**Build & Push Docker Image (on your local machine)Source code:**

```
FROM mcr.microsoft.com/dotnet/aspnet:8.0 AS base
WORKDIR /app
EXPOSE 80

FROM mcr.microsoft.com/dotnet/sdk:8.0 AS build
WORKDIR /src
RUN dotnet publish -c Release -o /app

FROM base AS final
WORKDIR /app
COPY --from=build /app .
ENTRYPOINT ["dotnet", "App.dll"]


# 1. Build your Docker image

docker build -t dotnet-iot-app .

# 2. Tag the image for ECR

docker tag dotnet-iot-app:latest 123456789012.dkr.ecr.us-west-2.amazonaws.com/dotnet-iot-app

# 3. Authenticate Docker to your ECR

aws ecr get-login-password --region us-west-2 | docker login --username AWS --password-stdin 123456789012.dkr.ecr.us-west-2.amazonaws.com

# 4. Push the image to ECR

docker push 123456789012.dkr.ecr.us-west-2.amazonaws.com/dotnet-iot-app
```

**Kubernetes Deployment YAML (deployment.yaml):**

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: iot-app
```

```
spec:
  replicas: 1
  selector:
    matchLabels:
      app: iot
  template:
    metadata:
      labels:
        app: iot
    spec:
      containers:
      - name: iot-app
        image: 123456789012.dkr.ecr.us-west-2.amazonaws.com/dotnet-iot-app
        ports:
        - containerPort: 80
```

**Kubernetes Service YAML:**

```
apiVersion: v1
kind: Service
metadata:
  name: iot-service
spec:
  type: LoadBalancer
  ports:
    - port: 80
      targetPort: 80
  selector:
    app: iot
```