WEEK-5 Project: IAM & Cloud Service Models

Part 1:

Cloud Service Models:

1. **IaaS** (Infrastructure as a Service)
2. **PaaS** (Platform as a Service)
3. **SaaS** (Software as a Service)

1.IaaS (Infrastructure as a Service):

- User manage everything except hardware
- IaaS provides basic computing resources such as virtual machines, storage, and networking. We are responsible for installing and managing operating systems and applications.

Example: Amazon EC2.

Explain: Using Amazon EC2 is like renting a computer online where you decide what software to install and how to use it.

2.PaaS (Platform as a Service)

- User manage only on application
- PaaS provides a ready-made platform where the infrastructure and operating system are managed by the provider. We only focus on using or running applications.

Example: AWS Elastic Beanstalk

Explain: Elastic Beanstalk allows developers to upload application code while AWS manages servers, scaling, and maintenance automatically. Like If we use Blogspot we just create content and platform is managed by CSP.

3.SaaS (Software as a Service)

- User just use the software
- SaaS delivers fully functional software applications over the internet. Users simply use the application without worrying about installation or maintenance.

Example: Amazon WorkDocs.

Explain: Amazon WorkDocs allows users to store, share, and collaborate on documents through a web browser without managing servers or software updates. Like Google drive, Gmail allowing users to store and share files using a web browser.

Difference between IaaS, PaaS and SaaS.

Feature	IaaS (Infrastructure as a Service)	PaaS (Platform as a Service)	SaaS (Software as a Service)
What is provided	Virtual machines, storage, networking	Platform with OS, runtime, tools	Fully ready software
User responsibility	Manage OS, apps, and data	Manage application and data	Only use the software
Provider manages	Hardware, data center, networking	Infrastructure + OS + runtime	Everything
Technical knowledge needed	High	Medium	Low
Flexibility	Very high	Medium	Low
Setup time	Amazon EC2	Quick	Immediate
Common man example	Renting a computer online	Using Blogspot/Wix to create a site	Using Gmail, Netflix
AWS example	Amazon EC2	AWS Elastic Beanstalk	Amazon WorkDocs
Best suited for	System admins, IT teams	Application developers	End users

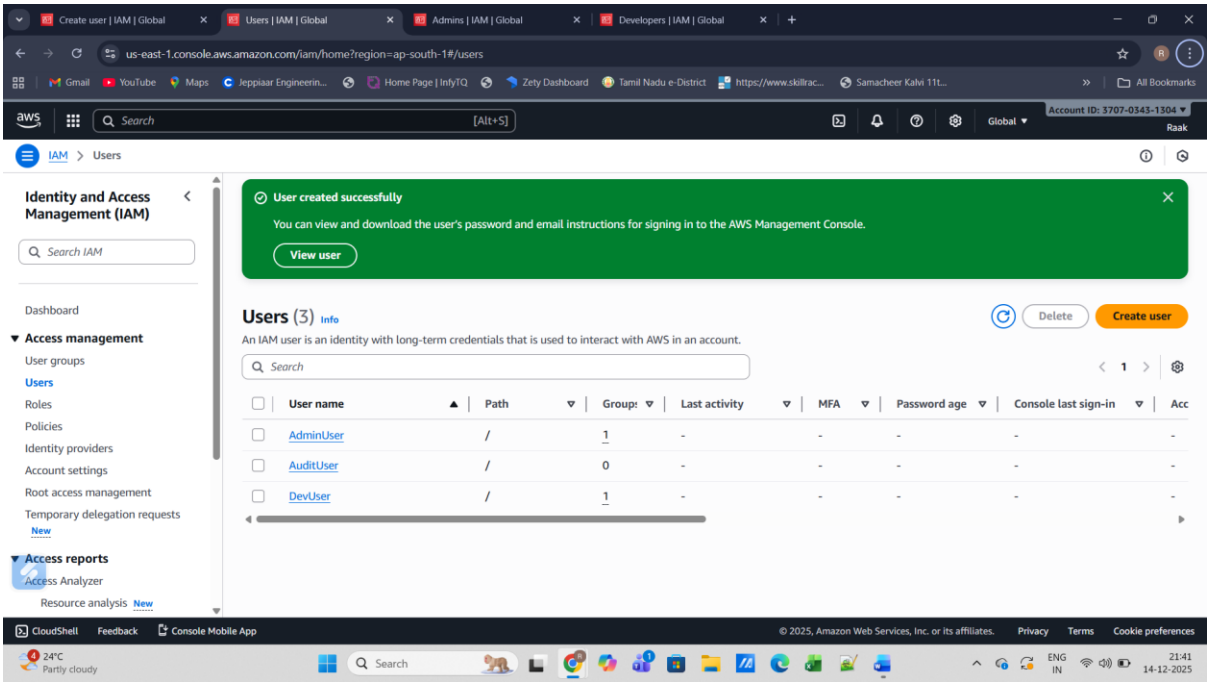
Part 2:

IAM

In this activity, AWS Identity and Access Management (IAM) was used to create and manage users, groups, and permissions. Different access levels were assigned using IAM groups and policies based on user roles. An inline policy was also created to restrict access to specific AWS services and regions. This activity helps in understanding secure access control in AWS.

1. **IAM Console showing created users and their assigned groups:**

   In this activity, IAM users and groups were created to demonstrate access management in AWS. DevUser was assigned to the Developers group with EC2 read-only access, and AdminUser was assigned to the Admins group with full administrative privileges and alos an AuditUser was created without adding it to any of the groups.



2. **IAM Console showing the inline policy attached to AuditUser**

An inline IAM policy was created and attached directly to AuditUser to allow access only to Amazon S3 services restricted to the us-east-1 region, following the principle of least privilege.