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CSS 490

Program 3

This assignment involved creating an application that, given AWS IAM credentials, can upload a given directory to an S3 bucket, maintaining the directory structure.

For instructions and dependencies, see README.md, which is included.

**Design**

This application uses a recursive design to walk through the specified directory and all subdirectories. The program begins by creating an S3 session using the user’s AWS IAM access key ID, their secret key, and the S3 region of their choice. It then prints the list of current buckets. Users have the choice of creating a new bucket or using an existing one. The user is prompted for a valid absolute path to a directory they wish to back up to S3.

The recursive function is then called. The function uses python looping through the current root, files, and directories. In the function, at each level, it gets the current directory name and the current path to that directory relative to the root of the directory tree to back up.

The program then loops through all the subdirectories for that folder, and calls the recursive function on itself, passing in it’s concatenated relative path. This continues until it hits a terminal leaf. Then, the function loops through all the files it finds there and uploads them by name concatenated with the relative path so that AWS creates the appropriate nested folders and places the file in the appropriate one. The recursion then “unwinds” with each folder’s function call uploading its files to a copy of itself in the S3 bucket.

Once the functions have completely unwound, the program pauses to allow the user to view the complete report of activity.