4. Simulate load on the application for a short duration and remove the deployment after observing the scaling behavior.

Practical Task 9: Rolling Update of an Application in AKS

Requirements:
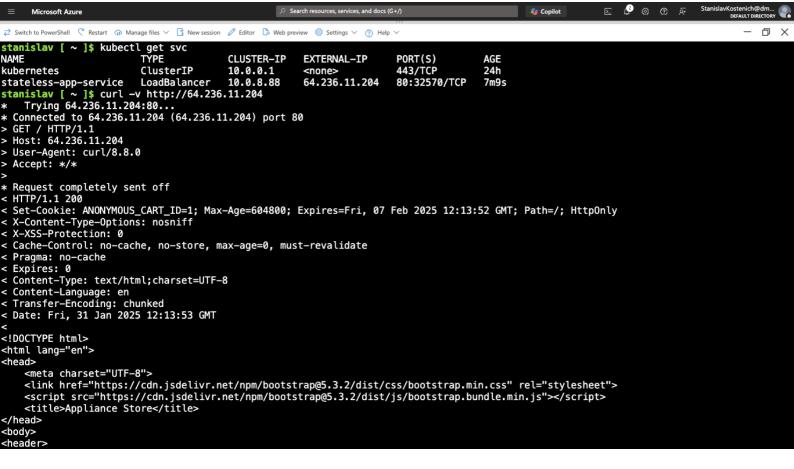
1. Deploy a lightweight version of your application to the AKS cluster.
2. Update the Docker image to a new version with minimal changes (e.g., color change).
3. Perform a rolling update using kubectl set image with minimal replicas to reduce resource usage.
4. Verify the update process quickly and remove the deployment after the update.

Welcome to our updated V2 store , Anonymous User!

Switch to PowerShell   Restart   Manage files ⌄   New session   Editor   Web preview   Settings ⌄   Help ⌄

```
stanislav [ ~ ]$ kubectl get svc
NAME                    TYPE           CLUSTER-IP   EXTERNAL-IP     PORT(S)        AGE
kubernetes              ClusterIP      10.0.0.1     <none>          443/TCP        24h
stateless-app-service   LoadBalancer   10.0.8.88    64.236.11.204   80:32570/TCP   7m9s
stanislav [ ~ ]$ curl -v http://64.236.11.204
*   Trying 64.236.11.204:80...
* Connected to 64.236.11.204 (64.236.11.204) port 80
> GET / HTTP/1.1
> Host: 64.236.11.204
> User-Agent: curl/8.8.0
> Accept: */*
>
* Request completely sent off
< HTTP/1.1 200
< Set-Cookie: ANONYMOUS_CART_ID=1; Max-Age=604800; Expires=Fri, 07 Feb 2025 12:13:52 GMT; Path=/; HttpOnly
< X-Content-Type-Options: nosniff
< X-XSS-Protection: 0
< Cache-Control: no-cache, no-store, max-age=0, must-revalidate
< Pragma: no-cache
< Expires: 0
< Content-Type: text/html;charset=UTF-8
< Content-Language: en
< Transfer-Encoding: chunked
< Date: Fri, 31 Jan 2025 12:13:53 GMT
<
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.2/dist/css/bootstrap.min.css" rel="stylesheet">
    <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.2/dist/js/bootstrap.bundle.min.js"></script>
    <title>Appliance Store</title>
</head>
<body>
<header>
```

⇄ Switch to PowerShell   ⟳ Restart   ⌹ Manage files ∨   ⎘ New session   ✎ Editor   ⧉ Web preview   ⚙️ Settings ∨   ⑦ Help ∨   ─ ☐ ✕

```
stanislav [ ~ ]$ kubectl set image deployment/rolling-update-app rolling-update-app=devregistry20250126.azurecr.io/appliancestoretestsp
ringbootmain_app:v2
deployment.apps/rolling-update-app image updated
stanislav [ ~ ]$ kubectl rollout status deployment/rolling-update-app
deployment "rolling-update-app" successfully rolled out
stanislav [ ~ ]$ kubectl get pods
NAME                            READY     STATUS      RESTARTS     AGE
rolling-update-app-84c8b77cfd-bkp8x     1/1     Running     0            26s
rolling-update-app-84c8b77cfd-hzchk     1/1     Running     0            26s
stanislav [ ~ ]$ kubectl get rs
NAME                        DESIRED     CURRENT     READY     AGE
rolling-update-app-84c8b77cfd     2           2           2         53s
rolling-update-app-c74548467      0           0           0         6m7s
stanislav [ ~ ]$
```

```
64    btn.update.status=Update status
65    cart.empty=Cart is empty
66    orders.empty=Orders list is empty
67    error.header=Error
68    error.valid.header=Validation error
69    error.return=Return to Previous Page
70    cart.locked.message=The cart is locked. Please log in as a client to unlock it.
71    welcome.anonymous=Welcome to our updated V2 store , Anonymous User!
72    welcome.client=Welcome to our store, Client!
73    welcome.employee=Welcome to work, Employee!
74    welcome.admin=Welcome to work, Admin!
```

```
openjdk                                    17-jdk-slim              37cb44321d04      2 years ago      408MB
sks-MacBook-Air:appliance-store-test-spring-boot-main sk$ docker tag $ACR_LOGIN_SERVER/appliancestoretestspringbootmain_app:v1 $ACR_LOGIN_SERVER/appliancestoretest
springbootmain_app:v2
sks-MacBook-Air:appliance-store-test-spring-boot-main sk$ docker push $ACR_LOGIN_SERVER/appliancestoretestspringbootmain_app:v2
The push refers to a repository [devregistry20250126.azurecr.io/appliancestoretestspringbootmain_app]
b816b6519e81: Pushed
8fa789f44a3c: Layer already exists
6be690267e47: Layer already exists
13a34b6fff78: Layer already exists
9c1b6dd6c1e6: Layer already exists
v2: digest: sha256:30508ee1447d8706d2df52a663cd5ef48657bf8f14a5bcec93a195bb665daf69 size: 1371
sks-MacBook-Air:appliance-store-test-spring-boot-main sk$ |
```

