Secure File Sharing System

Internship Title:

Secure File Sharing System using Python Flask framework, AES 256 GCM Encryption and HTML.

Prepared by: VIJAY S R

Date : 09/11/2025

Programme: Future Interns/ Cyber securiy

Platform Used :-

Python (latest version for windows 10)

Visual Studio Code (VS Code)

Setup Steps:

We are going to do this project using windows 10 pro...First you should install python and VS Code into your system. Next go and download my secure file sharing system resource from below link

https://github.com/srvijaycybersec-hue/FUTURE_CS_03.git

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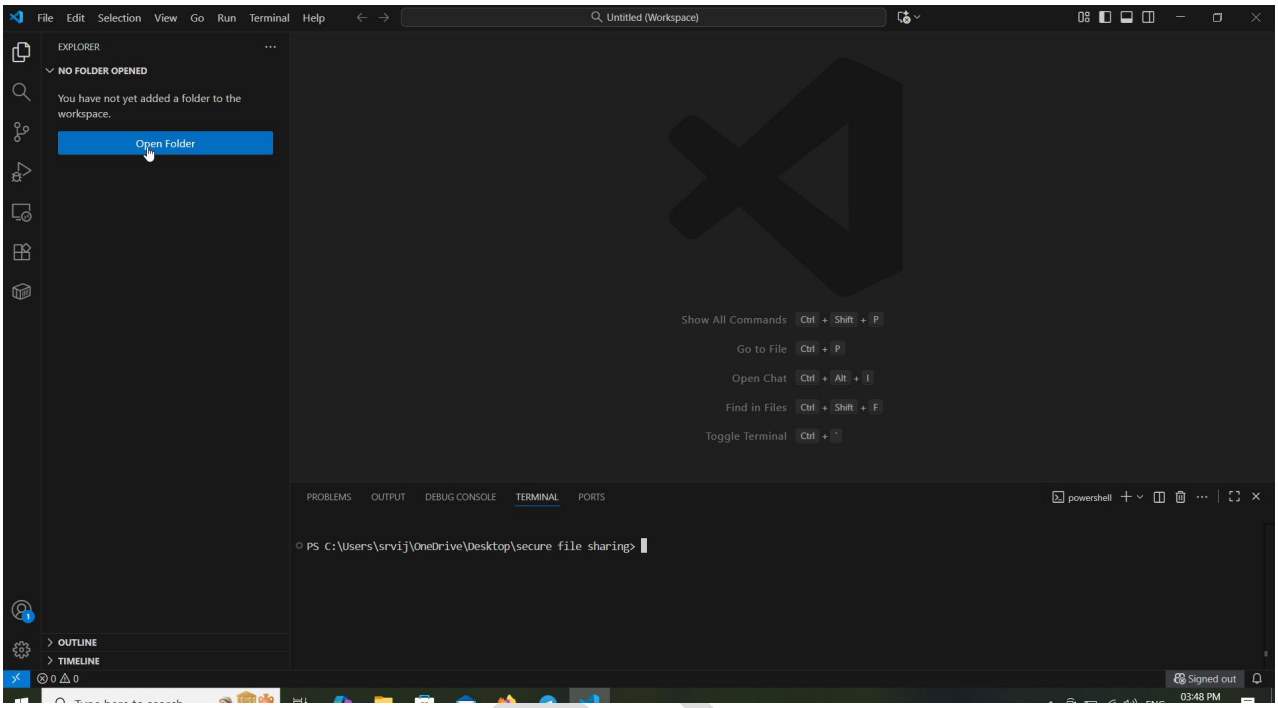
After download, you should open your VS Code tool, choose open folder option, choose the downloaded secure file sharing system folder.



