[1. Chat Program 설치 및 customizing]

a. 새 사용자 계정 및 홈디렉터리 설정

sudo useradd -m chatuser

sudo passwd chatuser

cd /home/chatuser

sudo mkdir html

b. MYSQL 데이터베이스 및 계정 생성

sudo mysql -uroot -p

create database chatdb default character set utf8;

grant all on chatdb.* to chatuser@localhost identified by '1234';

flush privileges;

exit;

sudo mysql -u chatuser -p

show database;

```
MariaDB [(none)]> show databases;
+--------------------+
| Database           |
+--------------------+
| chatdb             |
| information_schema |
+--------------------+
2 rows in set (0.002 sec)
```

c. Virtual Host설정 (php 사용, phpMyAdmin 설정)

cd /etc/nginx/sites-a*

sudo cp default hguchat.com

sudo vim hguchat.com

cd /home/chatuser/html

sudo vim index.php

sudo ln -s /usr/share/phpmyadim myadmin

cd ..

sudo chown -R chatuser:www-data html

cd /etc/nginx/sites-e*

sudo ln -s ../sites-a*/hguchat.com hguchat.com

sudo nginx -t

sudo service nginx restart

```
pi@raspberrypi:/home/chatuser/html $ cd
pi@raspberrypi:~ $ cd /etc/nginx/sites-a*
pi@raspberrypi:/etc/nginx/sites-available $ ls
default   goodrpi.com  mybatflat.com  mywp2.com  mywp.com
pi@raspberrypi:/etc/nginx/sites-available $ sudo cp default hguchat.com
pi@raspberrypi:/etc/nginx/sites-available $ sudo vim hguchat.com
```

```
pi@raspberrypi:/etc/nginx/sites-available $ cd /home/chatuser/html
pi@raspberrypi:/home/chatuser/html $ ls
pi@raspberrypi:/home/chatuser/html $ sudo vim index.php
pi@raspberrypi:/home/chatuser/html $ pi@raspberrypi:/home/chatuser/html $
pi@raspberrypi:/home/chatuser/html $ sudo ln -s /usr/share/phpmyadmin myadmin
pi@raspberrypi:/home/chatuser/html $ ls
index.php  myadmin
pi@raspberrypi:/home/chatuser/html $ ls -al
total 12
drwxr-xr-x 2 root     root     4096 Jun  8 03:46 .
drwxr-xr-x 3 chatuser chatuser 4096 Jun  8 03:33 ..
-rw-r--r-- 1 root     root       42 Jun  8 03:46 index.php
lrwxrwxrwx 1 root     root       21 Jun  8 03:46 myadmin -> /usr/share/phpmyadmin
pi@raspberrypi:/home/chatuser/html $ cd ..
pi@raspberrypi:/home/chatuser $ sudo chown -R chatuser:www-data html
pi@raspberrypi:/home/chatuser $ cd html
pi@raspberrypi:/home/chatuser/html $ ls -al
total 12
drwxr-xr-x 2 chatuser www-data 4096 Jun  8 03:46 .
drwxr-xr-x 3 chatuser chatuser 4096 Jun  8 03:33 ..
-rw-r--r-- 1 chatuser www-data   42 Jun  8 03:46 index.php
lrwxrwxrwx 1 chatuser www-data   21 Jun  8 03:46 myadmin -> /usr/share/phpmyadmin
```

```
pi@raspberrypi:/home/chatuser/html $ cd /etc/nginx/sites-e*
pi@raspberrypi:/etc/nginx/sites-enabled $ sudo ln -s ../sites-a*/hguchat.com hguchat.com
pi@raspberrypi:/etc/nginx/sites-enabled $ ls -al
total 8
drwxr-xr-x 2 root root 4096 Jun  8 03:49 .
drwxr-xr-x 8 root root 4096 May 30 09:51 ..
lrwxrwxrwx 1 root root   34 May 30 09:51 default -> /etc/nginx/sites-available/default
lrwxrwxrwx 1 root root   30 May 30 10:09 goodrpi.com -> ../sites-available/goodrpi.com
lrwxrwxrwx 1 root root   30 Jun  8 03:49 hguchat.com -> ../sites-available/hguchat.com
lrwxrwxrwx 1 root root   32 Jun  3 13:01 mybatflat.com -> ../sites-available/mybatflat.com
lrwxrwxrwx 1 root root   28 Jun  4 02:57 mywp2.com -> ../sites-available/mywp2.com
lrwxrwxrwx 1 root root   27 Jun  3 13:11 mywp.com -> ../sites-available/mywp.com
pi@raspberrypi:/etc/nginx/sites-enabled $ sudo nginx -t
nginx: [warn] conflicting server name "" on 0.0.0.0:80, ignored
nginx: the configuration file /etc/nginx/nginx.conf syntax is ok
nginx: configuration file /etc/nginx/nginx.conf test is successful
pi@raspberrypi:/etc/nginx/sites-enabled $ sudo service nginx restart
```

