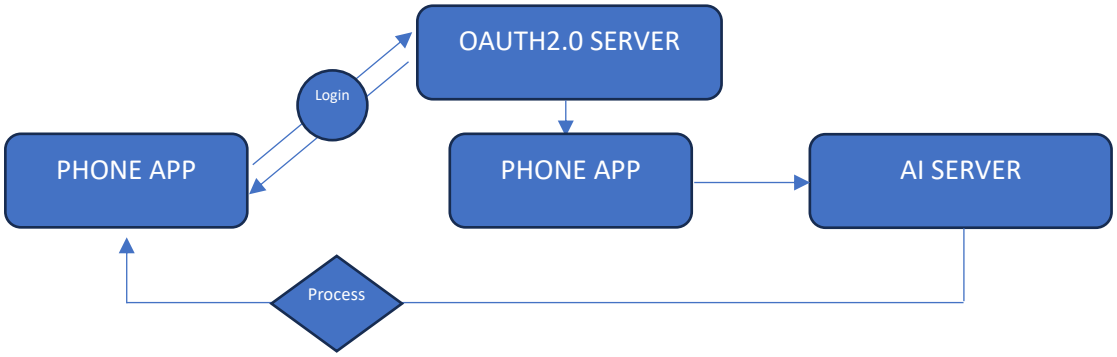
hydragroup.info@gmail.com

Contents



1 – Instruction install AI Enviroment

Install anaconda version 23.7.4

https://anaconda.org/conda-forge/conda/files?sort=time&sort_order=desc&version=23.7.4

Install python version 3.11.5

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```
(base) C:\Apache24\htdocs\VHost\hydra-cam0.ddns.net\API\bill_capture\ACCESS_PYTHON_API>conda --version
conda 23.7.4

(base) C:\Apache24\htdocs\VHost\hydra-cam0.ddns.net\API\bill_capture\ACCESS_PYTHON_API>python --version
Python 3.11.5
```

Access anaconda enviroment and install by pip these packages bellow

pip install easyocr

pip install torch torchvision torchaudio --index-url https://download.pytorch.org/whl/cu118

pip install numpy

pip install cv2

pip install imutils

pip install screeninfo

These packages (base64, sys, codecs, fileinput, json, pathlib, math, difflib are build-in/standard of Python

