Program Specification

# The Break Down

The program is made up of three main methods (storeFiles, removeOldFiles, and testparamters). Each of the methods have perform certain checks to ensure that the program runs correctly.

This first method, testparamters, is responsible for checking if the command line arguments given are valid (if any were given). If no command line arguments are given, a default bucket will be created called css490program3defaultbucketname. If this bucket already exists, the program will use that bucket if the user has permissions. If the user does not have permissions. Then it will exit and prompt the user to use a bucket they already created. If the user enters a bucket name, it checks if that bucket is accessible by the user. If it is, it will use that bucket. If it is not, it exits the program with a print of what went wrong. In addition, this method checks whether the given path is valid. If no path is given, it uses the directory that the code/exe is in.

The next method, storeFiles, is responsible for storing files in the bucket. This method will retain the file structure and will only upload files that have been modified in the directory (Old or new). This method works by recursively calling itself each time it enters a new directory. Once in a directory, it checks all the files’ MD5 hashes to the ones the hashes in the bucket (if they exist). If they do not match, or they don’t exist, the file will be uploaded to the cloud. After scanning all the files, it goes through all the sub directories and repeats the process.

The last method, removeOldFiles, is responsible for removing all the files that are in the bucket but not in the directory being backed up. This method does this by getting all the file keys in the bucket and seeing if they exist in the directory. If they do not, they are removed.

After all three methods have run, it will print the results of how many files were removed, updated, and not changed.

# How it was tested

This program was tested by creating a directory with a 6-deep directory. In each subdirectory, some contained files while others did not. I would run the back up once and upload all the files and directories. Then I would modify the directory by removing and changing some of the files and re-running the program. If the program was able to detect the changes, I would repeat with a different directory.

In addition, I had another person test to see if they could use my script to upload and removing files from the bucket.