Project Title: Personal File Sharing Service

Team Members:

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We will not be sharing this project between COEN241 and another class.

Main Goals

The main goal of our application is to create a new application from scratch, and a project that would be useful for us personally, meeting a need that we don't see in common services provided, whether that is for security, privacy, or usability concerns. The purpose of our application will be to create a functional personal file sharing service that can be used to back up data and easily share files between devices. The project will be successful if we develop an application that runs on all of the technologies we specify and is able to handle multiple users interacting with the application to perform file upload, download, and creation/deletion all at once.

Motivation

With ample work, and many devices, it is not uncommon to have many different devices, with different files. With a personal cloud file service, many devices can share a common repository of file storage. Although there are currently cloud options like Google Drive, DropBox and Microsoft's OneDrive, all these services have limited storage space and, depending on the amount of storage, an expensive monthly cost. With a personal cloud option through Google, we only pay for the storage, and access we need. This can be particularly helpful if one wants to regularly share files with many colleagues or family members so there is only one regular charge for the public cloud, without managing hardware.

Technologies

- Google Cloud Platform
- Docker
- Kubernetes
- Python, to handle requests

System Architecture

The technologies that we will be using are Google Cloud Platform to host our project on a public cloud, Flask for Python as a microframework, and Docker/Kubernetes, with two containers. One container will manage data and the other will handle user requests. Finally, there will be a client app to send requests for data. The containers will be able to communicate over the network bridge with Docker.

- The container to manage user requests, will be per user as to provide fair, and quick access to raw data.
- The container, or VM, to store data will be in GCP's storage application which will be accessible to individual users
- We will have three servers with automated scripts.

Task Division

We have a team of two people, so we will have to split the work evenly based on personal interests and end goals for this class.