==========

If use NVIDIA RTX3060 12GB need install pytorch

pip install torch torchvision torchaudio --index-url https://download.pytorch.org/whl/cu118

If use other GPU, please check by:
Open cmd, type

1 – To check information of VGA card

nvidia-smi

2 – To check version of Cuda ToolKit

nvcc --version

If don't have NVIDIA driver, please go to this website and install suitable version

1 – NVIDIA Driver

https://www.nvidia.com/en-us/drivers/

2 – CUDA Toolkit

https://developer.nvidia.com/cuda-toolkit

3 – cuDNN (use for Tensorflow/Pytorch)

https://developer.nvidia.com/cudnn

To modify key value, please go to

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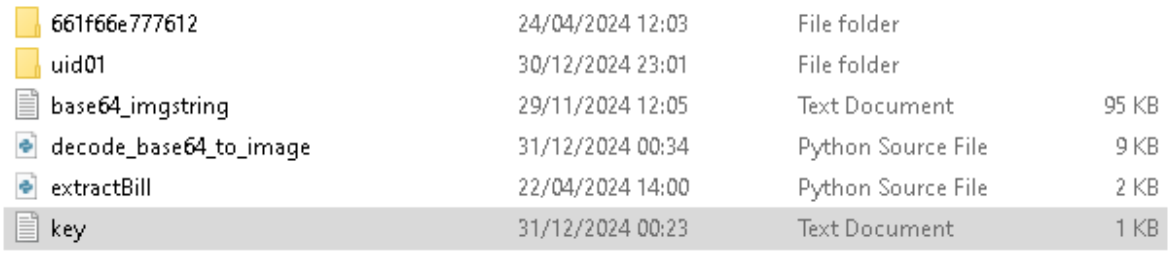
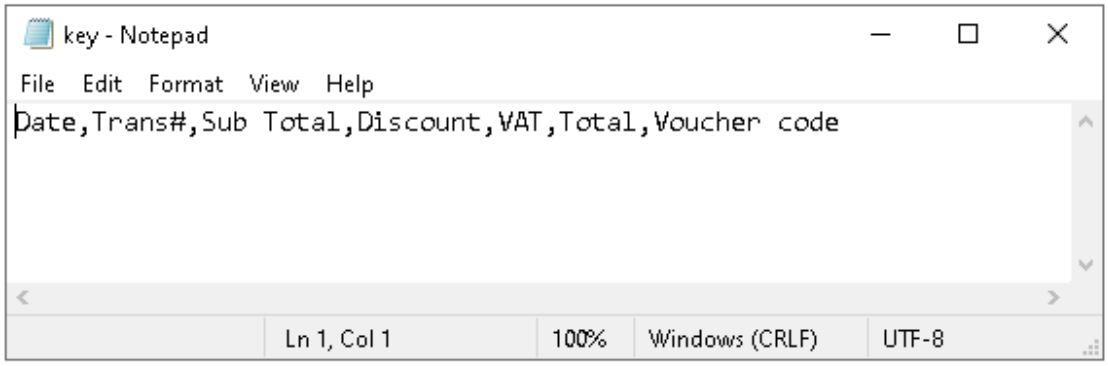
Go to this folder

~\htdocs\VHost\hydra-cam0.ddns.net\API\bill_capture\ACCESS_PYTHON_API\

