1. Allocate an Elastic IP Address
    a. Create an AWS account
    b. Navigate to the search bar on the top of the screen and search EC2
    c. On the left panel in EC2, navigate to Network and Security and click on Elastic IP
    d. Click on Allocate Elastic IP Address, leave settings to default, and allocate
    e. Keep track of the IP address on another tab
2. Create a custom VPC
    a. Navigate to the VPC dashboard
    b. Go to Your VPCs, and click create VPC
    c. Choose VPC only
        i. Call it “MyProjectVPC”
        ii. IPv4 CIDR block will be “10.0.0.0/16”
        iii. Leave everything else as default and click Create VPC
3. Create Subnets
    a. Navigate to the Subnet Dashboard
        i. Create Subnet
            1. Select MyProjectVPC
            2. Call the subnet “PublicSubnet”
            3. Pick an Availability zone that will be used for the whole project, I will use “us-east-2a”
            4. The subnet CIDR block will be “10.0.1.0/24”
            5. Click Create Subnet
        ii. Create Another Subnet
            1. Select MyProjectVPC
            2. Call the subnet “PrivateSubnet1”
            3. Select “us-east-2a”
            4. Subnet CIDR block wil be “10.0.2.0/24”
            5. Click Create Subnet
        iii. Create Another Subnet
            1. Select MyProjectVPC
            2. Call the subnet “PrivateSubnet1”
            3. Select “us-east-2b”(Will need to be done”
            4. Subnet CIDR block wil be “10.0.3.0/24”
            5. Click Create Subnet
4. Create Internet Gateway
    a. Navigate to Internet Gateway Dashboard
    b. Click Create Internet Gateway
        i. Set name as “MyInternetGateway”
        ii. Click Create Internet Gateway
    c. Click Actions and attach to VPC
    d. Select MyProjectVPC
    e. Attatch to Internet Gateway
5. Configure Route tables
    a. Navigate to Route Tables dashboard

    b. Click Create Route Table
        i. Set name as “PublicRouteTable”
        ii. Select MyProjectVPC as the VPC
        iii. Click Create Route Table
    c. After Creation, click Edit Routes
    d. Click Add Route
        i. Use 0.0.0.0/0
        ii. Select for Internet Gateway
        iii. Select MyInternetGateway
        iv. Save Changes
    e. Go to Subnet Associations in Route Table
    f. Click Edit Subnet Associations in the empty area, and add PublicSubnet and Save aassociations
6. Create DB Subnet Group
    a. Navigate to RDS dashboard
    b. Click on Subnet Groups
    c. Create DB subnet group
        i. Call this “MyDBSubnetGroup”
        ii. Set the description as “Subnet group for private DB”
        iii. Select MyProjectVPC
        iv. Select us-east-2a and us-east-2b
        v. Select PrivateSubnet1 and PrivateSubnet2
        vi. Click Create
7. Create EC2 Instance
    a. Navigate to EC2 dashboard
    b. Go to Instances and Launch Instance
        i. Name the Instance as “WebServerInstance”
        ii. Select Amazon Linux
        iii. Select Amazon Linux 2023 AMI
        iv. Select t2.micro as instance type
        v. Create Key pair and call it “webkeypair”
        vi. Select .ppk and Create Key Pair
        vii. Click Edit on Network Settings
        viii. Enable Auto assign Public IP
        ix. Click Create Security Group and call it “EC2SG”
        x. Launch Instance
8. Launch RDS DB instance
    a. Navigate to RDS dashboard
    b. Select Databases on the left menu
    c. Click Create Database
        i. Click Standard Create
        ii. For the Engine, select MySQL
        iii. Select Engine Version 8.4.4
        iv. Select Free Tier in Templates

v. Name the instance identifier as “mydbinstance”
vi. Leave the master username as admin and create a password
vii. Select db.t3.micro as Instance Configuration
viii. Select General Purpose SSD (gp2)
ix. Allocate 20 gigabytes of storage
x. Select Yes to allow compute resource to connect
xi. Select WebServerInstance as the EC2 instance
xii. Select MyProjectVPC if not automatically selected
xiii. Select No for Public Access
xiv. Create New VPC Security Group
xv. Call it “RDSSG”
xvi. Click Additional Configuration in Connectivity and select Database Port “3306”
xvii. Select Password Authentication for Database Authentication
xviii. Click Additional Configuration on the bottom
xix. Call the Initial Database name as “sqldatabase”
xx. Click Create Database

9. Launch EC2 using PuTTY
    a. Navigate to EC2 dashboard and find your instance
    b. Copy Public IPv4 address
    c. Paste it into Host Name
    d. Go on the left tab under Connections > SSH > AUTH and paste in Key pair from Ec2
    e. Go back to AWS console and go to RDS dashboard
    f. Go under Databases and click on mydbinstance
    g. Copy the endpoint under connectivity and security
    h. Install mysql on the bash window
    i. Type in these codes below
        i. sudo dnf update -y
        ii. sudo dnf install -y mariadb105
        iii. mysql --version
        iv. mysql -h mydbinstance.c1zhl36mimlp.us-east-2.rds.amazonaws.com -u admin -p
        v. Enter your password blindly and press enter
        vi. Your database should show up with all information