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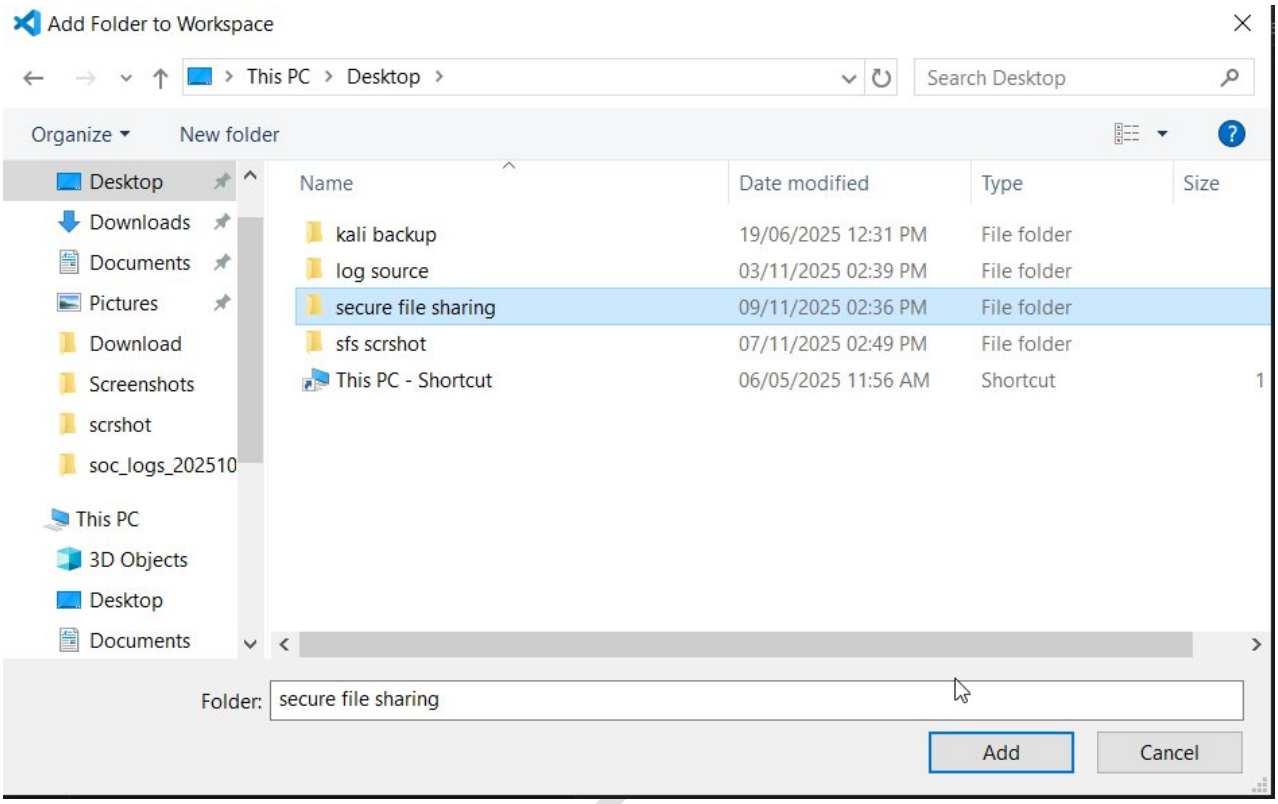

Then it will shows some files like app.py, encryption_utils.py and templates folder, files.html and upload.html etc...

Don’t do any modification, deletion on that files. Open VS Code terminal and type the following command

```
$key = -join ((1..32) | ForEach-Object { "{0:X2}" -f (Get-Random -Maximum 256) })
```

```
$key
```

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If you use linux OS, use the following command

```
python - <<'PY'
import os, sys
print(os.urandom(32).hex())
PY
```

It will generate a 256 bit (32 digit) encryption key. Copy that key in somewhere and type the following command in VS Code terminal.

```
setx FILE_ENCRYPTION_KEY "paste_your_32_hex_key_here"
setx FLASK_SECRET "random_flask_secret_here"
```

Replace the 32 digit encryption key into the double quotes of the command.