Code will auto detect all string, but if you want to use any key, please list them to this array, or you can change in this file - key.txt





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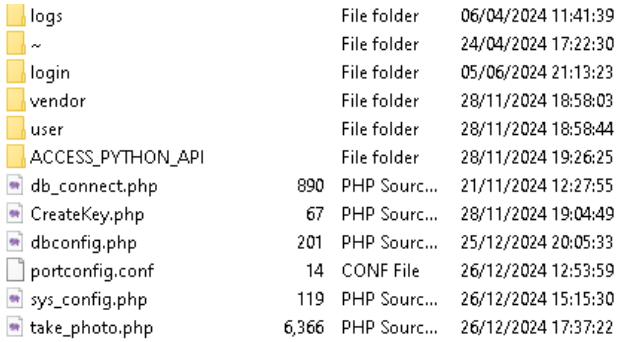
2 – Server AI server

2.1- Install Apache 2.4 / PHP , MySQL



Database:

dbconfig.php

User database of bill tracking app. It's used to login the bill tracking app.

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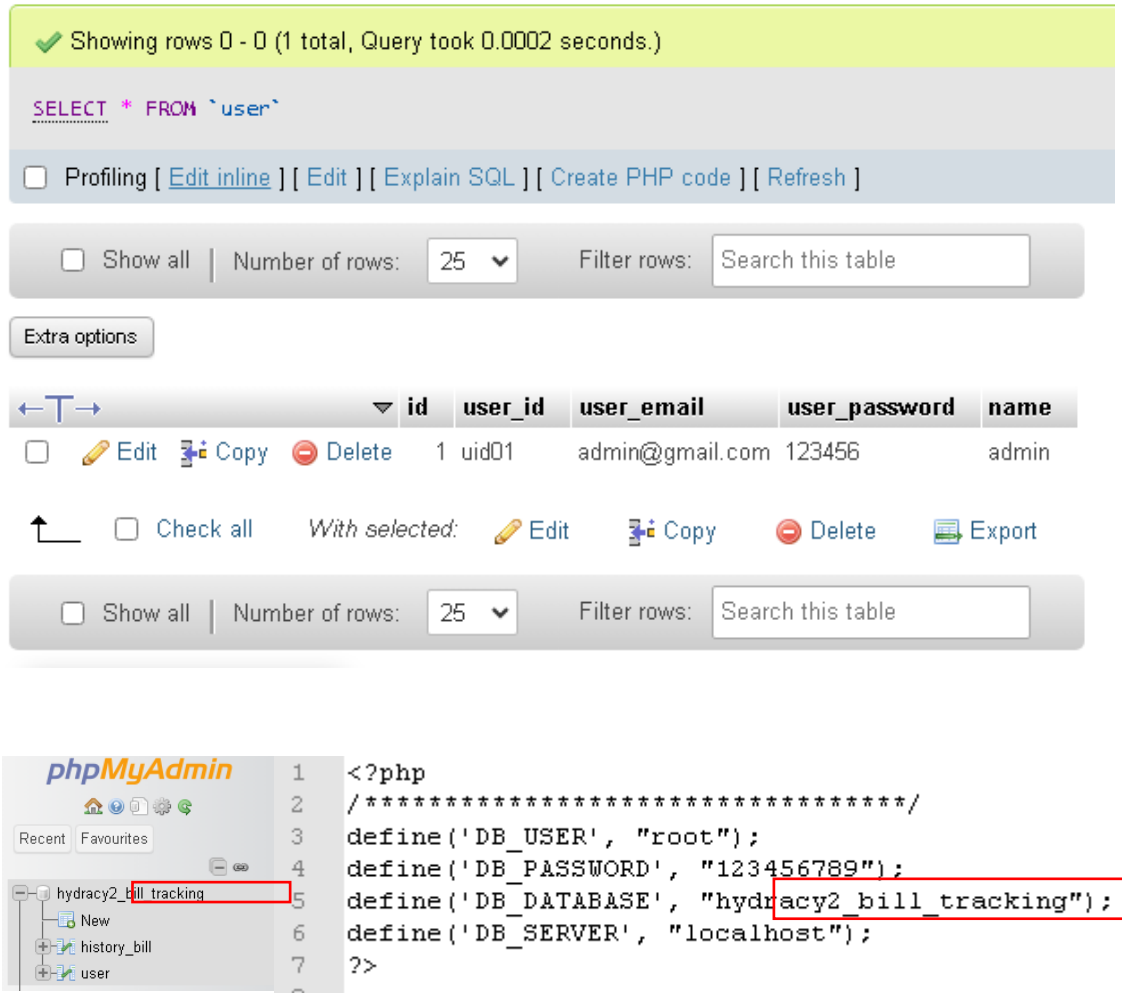
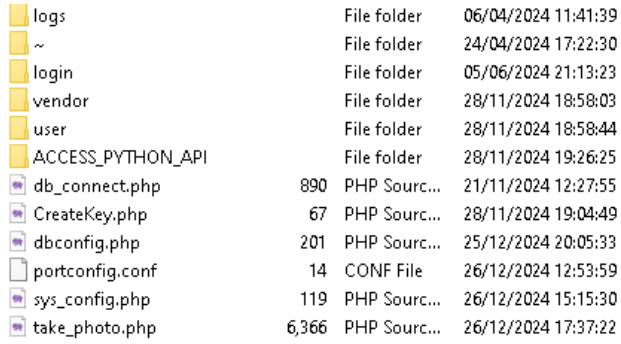


Figure 1. *user database table*

2.2 – API



Register.php: to create new user

login/login.php: login to the app and return access token

login/check_login.php: Check the access token is valid or not.

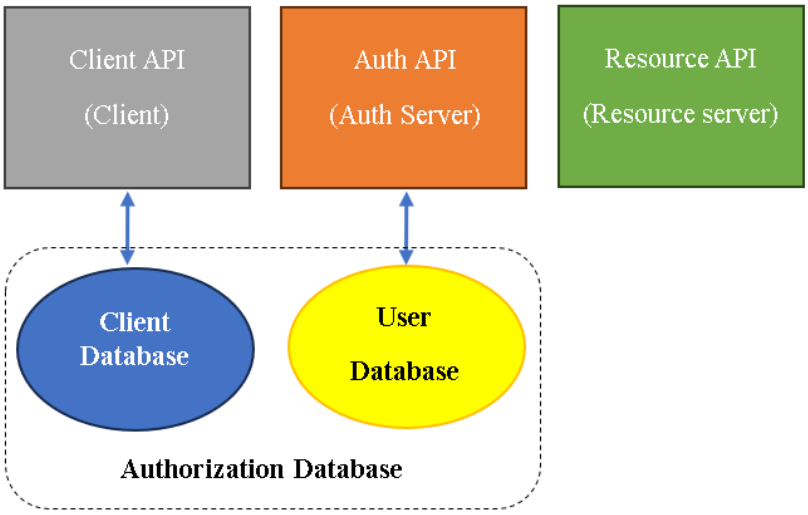
take_photo.php: upload the image image and call the python api to analyze and return the informations of bill.

