WebX CA
Pre-Requisites : TempShare

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Introduction:

TempShare is a local file sharing web-app that is built using Python Flask. This web-app does not need global internet access and primarily works within local networks, such as multiple devices connected to a router or a mobile hot-spot, neither of which need to have WAN.
The app, when started on a host machine, lets other users connect to the session using a QR code, and alternatively, a link. Once connected, the users can upload files to the session and download files that have been uploaded to the session. The users can also delete files from the session for security. For efficiency and security, the app deletes all files once a session is over (all users disconnected from the session), and new sessions always start fresh.

System Requirements

1. Hardware Requirements:

- **Processor:** Any 64-bit X86 CPU with atleast 2 cores running at at least 1 GHz

- **RAM:** 4 Gigabytes or higher

- **Storage:** 10 Gigabytes or more free (For everything used to build the project as well as the project itself)

- **Network:** Any device that can behave like a router (Internet plan/package not needed)

2. Software Requirements:

- **Operating System:** Any OS that supports Python, JS, HTML and CSS (Linux, Windows, MacOS, iOS, Chrome OS, Android and Kindle OS)

- **Code Editor:** Any IDE that can interpret or compile Python code (VSCode and IDLE)

- **Version Control:** Any version of Git higher than 2.0.0

Technology Stack used in this project :

Layer	Technology
Frontend	JavaScript
Backend	Flask (Python 3.x)
Templates	Flask and HTML
Styling	CSS and Google Material Icons
APIs	JS WebSockets

Setup Instructions :

(If using a Linux distribution, update your package manager's package cache before installing the required software, to get the latest versions of all required software)

- **Python 3.x :** On Ubuntu, and other Linux distributions, install the latest version of Python (python3) using the native package manager (APT on Ubuntu, and DNF or Yum on Fedora/RHEL).

- **Virtual environment :** To avoid compatibility issues or conflict between multiple Python installations, install and setup a virtual environment for Python and then install all dependencies inside the virtual environment. Install Venv for Python (python3-venv) using the native package manager (APT on Ubuntu). Then, create a virtual environment using 'python3 –m venv venv' and activate it using 'source venv/bin/activate', to deactivate it, use 'deactivate'.

- **Python package installer (pip) :** Install pip (python3-pip) using the native package manager (APT on Ubuntu) inside the virtual environment.

- **Other project dependencies :** Use pip to install all other project dependencies inside the virtual environment, such as Pillow and QRCode for the QR code functionality, Flask for the backend web framework, WebSockets and Flask-SocketIO for real-time updates and file sharing.
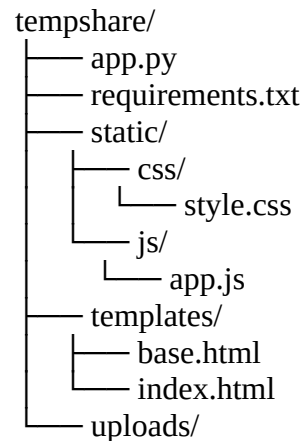
Project requirements : This project has the following dependencies other than Python,

Flask==3.0.2
qrcode==7.4.2
Pillow==10.2.0
flask-socketio==5.3.6
python-engineio==4.9.0
python-socketio==5.11.1

Running the project :

Once the virtual environment is setup and all project files have been downloaded and installed, run the Python code from the root directory using (python3 app.py). The project will start running at the port 5000 of the host machine.

Project file structure : The file and directory structure of this project is as follows :

```
tempshare/
├── app.py
├── requirements.txt
├── static/
│   ├── css/
│   │   └── style.css
│   └── js/
│       └── app.js
├── templates/
│   ├── base.html
│   └── index.html
└── uploads/
```

Project features :

- Real-time file sharing within local network
- Material Design UI
- QR code generation for easy sharing
- File upload with extension validation
- Real-time updates using WebSocket
- Temporary file storage
- Download functionality for all users
- Share via link or QR code

Conclusion :
By completing the above installations and setup, your system will be fully equipped to run TempShare. Now you can share files easily, without needing cables and internet access.