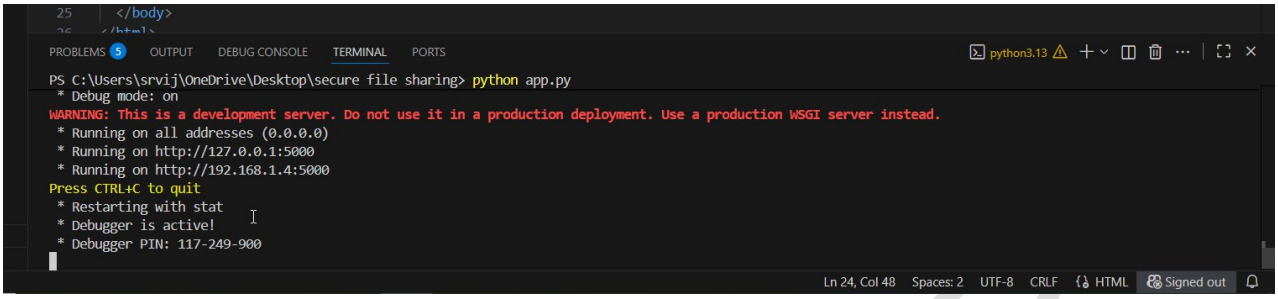
If you use linux setting up the key using following command

```
export FILE_ENCRYPTION_KEY="paste_your_64_hex_key_here"
export FLASK_SECRET="random_flask_secret_here"
```

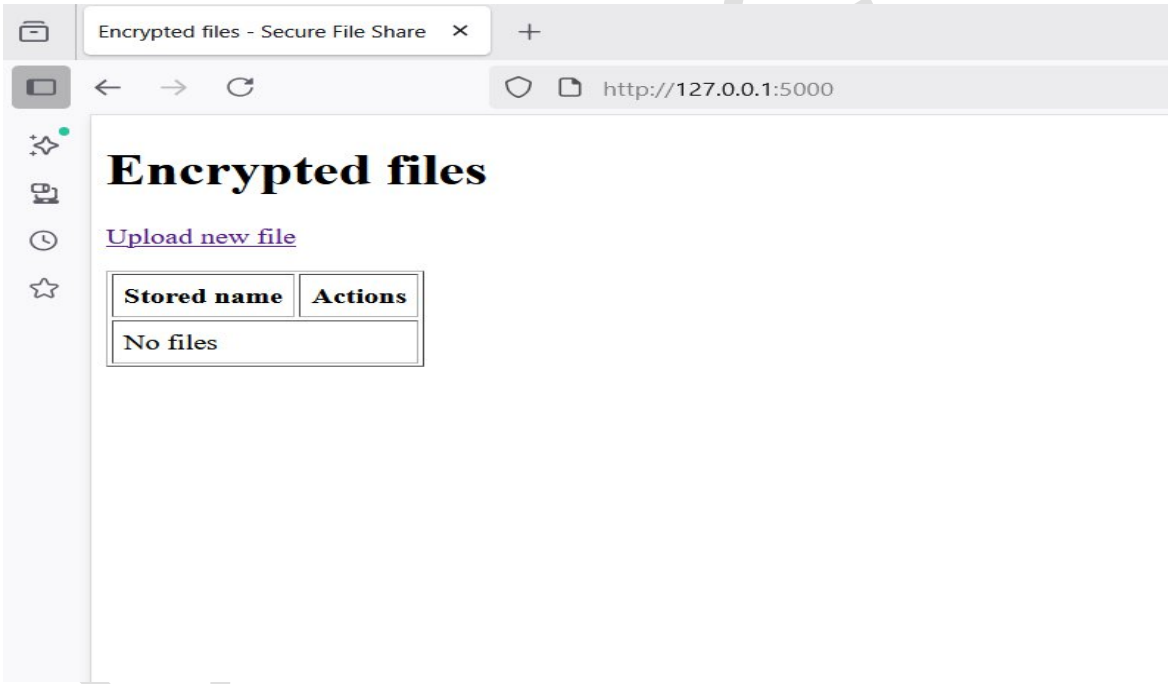
We are successfully generated and set the encryption key with VS Code terminal. This is temporary only. Each and everytime we should generate and set the key.

Next step is run the app.py file with following command

python app.py



Now app.py run as a local web service for secure file sharing system. Go to your browser and type http://localhost:5000 or http://127.0.0.1:5000



Page will display like this and click Upload new file option.Upload any file like documents, PDF, jpg etc...

