EC2 Department Tag Updater – Task3

🧾 Task Description

An organisation has multiple EC2 instances running in a VPC on AWS. Each instance has multiple tags like **"Department"** and **"Hostname"** associated with it. The value of the Department tag is one of: `Frontend`, `Backend`, `DevOps`, `QA`, `ITOps`, etc.

The organisation has requested you to change the Department tags of a few servers and has shared a CSV file with the old and new values for the "Hostname".

Sample CSV:

Hostname	CurrentDepartment	NewDepartment
webserver01	Backend	Frontend
webserver02	Frontend	Frontend
database04	QA	Backend
ansible	DevOps	Backend
scanner		DevOps
activedirectory02	ITOps	ITOps
database03	Frontend	Backend
jenkins		DevOps

📋 Objective

Create a script that updates the **Department** tag of EC2 instances by reading the Hostname and tag values from a CSV file. The script should:

- Search for EC2 instances by their `Hostname` tag.
- Check if the `Department` tag matches the expected current value (if provided).
- Update the tag with the new department if conditions are met.
- Skip mismatches and handle missing instances gracefully.

⚙️ How to Run

Prerequisites

- Python 3.x
- `boto3` installed (`pip install boto3`)
- AWS credentials configured using:
  - AWS CLI (`aws configure`) or
  - Environment variables
- A CSV file named `update_tags.csv` present in the working directory.

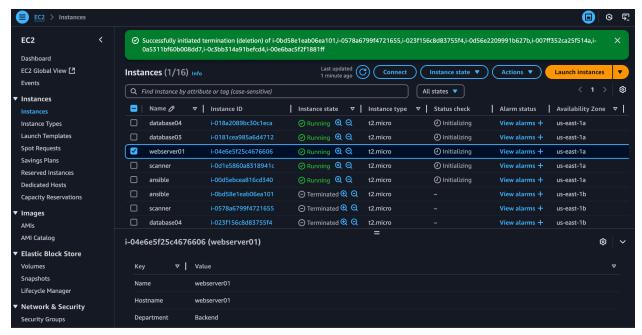
✅ Expected Outcome

- Script reads the CSV and updates the `Department` tag for all matched EC2 instances.
- Logs:
  - Successfully updated instances
  - Skipped instances (due to tag mismatch)
  - Instances not found
- Summary Report at the end

📸 Demonstration

Step 1: Before Running the Script

Example EC2 Tags:

Hostname: webserver01
Department: Backend

Step 2: Running the Script

python3 updateScript.py

Step 3: Sample Output


```
rashimittal@Rashis-MacBook-Air task3 % python3 updateScript.py
🚀 Starting Department tag update process...

🔍 Processing Hostname: webserver01
✅ Updated i-0e896c232a6fc9e2b — Department → Frontend
🔍 Processing Hostname: webserver02
✅ Updated i-0fae4077d6e7753a4 — Department → Frontend
🔍 Processing Hostname: database04
✅ Updated i-0bef440667559682b — Department → Backend
🔍 Processing Hostname: ansible
✅ Updated i-097dcfe631d6431b4 — Department → Backend
🔍 Processing Hostname: scanner
✅ Updated i-0c6b3dd699877b007 — Department → Devops
🔍 Processing Hostname: activedirectory02
✅ Updated i-029668b2ec6e55d75 — Department → ITops
🔍 Processing Hostname: database03
✅ Updated i-048caf6332462f392 — Department → Backend
🔍 Processing Hostname: jenkins
✅ Updated i-0e2f37cb9abc757c2 — Department → Devops

📊 Summary Report
✔ Updated: 8
❌ Failed: 0
❓ Not Found: 0
✅ Tag update process completed.
```

After running the Scripts the Tags have been changed.