At last, the take_photo.php write an event to logs/log.txt

==========

3 – Oauth 2.0 server

Install Apache 2.4 / PHP , MySQL



3.1- Install Apache 2.4 / PHP , MySQL

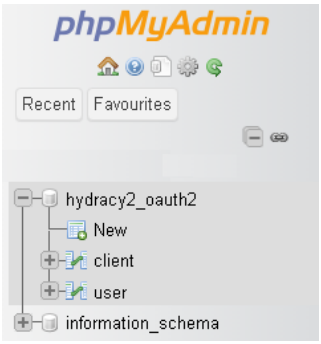


Figure 2. *Database construction of oauth2 server*

Oauth2.0 database include 2 table: user and client.

3.1.1- Client database (client table): contain the information of the client app that registered the Oauth service with Oauth server.

Setup 'client' table:

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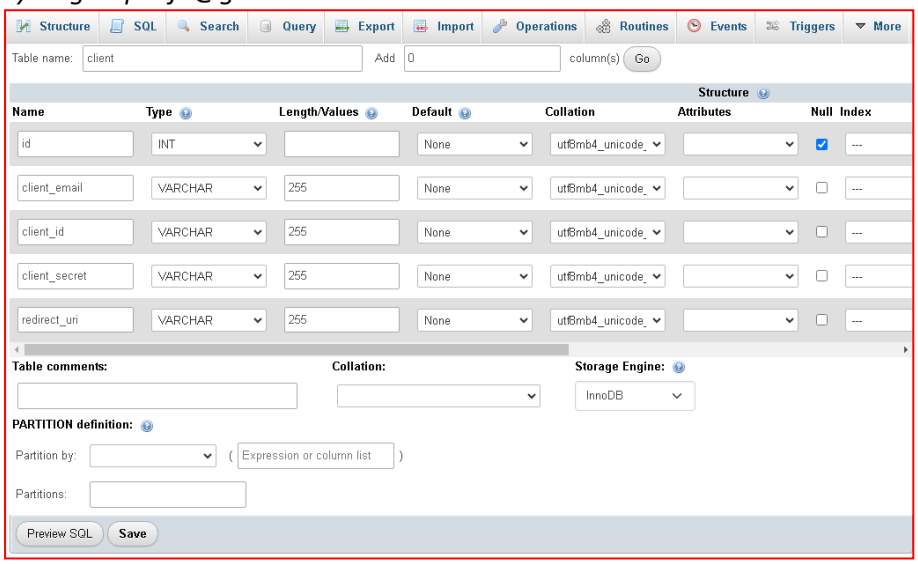


Figue 3. *Setup 'client' table*

The most important information are client_id, client_secret and redirect_url. They will be sent with O-authentication request.

