Lab Handout: Setting Up Argo CD on Docker Desktop Kubernetes

# 1. Enable Kubernetes in Docker Desktop

1. Open Docker Desktop → Settings → Kubernetes.  
2. Check "Enable Kubernetes".  
3. Wait for the cluster to initialize.  
  
Verify setup:  
kubectl get nodes

# 2. Create Namespace for Argo CD

Run the following command:  
kubectl create namespace argocd

# 3. Install Argo CD

Apply the official Argo CD manifest:  
kubectl apply -n argocd -f https://raw.githubusercontent.com/argoproj/argo-cd/stable/manifests/install.yaml  
  
Verify pods:  
kubectl get pods -n argocd

# 4. Expose Argo CD Server (Docker Desktop Fix)

Change the argocd-server service to LoadBalancer type:  
kubectl patch svc argocd-server -n argocd -p '{"spec": {"type": "LoadBalancer"}}'  
  
Check service details:  
kubectl get svc -n argocd argocd-server  
  
Example output:  
NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE  
argocd-server LoadBalancer 10.96.20.10 localhost 80:30080/TCP,443:30443/TCP 5m  
  
On Docker Desktop, EXTERNAL-IP is always localhost.  
  
Access Argo CD UI → https://localhost:30443

# 5. Get Initial Admin Password

Run the following command to get the default admin password:  
kubectl -n argocd get secret argocd-initial-admin-secret -o jsonpath="{.data.password}" | base64 -d; echo

# 6. Login to Argo CD

CLI Login:  
argocd login localhost:30443 --username admin --password <PASSWORD> --insecure  
  
Web UI Login:  
- URL: https://localhost:30443  
- Username: admin  
- Password: (retrieved above)

# 7. Deploy Sample Application (Guestbook)

Create application.yaml:  
apiVersion: argoproj.io/v1alpha1  
kind: Application  
metadata:  
 name: guestbook  
 namespace: argocd  
spec:  
 destination:  
 namespace: default  
 server: https://kubernetes.default.svc  
 source:  
 repoURL: https://github.com/argoproj/argocd-example-apps  
 path: guestbook  
 targetRevision: HEAD  
 syncPolicy:  
 automated: {}  
  
Apply it:  
kubectl apply -f application.yaml -n argocd  
  
Check status:  
kubectl get applications -n argocd  
  
Go to Argo CD Web UI → Verify Guestbook app deployed.

# Summary

You have successfully set up Argo CD on Docker Desktop Kubernetes and deployed a sample Guestbook application.  
  
Key Steps:  
- Enabled Kubernetes on Docker Desktop  
- Installed Argo CD into the cluster  
- Exposed Argo CD UI on https://localhost:30443  
- Logged in with admin credentials  
- Deployed and managed an application via GitOps