d. 웹사이트 테스트(PC)

e. 오픈소스 다운로드

cd /home/chatuser/html

sudo git clone https://github.com/jerry10004/Chat-Room

sudo mv Chat-* chat

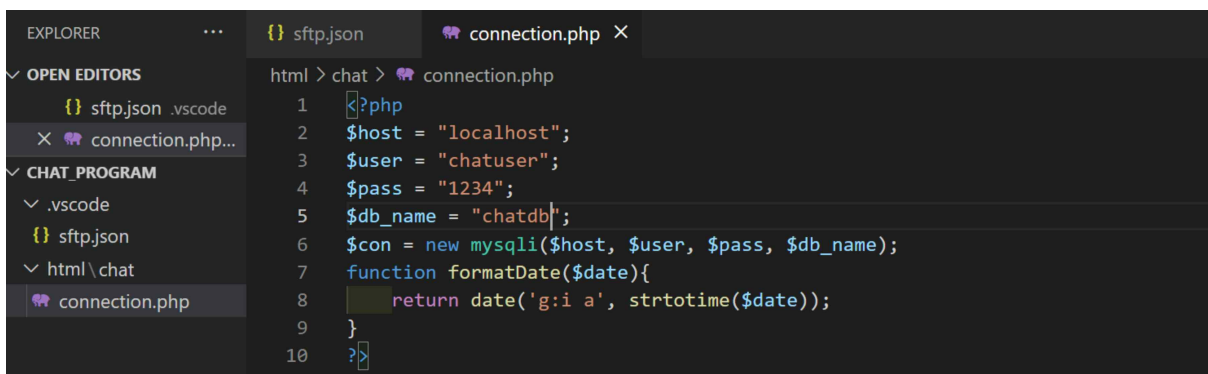sudo chown -R chatuser:www-data chat;

```
pi@raspberrypi:/etc/nginx/sites-enabled $ cd /home/chatuser/html
pi@raspberrypi:/home/chatuser/html $ ls
index.php  myadmin
pi@raspberrypi:/home/chatuser/html $ sudo git clone https://github.com/jerry10004/Chat-Room
Cloning into 'Chat-Room'...
remote: Enumerating objects: 28, done.
remote: Counting objects: 100% (1/1), done.
remote: Total 28 (delta 0), reused 0 (delta 0), pack-reused 27
Unpacking objects: 100% (28/28), done.
pi@raspberrypi:/home/chatuser/html $ ls
Chat-Room  index.php  myadmin
pi@raspberrypi:/home/chatuser/html $ sudo mv Chat-* chat
pi@raspberrypi:/home/chatuser/html $ sudo chown -R chatuser:www-data chat
pi@raspberrypi:/home/chatuser/html $ ls -al
total 16
drwxr-xr-x 3 chatuser www-data 4096 Jun  8 03:55 .
drwxr-xr-x 3 chatuser chatuser 4096 Jun  8 03:33 ..
drwxr-xr-x 7 chatuser www-data 4096 Jun  8 03:54 chat
-rw-r--r-- 1 chatuser www-data   42 Jun  8 03:46 index.php
lrwxrwxrwx 1 chatuser www-data   21 Jun  8 03:46 myadmin -> /usr/share/phpmyadmin
```