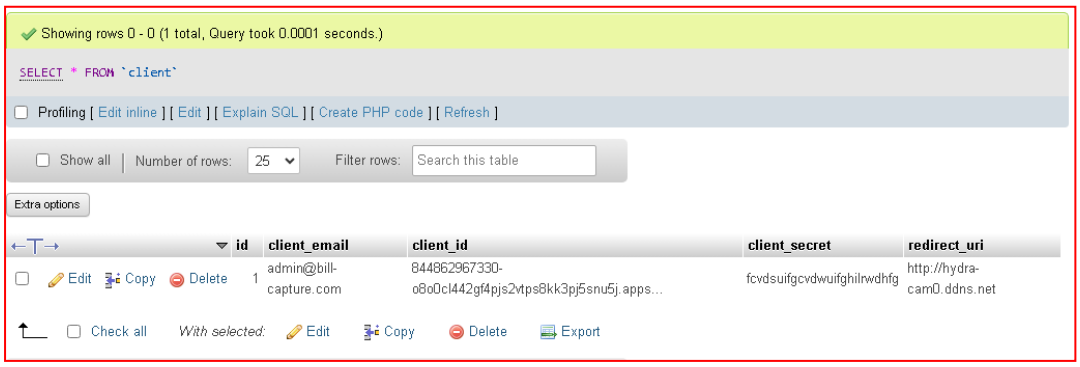
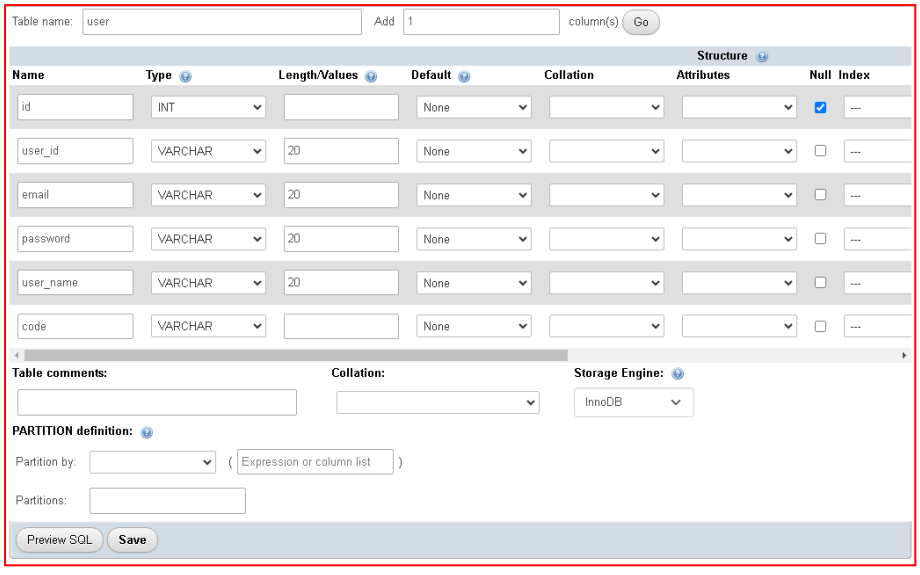


Figure 4. *Client informations.*

3.1.2- User database (user table): contain the resources of the user that the App want to access. The user will be authenticated with email and password in Authentication page.



Figue 5. *Setup 'user' table*

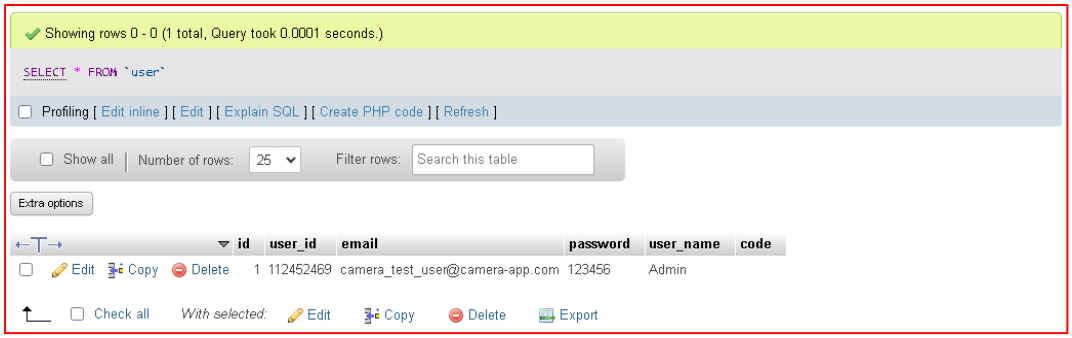


Figure 6. *User informations.*

3.2- O-auth 2.0 API

The O-auth2 server

Client API: Include the api that redirect the user to authentication server and handle the authentication result (authentication sode, access token).

Auth API: Include the api and UI for user login. It will return a return url with authorization code .

Resource API: Contain the api that's parse the access token.

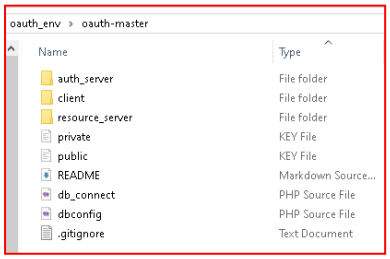


Figure 7. *oauth server api repository*

3.2.1 – Public and private keys

Public and private keys will be used to parse the access token. The authentication server use the public key to generate the access token. And prive key will be used to parse the access token in Resource server.

