AWS IAM Security Automation Project

This project demonstrates secure AWS Identity and Access Management (IAM) configuration using AWS CLI. It involves creating IAM users, policies, enforcing MFA, and enabling AWS CloudTrail logging — all scripted and auditable. It is designed to simulate real-world DevSecOps automation for cloud identity and access control.

# ✅ Features Implemented

* • Created custom IAM policy: ReadOnlyS3EC2Policy
* • Created IAM group `adminsGroup` and attached policy
* • Created user `projectAdminUser` with console login
* • Enabled Multi-Factor Authentication (MFA) for user
* • Configured strong password policies for all IAM users
* • Set up an S3 bucket for CloudTrail logs
* • Created CloudTrail trail for logging IAM activity

# 🛠️ AWS Services Used

* • AWS IAM (Identity and Access Management)
* • AWS S3 (for storing CloudTrail logs)
* • AWS CloudTrail (activity logging and auditing)
* • AWS CLI (for automation via command-line)

# 📁 Project Folder Structure

iam-user-security-project/  
├── readonly-policy.json → Custom IAM policy  
├── cli-commands.cmd → Full script (Windows CMD)  
├── screenshots/ → Project screenshots  
│ ├── iam-user-group.png  
│ ├── mfa-qr-code-blurred.png  
│ ├── s3-cloudtrail-logs.png  
├── README.docx → This professional documentation

# 📸 Screenshots (in screenshots/)

1. iam-user-group.png – Shows IAM user `projectAdminUser` in `adminsGroup`  
2. mfa-qr-code-blurred.png – Blurred version of the generated MFA QR code  
3. s3-cloudtrail-logs.png – CloudTrail logs successfully delivered to S3 bucket

# 🚀 How to Run This Project

1. Open terminal (CMD or VS Code)  
2. Run AWS CLI configuration: `aws configure`  
3. Execute script: `cli-commands.cmd`  
4. Scan the MFA QR code using Google Authenticator or similar app  
5. Enter MFA codes when prompted  
6. Verify user access, policy, and CloudTrail logging

# 📜 IAM Policy (readonly-policy.json)

Grants read-only access to all EC2 and S3 resources.

# 🎯 Learning Outcomes

* • Automate IAM user and policy creation using AWS CLI
* • Understand group-based permission architecture
* • Implement security best practices like MFA and password policy
* • Set up CloudTrail logging for traceability and auditing

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