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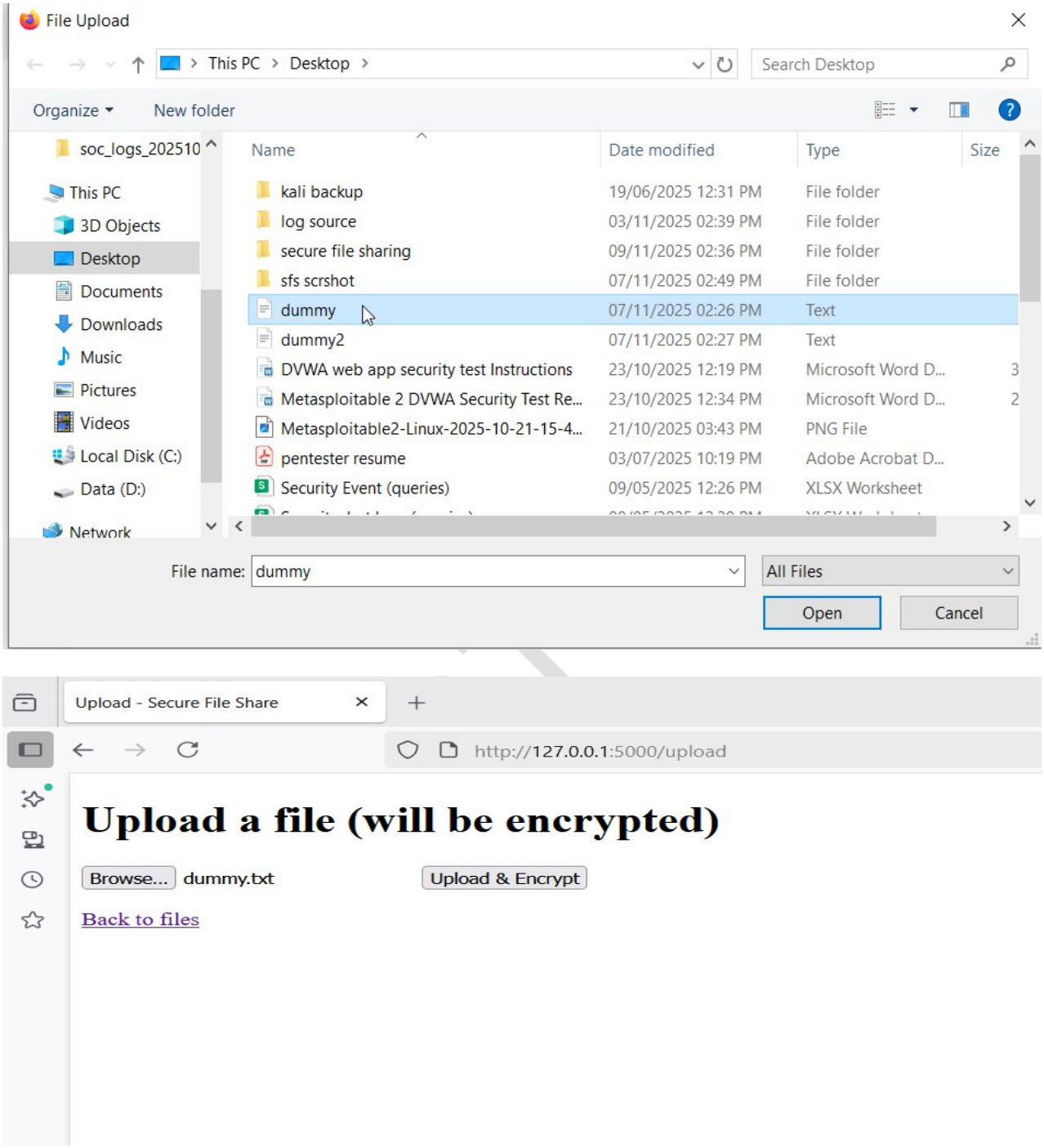
I am going to show a dummy.txt file upload.



After select the file, click Upload & Encrypt option on the webpage.