3.2.2- Encryption keys

Encryption keys is used to generate the authentication code. Public key, private key and Encryption key were generated following the link:
h*ttps://oauth2.thephpleague.com/installation/*

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3.2.3 - Client API (client repository)

Name	Size	Last Modified	Type	Permissions
vendor	188 bytes	Apr 23, 2024, 6:15 PM	httpd/unix-directory	0755
.env	501 bytes	Today, 5:07 PM	text/x-generic	0644
.gitignore	8 bytes	Apr 23, 2024, 6:15 PM	text/x-generic	0644
bootstrap.php	1.37 KB	Today, 2:19 PM	text/x-generic	0644
composer.json	102 bytes	Apr 23, 2024, 6:15 PM	text/x-generic	0644
composer.lock	35.53 KB	Apr 23, 2024, 6:15 PM	text/x-generic	0644
error_log	27.12 KB	Today, 6:24 PM	text/x-generic	0644
index.html	240 bytes	Apr 23, 2024, 6:15 PM	text/html	0644
init_oauth - Copy.php	287 bytes	Apr 23, 2024, 6:15 PM	text/x-generic	0644
init_oauth.php	2.03 KB	Today, 3:52 PM	text/x-generic	0644
parse_token.php	1.63 KB	Today, 6:24 PM	text/x-generic	0644
process_auth_code.php	1.39 KB	Today, 5:58 PM	text/x-generic	0644

Figure: client api repository

Init environment file (.env):

```
AUTHORIZATION_SERVER_AUTHORIZE_URL="https://hydra-cyborg.com/API/oauth-master/auth_server/authorize.php"
AUTHORIZATION_SERVER_ACCESS_TOKEN_URL="https://hydra-cyborg.com/API/oauth-master/auth_server/token.php"
RESOURCE_OWNER_URL="http://localhost:8012/resource_owner.php"
RESOURCE_SERVER_URL="http://localhost:8012/resource.php"
```

AUTHORIZATION_SERVER_AUTHORIZE_URL: **authorize.php**

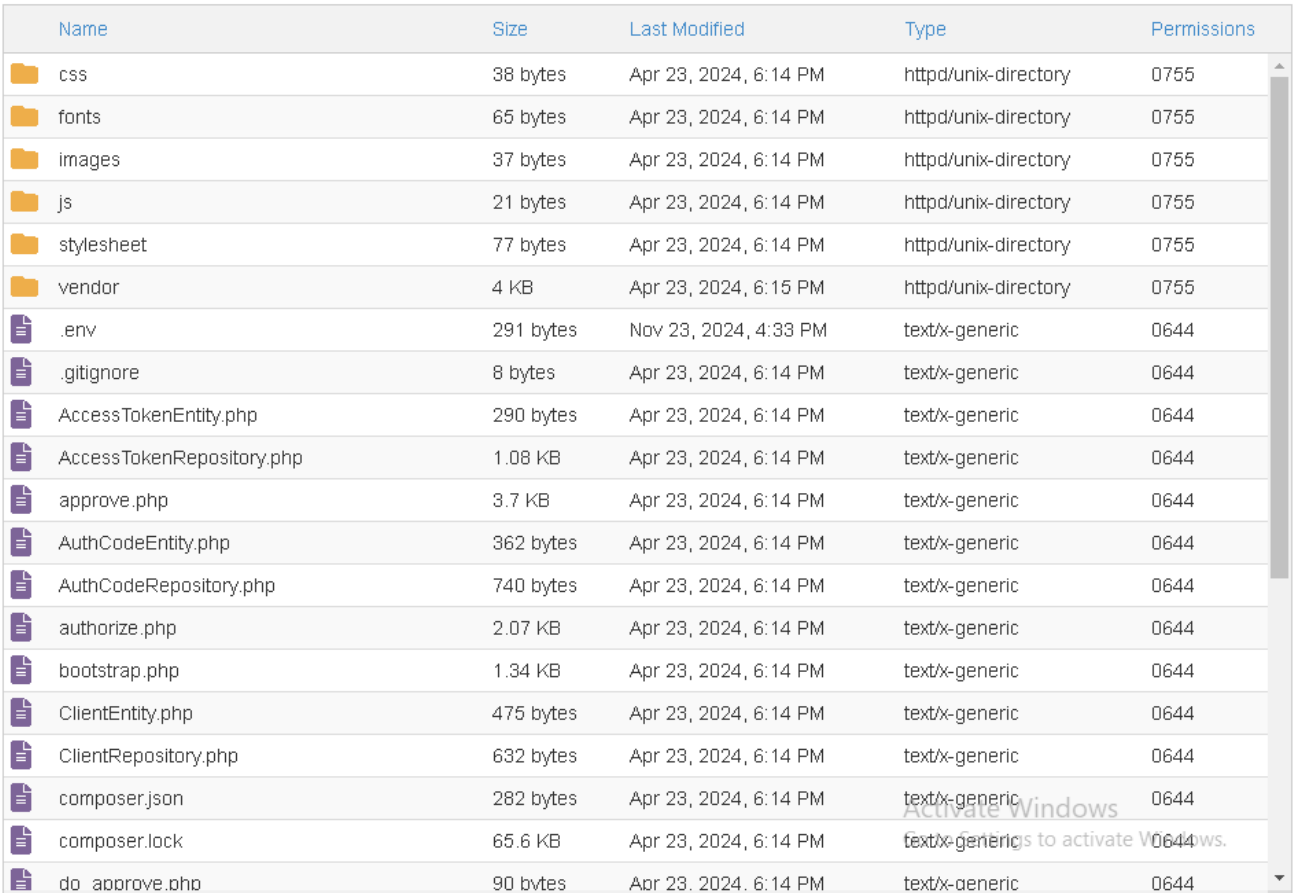
AUTHORIZATION_SERVER_ACCESS_TOKEN_URL: token.php.

RESOURCE_OWNER_URL: resource_owner.php

RESOURCE_SERVER_URL: resource.php

Nhiệm vụ của các api này sẽ được mô tả chi tiết trong phần III.

