**CASE STUDY 5:**

**Problem Statement:** Buildan AWS cost-effective solution to read S3 bucket files present at /out folder. Monitor the incoming .txt file at /out folder and execute application only after getting file at the provided location. Write a script/inline application to count the words present in the .txt file and write it in count.txt file along with the execution date. Update count.txt file to append count and store it at /count folder of S3 bucket.

Also, to perform cost management develop an application to shut down and start dev account EC2 instances on 6PM and 9PM every day respectively.

Also, you have been tasked with identifying 14 days (about 2 weeks) older EBS volumes snapshot and automate the process to delete those on weekly basis.

Develop logic in any known coding language like shell, python, NodeJS etc.

SOLUTION:

Terraform script automatically sets up AWS resources to manage storage, processing, and scheduling tasks efficiently.

It creates an S3 bucket to store files, ensuring security by blocking public access. Inside the bucket, two empty folders (out/ and count/) are created to organize files. When a new text file appears in the out/ folder, a Lambda function processes it, using a special IAM role that gives it permission to read and write in S3.

The script also sets up two Lambda functions to handle EBS snapshots, allowing automated creation and deletion of backups. These functions need an IAM role with EC2 permissions to access and manage the storage.

An EC2 instance is created, which can be controlled using two Lambda functions that start and stop the instance as needed. A special IAM role lets these functions perform EC2 actions.

To automate EC2 start and stop, the script uses CloudWatch scheduled events. These events trigger the Lambda functions at specific times, ensuring efficient resource management.

This setup makes AWS infrastructure more secure, automated, and cost-efficient, reducing manual work while ensuring services run smoothly.

SCREENSHOTS:

   