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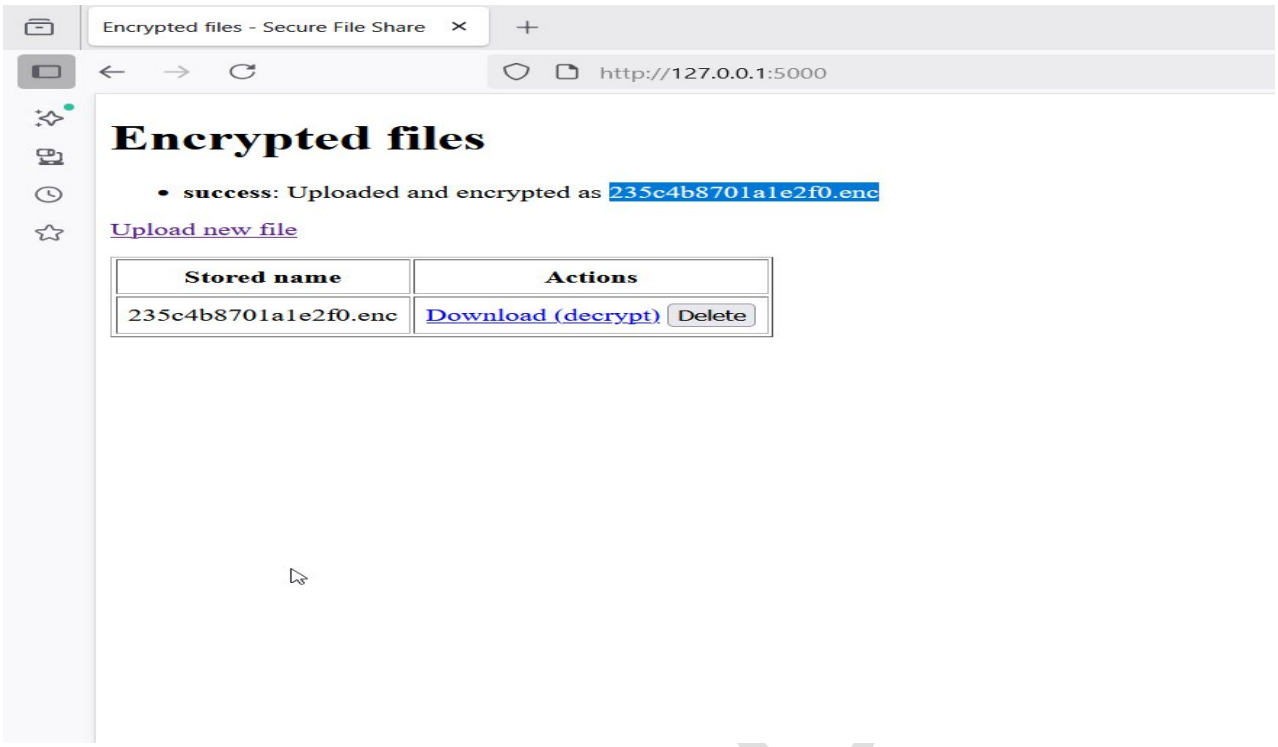
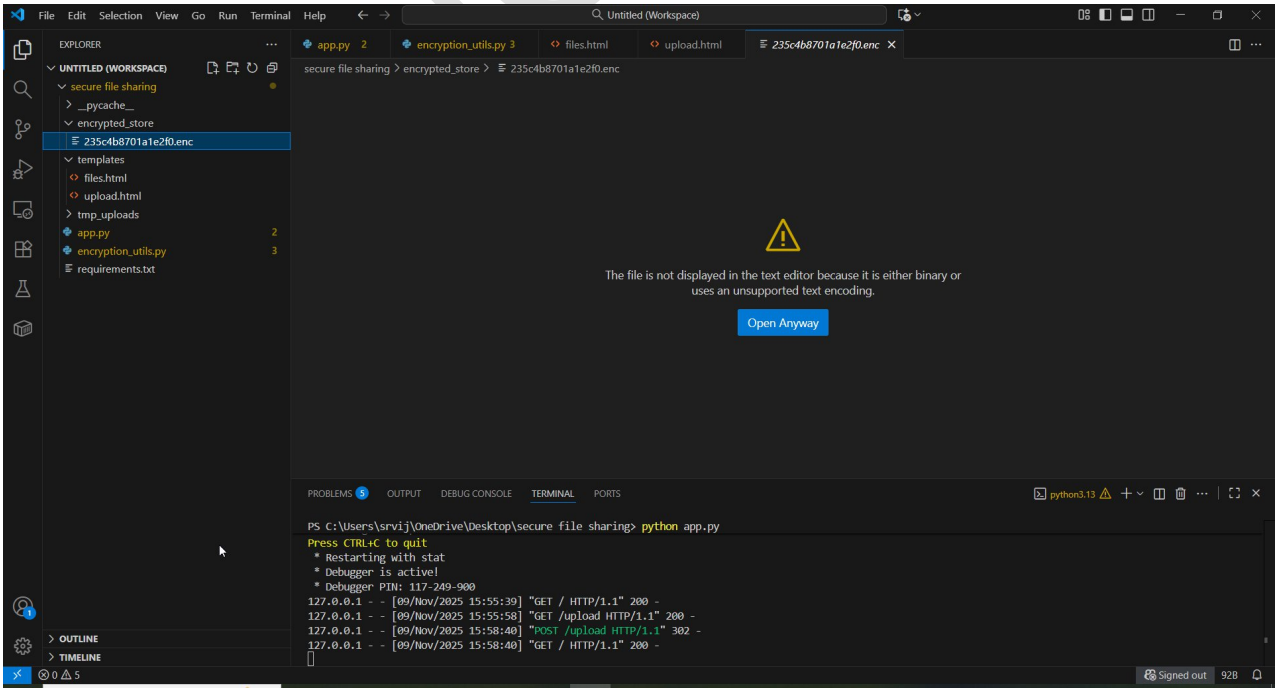


