EC2 Hands-on

✅1: What is EC2?

- **EC2 (Elastic Compute Cloud)** is a service provided by AWS that allows us to run virtual servers in the cloud.
- We can use EC2 to host websites, run applications, or perform computation-heavy tasks.

✅2: Why Use EC2 to Host a Static Website?

- Provides full control over the virtual machine (OS, web server).
- Highly scalable and flexible.
- We can host our static website (HTML, CSS, JS files) easily.

✅3: Steps for EC2 Instance Creation

🔧 Step 1: Log in to AWS Management Console

- Go to https://aws.amazon.com
- Sign in → Services → EC2 → Launch Instance

🔧 Step 2: Launch EC2 Instance

1. **Choose AMI (Amazon Machine Image)**:
    - Select Amazon Linux 2 or Ubuntu Server (Free Tier eligible).
2. **Select Instance Type**:
    - Choose `t2.micro` or `t3.micro` (Free Tier).
3. **Configure Instance**:
    - Keep default settings.
4. **Add Storage**:
    - Default 8 GB is sufficient for a static website.
5. **Add Tags (Optional)**:
    - Example: Name → MyStaticWebsiteServer
6. **Configure Security Group**:
    - Allow:
        - SSH → Port 22 → Your IP (for management).
        - HTTP → Port 80 → Anywhere (for website access).

7. **Review and Launch**:
    - Select or create a new key pair (.pem file) → Download it → Important for SSH access.

✅4: Connect to EC2 Instance (Using Terminal or PowerShell)

```
# Set permissions for key file
chmod 400 your-key.pem

# Connect via SSH
ssh -i your-key.pem ec2-user@<EC2-Public-IP>
```

✅5: Install Web Server (Apache)

Once connected to EC2 instance:

```
# Update packages
sudo yum update -y          # For Amazon Linux
# or for Ubuntu: sudo apt update -y

# Install Apache HTTP server
sudo yum install httpd -y   # For Amazon Linux
# or for Ubuntu: sudo apt install apache2 -y
```

Start Apache service

sudo systemctl start httpd

Enable Apache to start on boot

sudo systemctl enable httpd

✅6: Upload Your Static Website Files

Option 1: Using SCP (From Local to EC2)
scp -i your-key.pem index.html
ec2-user@<EC2-Public-IP>:/home/ec2-user/

Option 2: Directly Edit on EC2
sudo nano /var/www/html/index.html
# Paste your HTML code

Move files to web server directory:
sudo mv /home/ec2-user/index.html /var/www/html/

✅7: Open HTTP Port in Security Group (if not already done)

- Ensure that Port 80 (HTTP) is open in the Security Group → Inbound Rules:
    - Type: HTTP → Protocol: TCP → Port Range: 80 → Source: Anywhere (0.0.0.0/0).

✅8⃣ Test the Static Website

- Open browser → Enter: `http://<EC2-Public-IP>`

👉 You should see your hosted static website displayed.

✅9⃣ Useful Commands Recap

Purpose	Command
Update packages	`sudo yum update -y` or `sudo apt update -y`
Install Apache	`sudo yum install httpd -y` or `sudo apt install apache2 -y`
Start Apache	`sudo systemctl start httpd`
Enable Apache at boot	`sudo systemctl enable httpd`
Move files to web directory	`sudo mv index.html /var/www/html/`

SSH into EC2 instance	`ssh -i your-key.pem ec2-user@<Public-IP>`
Upload files via SCP	`scp -i your-key.pem index.html ec2-user@<Public-IP>:/home/ec2-user/`

✅ 🔟: Final Notes

- Make sure the `.pem` key file has correct permissions (`chmod 400`).
- Public IP can change if the instance is stopped/started → Use Elastic IP for a static IP if needed.
- EC2 is flexible for hosting not just static, but dynamic websites with databases too.