organization as well as our different steps to achieve the project. Indeed, we had access to the following materials: 1 Raspberry Pi 400, 1 SD card, 1 an SD card reader/adapter, 1 Ethernet-to-USB adapter, 1 UTP Patch (short Ethernet cable), 1 HDMI-to-mini HDMI cable (to connect the Raspberry to a monitor) and 1 USB a -to USB c cable (to power the Raspberry). We had 4 objectives: install an Operating System on the Raspberry, do SysOP, install a DBMS, configure the database on the Raspberry.

FIRST STEP

First of all, everyone had a task to accomplish, Enzo and Hakeem were looking to reboot the SD Card (even though she was empty, we never know). We were in the same TD group (1G) so we had a good communication and we were already friends so there was no problem to disperse the work. Alex was trying to get information to install the Operating System on the raspberry once she was empty. We choose the Operating System “Raspberry Pi OS” because we weren’t geniuses and there was a lot of documentation on Internet. Once everything was done, we put the SD card in the SD card reader/ adapter, we installed the Operating System on it. Then, once it was finished we put the SD card in the Raspberry.

SECOND STEP

Then, we followed the on-screen instructions to complete the initial setup of the operating system. This include setting the system language, the time zone and creating a user account.

After that, we opened a terminal on the Raspberry and ran the following commands to update and upgrade the system :

```
pi@raspberry:~$ sudo apt update
pi@raspberry:~$ sudo apt upgrade
```

And after theses steps, we rebooted the Raspberry with this command :

```
pi@raspberry:~$ sudo reboot
```

We ensured that the operating system was running correctly.

THIRD STEP

Then we configure the ssh to be able to have access to the Raspberry Pi with another computer.

```
pi@raspberry:~$ sudo apt install openssh-server
pi@raspberry:~$ sudo systemctl enable ssh
pi@raspberry:~$ sudo systemctl start ssh
pi@raspberry:~$ hostname -I //to be sure that the IP address is 10.42.0.2
```

With another computer, we just have to use this command to have access to the Raspberry.

```
ssh pi@10.42.0.2
```

FOURTH STEP

With all of this done, we just have to install MariaDB

```
pi@raspberry:~$ sudo apt install mariadb-server -y
```

Once the installation finished, we started the mariaDB server with theses commands and ensure that the server was working :

```
pi@raspberry:~$ sudo systemctl start mariadb
pi@raspberry:~$ sudo service mysql start
pi@raspberry:~$ sudo systemctl status mariadb
pi@raspberry:~$ sudo mariadb -u root -p
```

Then, we create the users needed :

```
CREATE USER 'prof'@'%' IDENTIFIED BY 'pwdprof';
CREATE USER 'student'@'10.42.0.2' IDENTIFIED BY 'pwdstudent';
```

When we wrote these instructions we put the wrong IP Adress for the 'prof' user, we put '11.42.0.2', due to a typing mistake. so the prof didn't have the access to the database. We had to use the following command to correct and create a new 'prof' user.

```
DROP USER 'prof'@'11.42.0.2' ;
```

After we created the users that we needed, we gave them all the privileges on any databases thanks to theses commands.

```
GRANT ALL PRIVILEGES ON *.* TO 'prof'@'%';
GRANT ALL PRIVILEGES ON *.* TO 'student'@'10.42.0.2';
```

And we refreshed the privileges :

```
FLUSH PRIVILEGES;
EXIT;
```

FIFTH STEP

Then, we had to connect at MariaDB with the prof user

```
pi@raspberry:~$ sudo mariadb -u prof -p
//We used the password pwdprof
```

And after we created the database :

```
CREATE DATABASE CAMPING;
USE CAMPING;
```

Once the database was created, we created tables inside of it.

```
CREATE TABLE CAMPING (
 NumCamping INT PRIMARY KEY,
 NomCamping VARCHAR(255),
 AddrCamping VARCHAR(255),
 TelCamping VARCHAR(20),
 DateOuv DATE,
 DateFerm DATE,
 NbEtoiles INT,
 QualitéFrance VARCHAR(255)
);

CREATE TABLE ACTIVITE (
 NumActivité INT PRIMARY KEY,
 NomActivité VARCHAR(255),
 TypeActivité VARCHAR(255)
);

CREATE TABLE ACTICAMPING (
 NumCamping INT,
 NumActivité INT,
 PrixActivité DECIMAL(10, 2),
 PRIMARY KEY (NumCamping, NumActivité),
 FOREIGN KEY (NumCamping) REFERENCES CAMPING(NumCamping),
 FOREIGN KEY (NumActivité) REFERENCES ACTIVITE(NumActivité));
```

SIXTH STEP

And finally we inserted some data inside of theses tables.

```
INSERT INTO ACTIVITE (NumActivité, NomActivité, TypeActivité)
VALUES
    (1, 'Randonnée', 'Sport'),
    (2, 'Piscine', 'Loisir'),
    (3, 'Cours de cuisine', 'Atelier');


INSERT INTO CAMPING (NumCamping, NomCamping, AddrCamping,
TelCamping, DateOuv, DateFerm, NbEtoiles, QualitéFrance)
VALUES
    (101, 'Camping A', 'Adresse A', '123-456-7890', '2023-01-
01', '2023-12-31', 4,'Standard'),
    (102, 'Camping B', 'Adresse B', '987-654-3210', '2023-02-
01', '2023-11-30', 5, 'Premium'),
    (103, 'Camping C', 'Adresse C', '555-123-4567', '2023-03-
01', '2023-10-31', 3, 'Standard');


INSERT INTO ACTICAMPING (NumCamping, NumActivité,PrixActivité)
VALUES
    (101, 1, 20.00),
    (101, 2, 5.00),
    (102, 3, 30.00),
    (103, 1, 15.00),
    (103, 2, 8.00);
```

SEVENTH STEP

Here comes the ultimate step, verify that we did everything correctly, to do this, the teacher executed a python script, to see if the work was done correctly but sadly, something went wrong concerning the access to MariaDB database, it was a problem with the IP Adress, a little mistake just under ours nails (I quote Mr Zema), and he corrected it and it works.

DIFFICULTIES

During this S.A.E, we met few difficulties :

- First, we forgot to create a database so we created useless tables and data inside of it.
- Second, we did the ssh's commands in the wrong order and we had to start from the beginning with the help of the teacher.

And that's the principals problems that we've met.

Thanks for reading our report, we hope that you will understand it.

By Alex LAO, Enzo MARTIN, Muhammad Hakeem Bhatoo