That uploaded file encrypted and encrypted name shows there. We could check that file in our encrypted_store folder in our VS Code project.



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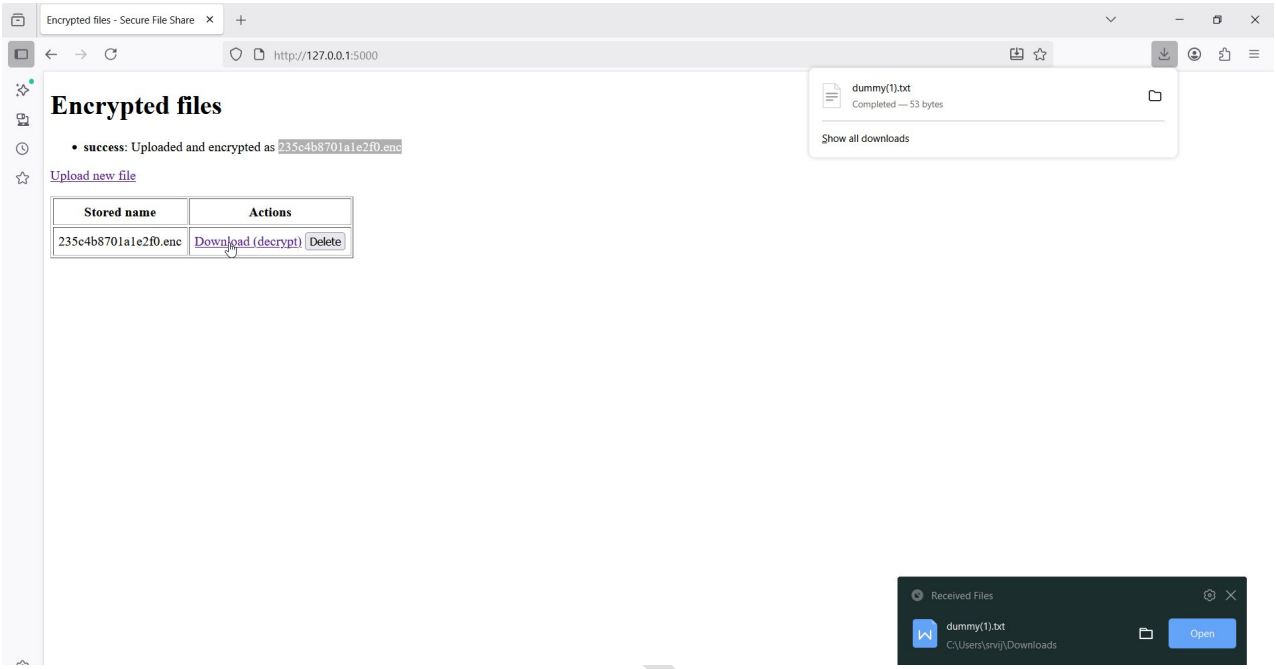
Our uploaded file encrypted and stored successfully. Next download that file with decryption. Just click Download option on the webpage



After click download option, file automatically decrypt and download on your webpage.

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