**📌 Step 1: Start Minikube (2 Minutes)**

Minikube allows you to run a **Kubernetes cluster locally** for testing.

1. Open a **terminal or command prompt**.
2. Start Minikube:

**minikube start**

1. Check if Minikube is running:

**minikube status**

✅ Expected Output: It should show that Minikube is **running** and the cluster is **healthy**.

**📌 Step 2: Create a Kubernetes Deployment (3 Minutes)**

Now, let’s deploy a simple **NGINX web server** in Kubernetes.

1. Run the following command to create a deployment:

**kubectl create deployment my-app --image=nginx**

1. Verify that the deployment was created:

**kubectl get deployments**

✅ Expected Output: You should see a deployment named my-app.

1. Check the running Pods:

**kubectl get pods**

✅ Expected Output: You should see a Pod running the **NGINX container**.

**📌 Step 3: Expose the App (3 Minutes)**

We need to expose the NGINX service so it can be accessed from our browser.

1. Expose the deployment as a **service**:

**kubectl expose deployment my-app --type=NodePort --port=80**

1. Get the **Minikube service URL**:

**minikube service my-app --url**

✅ Expected Output: A URL like http://192.168.49.2:32100 will be shown.

1. Open the URL in your **web browser**, and you should see the **NGINX welcome page**! 🎉

**📌 Step 4: Scale the Application (3 Minutes)**

Now, let’s scale our application to **handle more traffic**.

1. Scale up the deployment to **3 replicas**:

**kubectl scale deployment my-app --replicas=3**

1. Verify that more Pods are running:

**kubectl get pods**

✅ Expected Output: You should now see **three running Pods** instead of one.

1. Check the deployment status:

**kubectl get deployments**

✅ Expected Output: The **replicas column** should show 3/3.

**📌 Step 5: Clean Up the Cluster (2 Minutes)**

After the exercise, you can delete the deployment and service to free up resources.

1. Delete the deployment:

**kubectl delete deployment my-app**

1. Delete the service:

**kubectl delete service my-app**

1. Stop Minikube:

**minikube stop**

1. (Optional) Delete Minikube completely:

**minikube delete**