Server Setup & Deployment (Manual Setup)

1. **Provision a Linux server (Ubuntu 22.04 or similar) on any cloud provider (AWS, GCP, DigitalOcean, or a local VM).**
    a. Go to AWS EC2 Dashboard - Launch Instance
    b. Choose Ubuntu 22.04 LTS
    c. Select Instance Type: t2.micro (Free Tier)
    d. Create or Select a Key Pair (for SSH access)
    e. Configure Security Group:
        i. Allow SSH (22) only from your IP
        ii. Allow HTTP (80) and HTTPS (443) for all
    f. Launch the instance and copy the Public IP
    g. Connect to EC2 via SSH:
        i. ssh -i my-sample-key.pem ubuntu@your-ec2-public-ip
2. **Manually install and configure NGINX to serve a basic HTML page (index.html).**
    a. sudo yum update -y
    b. sudo yum install nginx
    c. sudo systemctl enable nginx –now
    d. echo "<h1>Welcome</h1>" | sudo tee /var/www/html/index.html
        i. Test in Browser - Open http://your-ec2-public-ip
3. **Use Cert-bot to install an SSL certificate and configure auto-renewal.**
    a. sudo apt install certbot python3-certbot-nginx
    b. sudo certbot --nginx -d mysampledomain.com -d www.mysampledomain.com
    c. sudo certbot renew --dry-run
        i. Verify SSL in Browser: Open https://mysampledomain.com
4. **Harden the server security**:
    a. Configure firewall rules to allow only SSH (port 22) and HTTP/HTTPS (ports 80, 443).
        i. Go to AWS EC2 Dashboard -> Security Groups -> Create Security Group
        ii. Set inbound rules to allow only necessary traffic,

SSH	TCP	22	Your IP only (e.g., 203.0.113.1/32)
HTTP	TCP	80	0.0.0.0/0
HTTPS	TCP	443	0.0.0.0/0

        iii. Attach the Security Group to your EC2 instance.
5. **Disable root login and password-based SSH access.**
    a. sudo vim /etc/ssh/sshd_config
        i. PermitRootLogin no
        ii. PasswordAuthentication no
    b. sudo systemctl restart sshd
6. **Document all commands used and any troubleshooting steps taken.**
    a. sudo systemctl status nginx
    b. sudo systemctl restart nginx (if req)
    c. sudo certbot certificates
    d. sudo certbot renew
    e. sudo ufw status