Runbook of Cloud Application Development Exercise 3 (EC2)

1. Create a EC2 instance and get it’s IP address
2. Connect into it with ssh and paste these

```
mkdir PhpStormProjects
cd PhpStormProjects
sudo apt update -y
sudo apt-get remove -y nodejs npm
sudo apt-get autoremove -y
sudo apt-get update
sudo apt install -y ca-certificates curl gnupg unzip
curl -fsSL https://deb.nodesource.com/gpgkey/nodesource-repo.gpg.key | sudo gpg --dearmor -o /etc/apt/keyrings/nodesource.gpg
NODE_MAJOR=22
echo "deb [signed-by=/etc/apt/keyrings/nodesource.gpg] https://deb.nodesource.com/node_$NODE_MAJOR.x nodistro main" | sudo tee /etc/apt/sources.list.d/nodesource.list
sudo apt update -y
sudo apt install -y nodejs
sudo apt install -y npm
sudo apt install -y mysql-server
sudo apt install -y mysql-client-core-8.0
node -v
npm -v
wget -O CloudAppHW3.zip https://github.com/iambjlu/HTWG-Cloud-App-Dev-HW3/releases/download/1141022/CloudAppHW3.zip && unzip -o CloudAppHW3.zip -d CloudAppHW && rm CloudAppHW3.zip
sudo systemctl start mysql
sudo systemctl status mysql
sudo mysql
```

3. Paste these

```
CREATE DATABASE travel_app_db;
CREATE USER 'cloudapp_user'@'localhost' IDENTIFIED BY 'mypassword';
GRANT ALL PRIVILEGES ON travel_app_db.* TO 'cloudapp_user'@'localhost';
FLUSH PRIVILEGES;
EXIT;
```

4. Login to MySQL

```
mysql -u cloudapp_user -p
```

Enter Password

```
mypassword
```

5. Paste these

```
USE travel_app_db;
CREATE TABLE travellers (
    id INT AUTO_INCREMENT PRIMARY KEY,
    email VARCHAR(255) UNIQUE NOT NULL,
    name VARCHAR(255) NOT NULL
);
CREATE TABLE itineraries (
    id INT AUTO_INCREMENT PRIMARY KEY,
    traveller_id INT NOT NULL,
    title VARCHAR(255) NOT NULL,
    destination VARCHAR(255) NOT NULL,
    start_date DATE NOT NULL,
    short_description VARCHAR(80) NOT NULL,
    detail_description TEXT,
    FOREIGN KEY (traveller_id) REFERENCES travellers(id),
    end_date DATE NOT NULL
);
EXIT;
```

6. Edit ~/PhpStormProjects/CloudAppHW/frontend-vue/.env

```
nano /home/ubuntu/PhpStormProjects/CloudAppHW/frontend-vue/.env
```

7. Enter API IP and port like this

```
VITE_API_BASE_URL=http://35.174.153.47:3000
```

or Enter API CloudFront Origin or something just like this

```
VITE_API_BASE_URL=https://xxxxxxxxxxx.cloudfront.net
```

8. Install packages

```
cd ~/PhpStormProjects/CloudAppHW/backend-api
npm install express mysql2 cors dotenv


cd ~/PhpStormProjects/CloudAppHW/frontend-vue
npm install axios
```

9. Run server as sudo su

```
sudo su
```

10. Then paste

```
nohup bash -c 'cd /home/ubuntu/PhpStormProjects/CloudAppHW/backend-api &&
node server.js' >/tmp/backend.log 2>&1 &
nohup bash -c 'cd /home/ubuntu/PhpStormProjects/CloudAppHW/frontend-vue &&
npm run dev -- --host 0.0.0.0' >/tmp/frontend.log 2>&1 &
sudo systemctl start mysql;sudo systemctl status mysql
```

See Webpage in <Server IP>:5173 or its CloudFront Origin or something just like this.

11. (Still working on it) If wanted, create CloudFront Origin and set Security Group with safer policies

For example:

- Used Target Group, Application Load Balancer (ALB) , CloudFront
- Set Security Group to allow ALB only accept ALL Traffic from CloudFront
- Set Security Group to allow EC2 only accept ALL TCP from LB Security Group, SSH from Instance Connect
- Note:
  [CloudFront > Distributions > XXXXXX > Origin] must be set as [HTTP only]
  [CloudFront > Distributions > XXXXXX > Behaviors] must be set as [HTTP and HTTPS]
  Until now the CloudFront Page still have difficulty connect to MySQL to save trip details