

# CS183 Project: Backup to Google Drive

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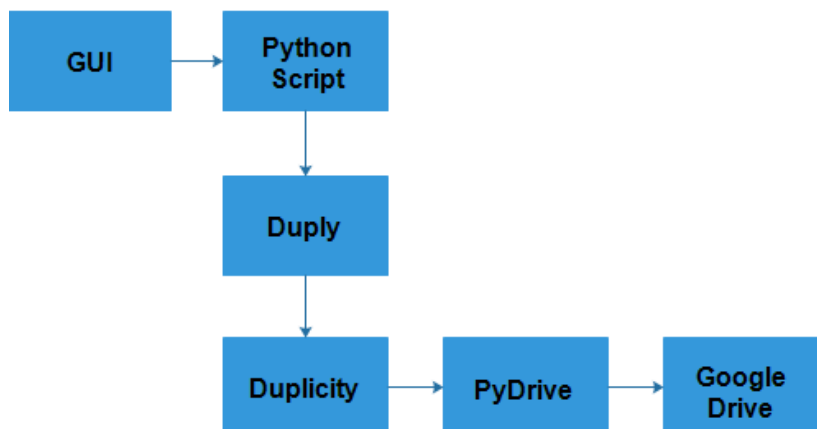
## Problem Description:

Because data is the heart of the enterprise, it's crucial for you to protect it. And to protect your organization's data, you need to implement a data backup and recovery plan. Backing up files can protect against accidental loss of user data, database corruption, hardware failures, and even natural disasters. It's your job as an administrator to make sure that backups are performed and that backup tapes are stored in a secure location.

In this project, we have created simple GUI which automates the long and error prone process of setting up and usage. Our GUI displays progress and allow user to change options with relative ease. The GUI ensures the correct procedure is followed and display errors in a human readable form. Backup will be done with the utility 'Duplicity', and data will be back up to Google Drive.

## Project Architecture:

The workflow of the architecture is as follows:



The GUI is written in Python. The GUI calls a custom bash utility that creates profiles, communicates with Duply, and maintain the configuration of Backups and of Google Authentication. Duply interacts with Duplicity to streamline the options and commands provided by Duplicity. Duplicity utilize PyDrive to transmit data back and forth with Google Drive and maintains a backup hierarchy that allows for incremental backup.

## Project Features:

### Duplicity

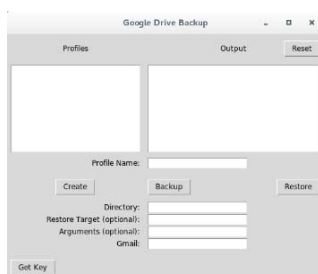
Duplicity is python based shell application that provides encrypted, digitally signed, versioned, remote backup of files. Duplicity devises a scheme where the first archive is a complete (full) backup, and subsequent (incremental) backups. It does this using GnuPG, librsync, tar, and rdiff. To transmit data to the backup repository it can use SSH/SCP/SFTP, local file access, rsync, FTP, Amazon S3, Google Cloud Storage, Rackspace Cloud Files.

Duplicity features:

1. Easy to use command line utility
2. Encrypted and signed archives
3. Bandwidth and space efficient
4. Standard file format
5. Choice of file format

### GUI

Our GUI provides a simplify experience to the user, while maintaining the security of authentication and the integrity of incremental backups.



The GUI lists all profiles the user have created, and allows users to quickly understand the progress with a simplified messaging system. The buttons in the GUI allows users to click on the desired action and quickly fill in the options

without researching the format and options needed to backup correctly. The GUI also streamlined the authentication process with Google Drive, and minimized the encryption needed for Google to allow access to Google Drive.