

Personal Cloud: A Better Way to Store Files

Access Files Stored at Home From the Internet



1. Introduction

Cloud storage is like a hard drive you can access over the internet. One example is Google Drive. The purpose of the Personal Cloud is to:

- Allow larger cloud storage for less money
- Better security for cloud files

The Personal Cloud allows users to store as much data as they want, without the yearly subscription fee from other cloud options. The Personal Cloud also gives the users management of the security of their files.

The Personal Cloud implementation is in the “Materials” and “Methods” sections. The final outcome of the Personal Cloud is in the “Results” section.

2. Materials

The materials my project uses are:

- Raspberry Pi (Figure 1)
- Device with internet (Figure 2)
- Solid state drive (Figure 3)

A Raspberry Pi is a small computer. My project uses the Raspberry Pi to manage the personal cloud system.

My project uses any device with internet to access cloud files.

My project uses a solid state drive (SSD) to store cloud files.



Figure 1 Raspberry Pi - Server



Figure 2 Computer - Interface



Figure 3 SSD - Storage

3. Methods

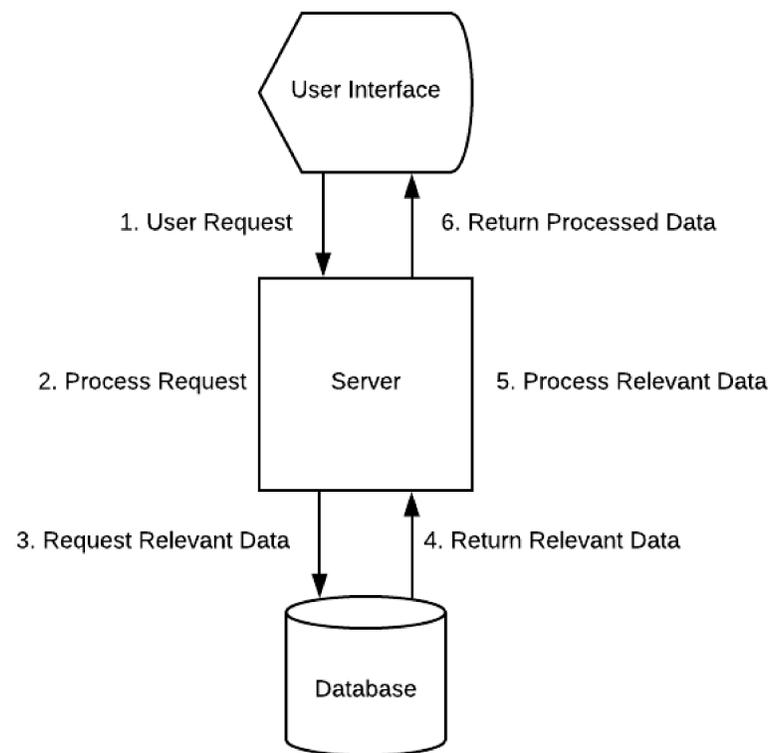


Figure 4 Method or approach to build the personal cloud

My method is a software solution that allows anyone to download the Personal Cloud onto their computer. The materials listed in the previous section is what someone would need to use the Personal Cloud. The software is organized as follows:

- User Interface: how the user interacts with the Personal Cloud
- Server: manages user interactions
- Database: file system for the server to store files

The user interface is accessed through a web browser (Google Chrome or Microsoft Edge) and allows the user to open the Personal Cloud.

The server is downloaded and installed on the Raspberry Pi or another computer. The server will manage any interaction the user has with the Personal Cloud.

The database is built by the server when the server is installed. The database will reside in a SSD or any other storage device chosen by the user during server installation.

To see how the user interface, server, and database interact, refer to Figure 4.

4. Results

The user page is given in Figure 5. The following features are currently functioning:

- Simple login page
- Page navigation
- Help page
- Basic user page
- Download pictures

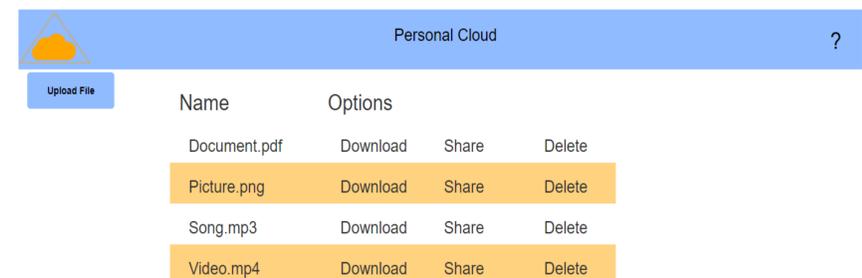


Figure 5 User interface

5. Conclusions

This project has given me the opportunity to enhance my skills as a developer. A few of these skills are:

- Building a web application from scratch
- React and C#
- Self managing a project
- Setting goals and making plans
- Documenting a project

Moving forward I plan on finishing the project. Features planned for future development:

- Downloading/uploading all file types
- Make the login page secure
- Run the application over the web
- Make the application available in the app store

In conclusion, I am a better developer because of working on this project.