AWS Training Labs – Week 1 & Week 2

WEEK 1: Introduction to Cloud & AWS

Day 1 Lab – AWS Console Overview

Objective: Explore AWS global infrastructure and understand regions and availability zones.

Steps:
1. Sign in to AWS Management Console at https://aws.amazon.com/console/
2. Use IAM user credentials (not root).
3. Navigate to "Services", explore EC2, S3, RDS, IAM.
4. Check AWS Global Map at https://aws.amazon.com/about-aws/global-infrastructure/.

Day 2 Lab – AWS Pricing Calculator

Objective: Estimate costs for a sample web server setup.

Steps:
1. Open https://calculator.aws/#/.
2. Add EC2: t2.micro instance.
3. Add S3 storage: 10GB.
4. Review and download cost estimation PDF.

Day 3 Lab – IAM Users & Policies

Objective: Create a secure IAM setup.

Steps:
1. Open IAM in AWS Console.
2. Add user: student-admin with programmatic & console access.
3. Assign AdministratorAccess policy.
4. Sign in using the IAM URL (https://<account-id>.signin.aws.amazon.com/console).

Day 4 Lab – AWS CLI Setup

Objective: Access AWS services using CLI.

Steps:
1. Install AWS CLI.
2. Configure using `aws configure`.
3. Test with `aws s3 ls`.

Day 5 Mini Project – IAM & CLI

Task: Create a user with S3 read-only access and use AWS CLI to list S3 buckets.

Commands:
aws s3 mb s3://student-demo-bucket
aws s3 ls

WEEK 2: EC2 Mastery

Day 1 Lab – Launch EC2 Instance

Objective: Create and connect to an EC2 Linux server.

Steps:
1. Launch Amazon Linux 2 EC2 instance (t2.micro).
2. Create Key Pair and Security Group (allow SSH and HTTP).
3. Connect via SSH using:
chmod 400 student-key.pem
ssh -i student-key.pem ec2-user@<Public-IP>

Day 2 Lab – EBS Volumes

Objective: Attach extra storage to EC2.

Steps:
1. Create 2GB EBS volume in same AZ.
2. Attach to EC2.
3. Format and mount using:
lsblk
sudo mkfs -t ext4 /dev/xvdf
sudo mkdir /data
sudo mount /dev/xvdf /data

Day 3 Lab – Bootstrapping with User Data

Objective: Install web server automatically.

User Data Script:
#!/bin/bash
yum update -y
yum install httpd -y
systemctl start httpd
systemctl enable httpd
echo "Welcome to AWS Training!" > /var/www/html/index.html

Access via: http://<Public-IP>

Day 4 Lab – Elastic IP & Security Groups

Objective: Assign a static IP to EC2 and manage security.

Steps:
1. Allocate and associate Elastic IP.
2. Update security group to allow custom port (e.g., 8080).

Day 5 Mini Project – Web App Deployment

Task: Deploy a Flask or Spring Boot app.

Python Example:
sudo yum install git python3 -y
git clone https://github.com/pallets/flask.git
cd flask/examples/tutorial
python3 -m venv venv
source venv/bin/activate
pip install -r requirements.txt
flask run --host=0.0.0.0