Dashboard > dev-aks-cluster | Node pools > agentpool | Nodes > aks-agentpool-13218111-vmss000002

aks-agentpool-13218111-vmss000002 | Pods
Node

🔍 Search

- 🖥 Overview
- 🔲 Pods
- 📄 YAML
- 📄 Events

🔄 Refresh   👎 Hide labels   💬 Give feedback

Pods

Filter by namespace

| All namespaces ▾ | Pod na... : All | Pod stat... : All | app = rolling-update-app ✕ | ▽ Add label filter |

Name	Namespace	Ready	Status	Restart count	Age ↓	Pod IP	Labels
rolling-update-app-c74548467-l95cc	default	✅ 1/1	Running	0	3 minutes	10.244.0.205	a... : rolling-update-...
							pod-templa... : c7454...
rolling-update-app-c74548467-qfdnj	default	✅ 1/1	Running	0	3 minutes	10.244.0.141	a... : rolling-update-...
							pod-templa... : c7454...

⟳ Switch to PowerShell   ↻ Restart   ⊕ Manage files ∨   🗔 New session   ✏ Editor   🌐 Web preview   ⚙ Settings ∨   ❓ Help ∨

```
Merged "dev-aks-cluster" as current context in /home/stanislav/.kube/config
stanislav [ ~ ]$ vi rupdate.yaml
stanislav [ ~ ]$ kubectl apply -f rupdate.yaml
deployment.apps/rolling-update-app created
service/stateless-app-service created
stanislav [ ~ ]$ kubectl get pods
NAME                                 READY   STATUS    RESTARTS   AGE
rolling-update-app-c74548467-l95cc   1/1     Running   0          41s
rolling-update-app-c74548467-qfdnj   1/1     Running   0          41s
stanislav [ ~ ]$
```

Switch to PowerShell   Restart   Manage files ∨   New session   Editor   Web preview   Settings ∨   Help ∨

```
stanislav [ ~ ]$ az aks get-credentials --resource-group StanislavKostenich --name dev-aks-cluster --overwrite-existing
Merged "dev-aks-cluster" as current context in /home/stanislav/.kube/config
stanislav [ ~ ]$ vi rupdate.yaml
stanislav [ ~ ]$ kubectl apply -f rupdate.yaml
deployment.apps/rolling-update-app created
service/stateless-app-service created
stanislav [ ~ ]$ kubectl get pods
NAME                                READY   STATUS    RESTARTS   AGE
rolling-update-app-c74548467-l95cc  1/1     Running   0          41s
rolling-update-app-c74548467-qfdnj  1/1     Running   0          41s
stanislav [ ~ ]$
```

```yaml
```yaml
apiVersion: apps/v1
kind: Deployment
metadata:
  name: rolling-update-app
spec:
  replicas: 2  # Minimum replicas for rolling update
  selector:
    matchLabels:
      app: rolling-update-app
  strategy:
    type: RollingUpdate
    rollingUpdate:
      maxUnavailable: 1 # Allow only 1 pod to be unavailable during update
      maxSurge: 1       # Add 1 extra pod during the update
  template:
    metadata:
      labels:
        app: rolling-update-app
    spec:
      containers:
        - name: rolling-update-app
          image: devregistry20250126.azurecr.io/appliancestoretestspringbootmain_app:v1  # Initial version
          ports:
            - containerPort: 8080
---
apiVersion: v1
kind: Service
metadata:
  name: stateless-app-service
spec:
  selector:
    app: rolling-update-app
  ports:
    - protocol: TCP
      port: 80
      targetPort: 8080
  type: LoadBalancer
```

Find: /rolling-update-app:v2

Replace: /appliancestoretestspringbootmain_app:v2

2 matches

Tab Size: 4   Java

4. Simulate load on the application for a short duration and remove the deployment after observing the scaling behavior.

Practical Task 9: Rolling Update of an Application in AKS

Requirements:

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