f. DB 연결정보 수정

```json
{
    "name": "My Server",
    "host": "192.168.0.18",
    "protocol": "sftp",
    "port": 22,
    "username": "chatuser",
    "uploadOnSave": true
}
```

```php
<?php
$host = "localhost";
$user = "chatuser";
$pass = "1234";
$db_name = "chatdb";
$con = new mysqli($host, $user, $pass, $db_name);
function formatDate($date){
    return date('g:i a', strtotime($date));
}
?>
```

g. 필요 테이블 생성

h. 웹사이트 접속 chat program 테스트

i. customizing 2가지 이상

[2. 서버 백업]

a. chat 소스와 DB를 백업하기 위해 필요한 과정 정리 및 Script 작성후 테스트

b. crontab을 사용하여 (본인이)정한 시간에 주기적으로 자동 백업 설정하기

1. 백업 대상 / 백업 주기 / 백업 위치 / 저장기간 계획

백업 대상: chatuser 계정 홈디렉토리

백업 주기: 매일 오전 6시

백업 위치: /backup 폴더

저장기간 계획: 백업본 10일 간 저장

2. 백업 디렉터리 생성 / 퍼미션 조정

```
root@raspberrypi:~# mkdir backup
root@raspberrypi:~# ls
backup
root@raspberrypi:~# chmod 700 backup
root@raspberrypi:~# ls -al
total 48
drwx------   3 root root  4096 Jun 12 07:12 .
drwxr-xr-x 19 root root  4096 Jun 12 07:10 ..
drwx------   2 root root  4096 Jun 12 07:12 backup
```

3. 백업 스크립트 작성

```
#!/bin/bash
CURDATE=`date +%Y%m%d$H%M%S`
SRC=/home/chatuser
TARDST=/backup/chatuser.$CURDATE.tar.gz
DBNAME=chatdb
DBDST=/backup/chatuser.'mysql'.$CURDATE.sql

# file backup
tar -zcvf $TARDST $SRC 1>/dev/null 2>/dev/null

# DB backup (mysql or mariadb)
mysqldump --extended-insert=FALSE -uroot -proot $DBNAME > $DBDST

# delete backup files
find /backup/ -type f -mtime +10 | sort | xargs rm -f
~
~
~
```

4. 백업 스크립트 테스트

```
root@raspberrypi:~# ./backup.sh
root@raspberrypi:~#
```

```
root@raspberrypi:/backup# ls -al
total 156
drwx------  2 root root   4096 Jun 12 07:22 .
drwxr-xr-x 19 root root   4096 Jun 12 07:10 ..
-rw-r--r--  1 root root 143755 Jun 12 07:22 chatuser.202106122234.tar.gz
-rw-r--r--  1 root root   2356 Jun 12 07:22 chatuser.mysql.202106122234.sql
```

5. Scheduler 설정

```
root@raspberrypi:~# date
Sat 12 Jun 07:28:59 BST 2021
root@raspberrypi:~# ln -sf /usr/share/zoneinfo/Asia/Seoul /etc/localtime
root@raspberrypi:~# date
Sat 12 Jun 15:29:26 KST 2021
```

```
#
# For more information see the manual pages of crontab(5) and cron(8)
#
# m h  dom mon dow   command
0 2 * * * /root/backup.sh 1>/dev/null 2>/dev/null
~
```

```
root@raspberrypi:~# ps -df | grep cron
root        1056   926  0 15:32 pts/0    00:00:00 grep cron
```

[3. 포트폴리오 제작]