3.2.4 – Authentication sever API



Name	Size	Last Modified	Type	Permissions
css	38 bytes	Apr 23, 2024, 6:14 PM	httpd/unix-directory	0755
fonts	65 bytes	Apr 23, 2024, 6:14 PM	httpd/unix-directory	0755
images	37 bytes	Apr 23, 2024, 6:14 PM	httpd/unix-directory	0755
js	21 bytes	Apr 23, 2024, 6:14 PM	httpd/unix-directory	0755
stylesheet	77 bytes	Apr 23, 2024, 6:14 PM	httpd/unix-directory	0755
vendor	4 KB	Apr 23, 2024, 6:15 PM	httpd/unix-directory	0755
.env	291 bytes	Nov 23, 2024, 4:33 PM	text/x-generic	0644
.gitignore	8 bytes	Apr 23, 2024, 6:14 PM	text/x-generic	0644
AccessTokenEntity.php	290 bytes	Apr 23, 2024, 6:14 PM	text/x-generic	0644
AccessTokenRepository.php	1.08 KB	Apr 23, 2024, 6:14 PM	text/x-generic	0644
approve.php	3.7 KB	Apr 23, 2024, 6:14 PM	text/x-generic	0644
AuthCodeEntity.php	362 bytes	Apr 23, 2024, 6:14 PM	text/x-generic	0644
AuthCodeRepository.php	740 bytes	Apr 23, 2024, 6:14 PM	text/x-generic	0644
authorize.php	2.07 KB	Apr 23, 2024, 6:14 PM	text/x-generic	0644
bootstrap.php	1.34 KB	Apr 23, 2024, 6:14 PM	text/x-generic	0644
ClientEntity.php	475 bytes	Apr 23, 2024, 6:14 PM	text/x-generic	0644
ClientRepository.php	632 bytes	Apr 23, 2024, 6:14 PM	text/x-generic	0644
composer.json	282 bytes	Apr 23, 2024, 6:14 PM	text/x-generic	0644
composer.lock	65.6 KB	Apr 23, 2024, 6:14 PM	text/x-generic	0644
do_approve.php	90 bytes	Apr 23, 2024, 6:14 PM	text/x-generic	0644

Init environment file (.env):

```
RESOURCE_SERVER_LOGIN_URL="https://hydra-cyborg.com/API/oauth-master/auth_server/login.php"
RESOURCE_SERVER_APPROVE_URL="https://hydra-cyborg.com/API/oauth-master/auth_server/approve.php"
```

Figure: *auth_server/.env*

Using encryption key:

Use the encryption key that's genetared in 3.3.2 and assign to $encryptionKey in auth_server/bootstrap.php.

