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**Description and Design:**

This is a program for backing up files using AWS’s S3 service. It accomplishes this by taking in a user’s input, initializing all the variables according, and then running a recursive algorithm uploading only files that are not currently present in the current S3 bucket location or files that have been modified since being uploaded. This recursive algorithm takes a file directory as input, gets an array of all the files inside of it, and cycles through these files, checking to see if they are on S3 or not.

If a file is not in S3, it immediately uploads this file – if this file is a directory, it enters the recursive method again, and if it’s a file, uploads right away

In the case of empty directories, it will automatically generate a 0 byte file to maintain visibility in your bucket. Please note the professor said this was a fine solution, as S3 does not have a concept of “folders”, meaning empty folders do not show up in the S3 console. These empty files are also kept on user’s machine so that if the user later decides to re-backup, only modified files will be uploaded, and no additional 0-byte files must be generated.

Additionally, no files are deleted from the backup, so if a directory is completely wiped and populated with different files, S3 will keep both the original files and the new files.

**How to Run:**

To use this program, navigate to folder where the ConsoleApp5.exe is residing in cmd, and run with this command:

*ConsoleApp5.exe \*insert user arguments here\**

Without the “\*”s, the user’s arguments should be provided in this order with a space between each entry:

* + Access ID
  + Secret ID
  + Bucket name
  + Bucket Region
  + User’s directory to back up

An example input would look something like this:

*ConsoleApp5.exe AEGOITN23TN2 gjeoaafop$21gdsfs testbucket101 USWest2 C:\users\admin\testfolder*

(Note: these are not real values)

Bad input will be handled gracefully.

In order to run this program, you must have .NET Framework 4.5 installed on your machine.

**Peer-Testing:**

This project was peer-tested by Jarod Guerrero.