The auth_server/authorize.php enpoint will redirect the user to login and approve to use the resource.

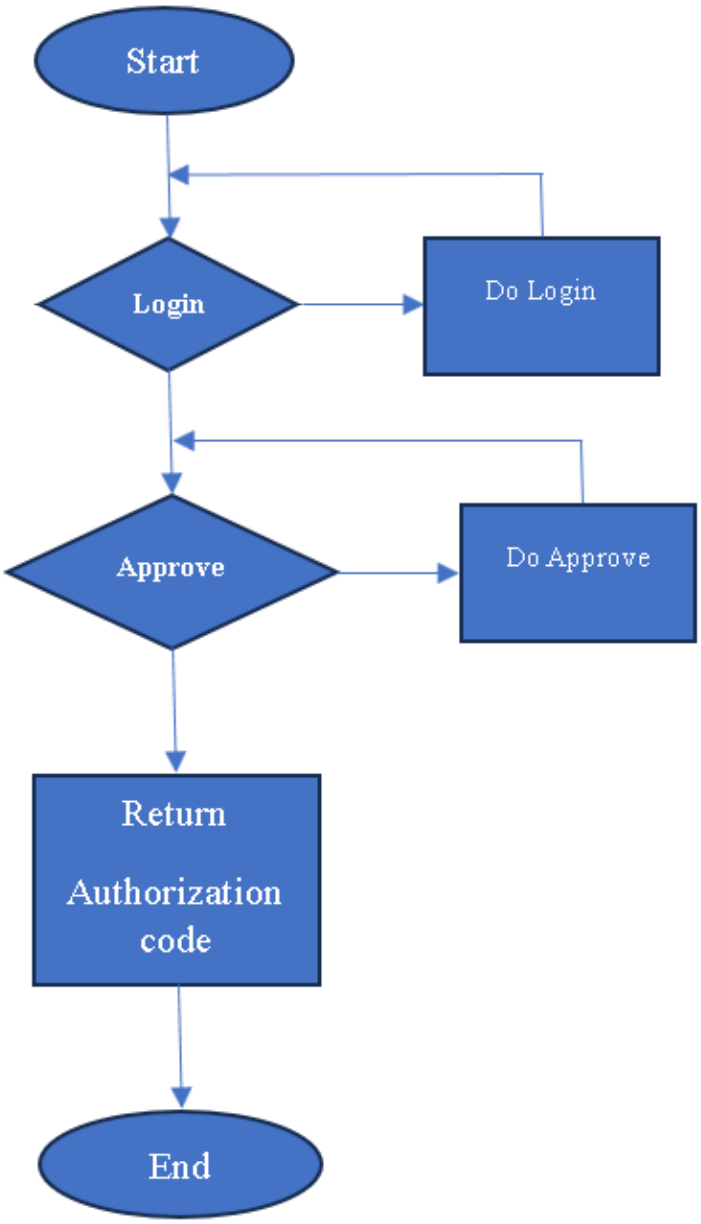


Figure 8. *Authorization proccess in authentication server*

3.2.5 – Resource sever API

After install client api and auth api, go to oauth-master folder, open command promp and run 'php -S localhost:8012 -t resource_server' command

4 – Demo with Phone App

Phone Application Made by Unity version 2022.3.20f1

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Can run both on Android and iOs (Current version designed for Android)

Application don't aprrove sign-up for new user

The registered account will be created from Oauth2.0 server

Username: admin@gmail.com
Pass: 123456