

Software Construction and Development

Quiz Activity#2



Group Members

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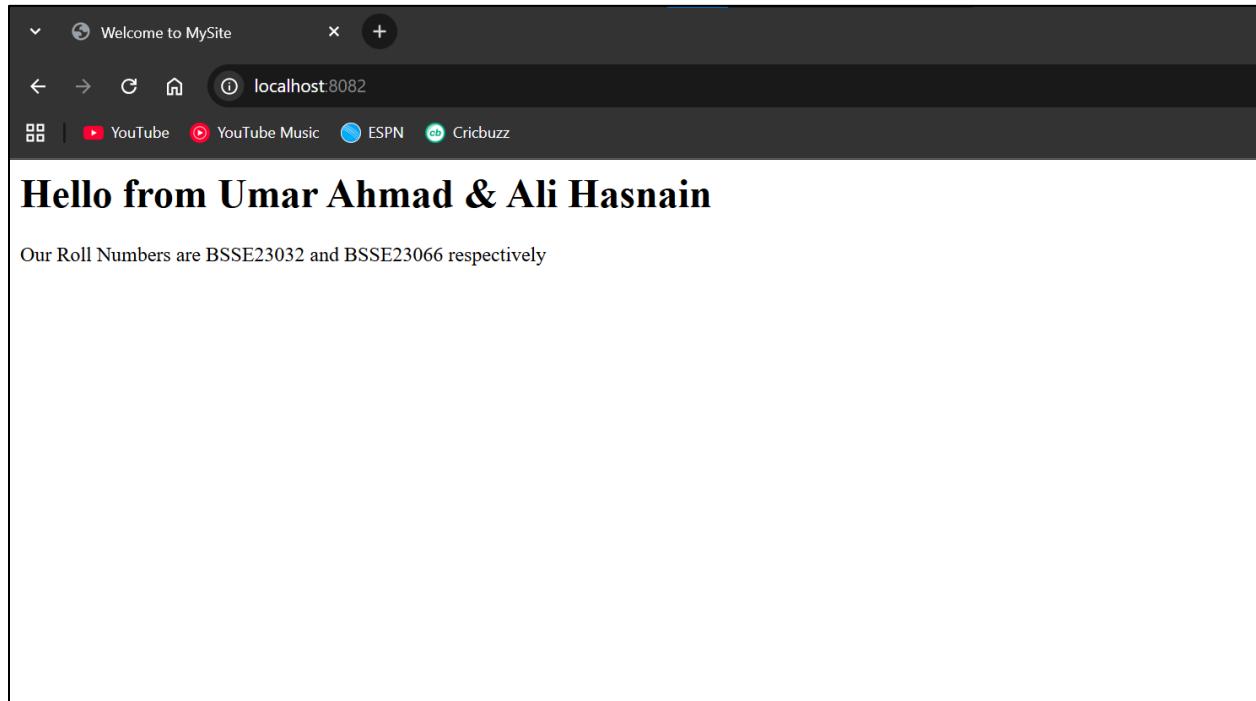
GitHub Link: <https://github.com/BSSE23032/scd-quiz-activity2-32-66.git>

Phase 1:

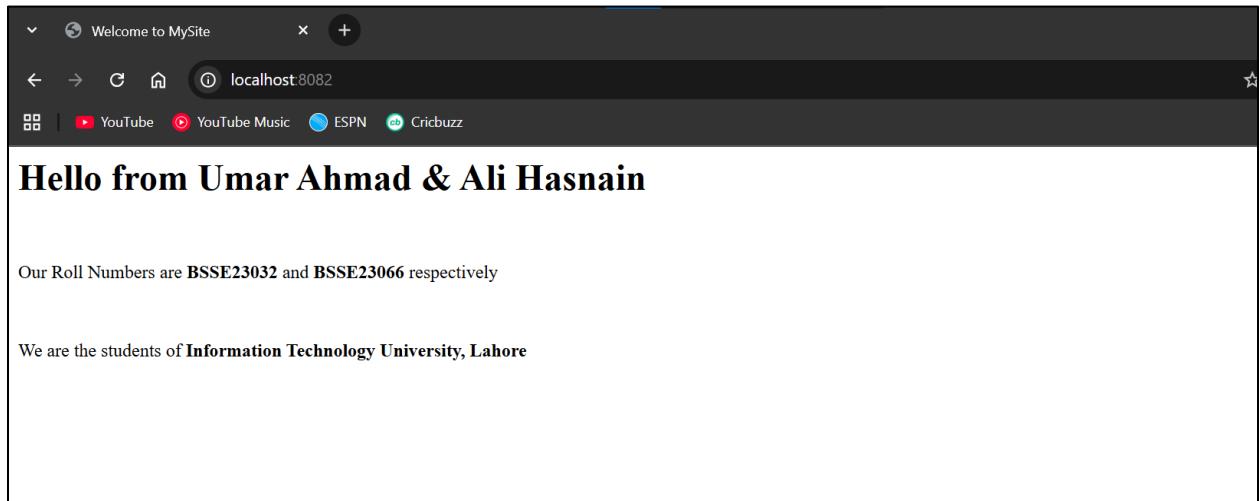


The terminal window shows the following Docker commands and their output:

```
Terminal +  
7ecf567ea070 2 years ago      47MB  
docker/desktop-storage-provisioner      v2.0  
115d77ef6e2  4 years ago      59.2MB  
PS C:\Users\Lenovo\Documents\Asssignments\SEMESTER-V\SCD\project> docker run -d -p 8082:80 mysite:v1  
404e483425c46d0570b6c302ab174ffff5bef47d8d60e6fc343859704f713adbd  
PS C:\Users\Lenovo\Documents\Asssignments\SEMESTER-V\SCD\project> docker ps  
CONTAINER ID   IMAGE          COMMAND       CREATED        STATUS        PORTS  
NAMES          NAMES          COMMAND       CREATED        STATUS        PORTS  
404e483425c4  mysite:v1    "/docker-entrypoint..."  7 seconds ago  Up 6 seconds  0.0.0.0:8082->80/tcp, [  
::]:8082->80/tcp  focused_nobel  
PS C:\Users\Lenovo\Documents\Asssignments\SEMESTER-V\SCD\project>  
RAM 4.89 GB CPU 12.26% Disk: 7.97 GB used (limit 1006.85 GB) ↴ ⓘ Update
```



AFTER CHANGES:



Phase 2:

The screenshot shows a code editor interface with a dark theme. The left sidebar shows a project structure under "PROJECT" with files "index.html", "service.yaml", and "Dockerfile". The right pane displays the content of "deployment.yaml".

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: mysite-deployment
spec:
  replicas: 1
  selector:
    matchLabels:
      app: mysite
  template:
    metadata:
      labels:
        app: mysite
    spec:
      containers:
        - name: mysite
          image: mysite:v2
          ports:
            - containerPort: 80
```

The screenshot shows the Visual Studio Code interface. The Explorer sidebar on the left displays a project structure with a file named 'service.yaml' selected. The code editor on the right contains the following YAML configuration for a Kubernetes service:

```
apiVersion: v1
kind: Service
metadata:
  name: mysite-service
spec:
  type: NodePort
  selector:
    app: mysite
  ports:
    - port: 80
      targetPort: 80
      nodePort: 30001
```

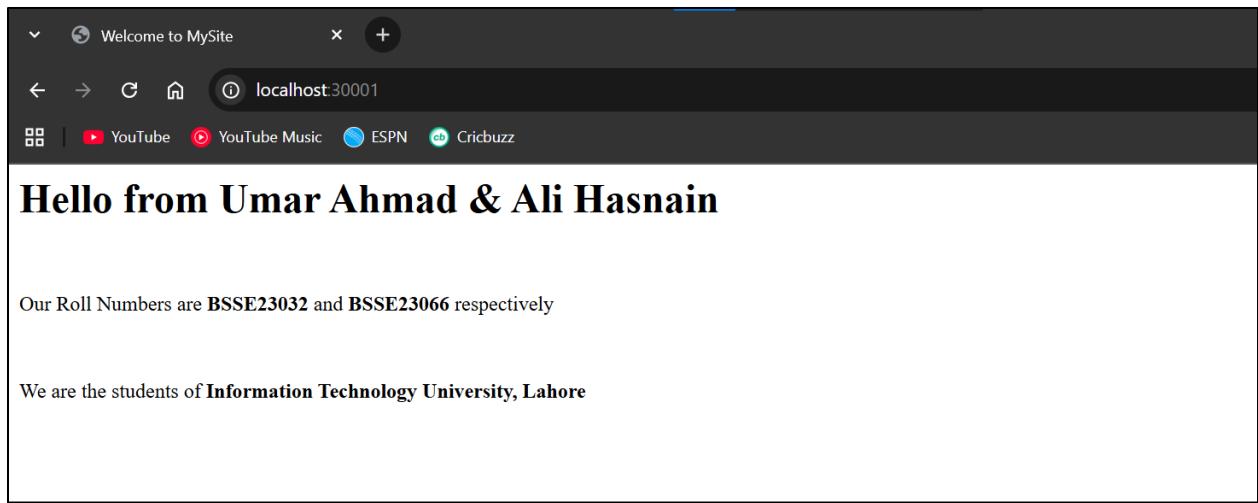
The screenshot shows a terminal window with the following command history:

```
PS C:\Users\Lenovo\Documents\Asssignments\SEMESTER-V\SCD\project> kubectl apply -f deployment.yaml
error: the path "deployment.yaml" does not exist
PS C:\Users\Lenovo\Documents\Asssignments\SEMESTER-V\SCD\project> kubectl apply -f kubernetes/deployment.yaml
deployment.apps/mysite-deployment created
PS C:\Users\Lenovo\Documents\Asssignments\SEMESTER-V\SCD\project> kubectl get pods
NAME           READY   STATUS    RESTARTS   AGE
mysite-deployment-5445f47696-fs9sx  1/1     Running   0          65s
PS C:\Users\Lenovo\Documents\Asssignments\SEMESTER-V\SCD\project>
```

At the bottom, system status information is displayed: RAM 3.57 GB, CPU 5.67%, Disk: 8.24 GB used (limit 1006.85 GB).

The screenshot shows a terminal window with the following command history:

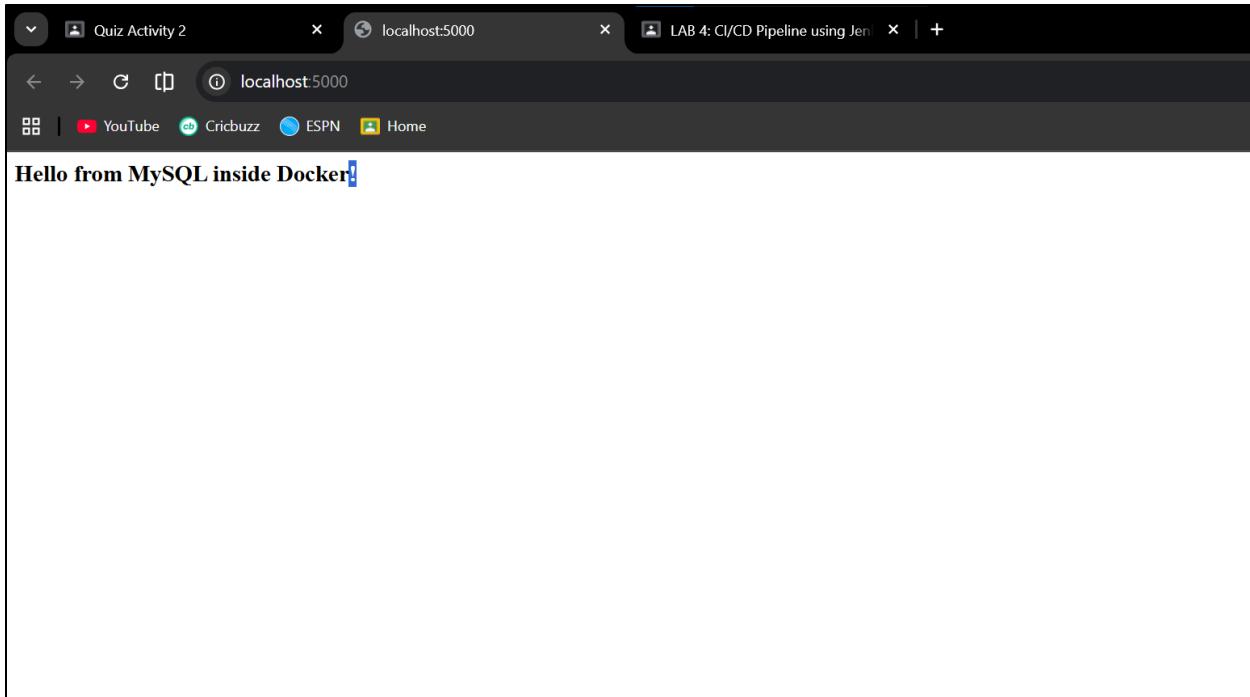
```
PS C:\Users\Lenovo\Documents\Asssignments\SEMESTER-V\SCD\project> kubectl apply -f kubernetes/service.yaml
service/mysite-service created
PS C:\Users\Lenovo\Documents\Asssignments\SEMESTER-V\SCD\project> kubectl get svc
NAME      TYPE      CLUSTER-IP      EXTERNAL-IP      PORT(S)      AGE
kubernetes   ClusterIP   10.96.0.1      <none>        443/TCP      21m
mysite-service   NodePort   10.110.0.203  <none>        80:30001/TCP  15s
PS C:\Users\Lenovo\Documents\Asssignments\SEMESTER-V\SCD\project>
```



Phase 3:

A screenshot of a code editor interface. On the left is the "EXPLORER" sidebar showing a project structure with "app", "web" (containing "app.py" and "Dockerfile"), "kubernetes", and "Dockerfile". The "docker-compose.yml" file is selected in the center tab bar. The content of the "docker-compose.yml" file is as follows:

```
version: '3.8'
services:
  web:
    build: ./app/web
    ports:
      - "5000:5000"
    depends_on:
      - db
  db:
    image: mysql:8.0
    restart: always
    environment:
      MYSQL_ROOT_PASSWORD: root
      MYSQL_DATABASE: studentdb
    volumes:
      - db_data:/var/lib/mysql
volumes:
  db_data:
```

A screenshot of the Docker Desktop application interface. The left sidebar shows navigation options like Ask Gordon, Images, Volumes, Kubernetes, Builds, Models, MCP Toolkit, Docker Hub, Docker Scout, and Extensions. The main area is titled "Containers" and displays a table of running containers. Key statistics at the top include "Container CPU usage" (0.75% / 800%) and "Container memory usage" (417.07MB / 7.5GB). The table has columns for Name, Container ID, Image, Port(s), CPU (%), and Actions. Nine items are listed, including "serene_wilbur", "inspiring_tesla", "mysite_v2", "k8s_mysite_my", "project", "db-1", and "web-1".

	Name	Container ID	Image	Port(s)	CPU (%)	Actions
serene_wilbur	2c0a11ce6003	cicd-demo:	8081:80	0%	1	⋮ ⚡ ⚡ ⚡ ⚡ ⚡ ⚡ ⚡ ⚡
inspiring_tesla	dab0d9af184f	cicd-demo:	8081:80	0%	1	⋮ ⚡ ⚡ ⚡ ⚡ ⚡ ⚡ ⚡ ⚡
mysite_v2	15ae3f1e46ad	mysite:v2	8082:80 ↗	0%	1	⋮ ⚡ ⚡ ⚡ ⚡ ⚡ ⚡ ⚡ ⚡
k8s_mysite_my	b9d35a013a29	1acf12417:		0%	5	⋮ ⚡ ⚡ ⚡ ⚡ ⚡ ⚡ ⚡ ⚡
project	-	-	-	0.75%	2	⋮ ⚡ ⚡ ⚡ ⚡ ⚡ ⚡ ⚡ ⚡
db-1	ef54d5b4252a	mysql:8.0		0.74%	2	⋮ ⚡ ⚡ ⚡ ⚡ ⚡ ⚡ ⚡ ⚡
web-1	7cf25b040fd2	project-web	5000:5000 ↗	0.01%	2	⋮ ⚡ ⚡ ⚡ ⚡ ⚡ ⚡ ⚡ ⚡

Showing 9 items

Phase 4:

Jenkins / Quiz-2-Activity

Quiz-2-Activity

Pipeline script from SCM

Stage View

Declarative: Checkout SCM	Checkout Code	Build Docker Image	Test Image	Deploy to Kubernetes
1s	964ms	3s	415ms	1s
Dec 18 04:37	No Changes			
1s	964ms	3s	415ms	1s

Average stage times:
(full run time: ~9s)

Permalinks

```
d6360cd..3426906 main -> main
umar_ahmad@DESKTOP-VPNORBF:/mnt/c/Users/Lenovo/Documents/Asssignments/SEMESTER-V/SCD/project$ git log -1
commit 34269065b53d002231313416841f9a05c0376635 (HEAD -> main, origin/main)
Author: Umar Ahmad <bsse23032@itu.edu.pk>
Date:   Thu Dec 18 04:36:52 2025 +0500

    Fix test stage in Jenkins pipeline
umar_ahmad@DESKTOP-VPNORBF:/mnt/c/Users/Lenovo/Documents/Asssignments/SEMESTER-V/SCD/project$
```

Name	Container ID	Image	Port(s)	CPU (%)	Actions
Show all ports (2)					

Terminal

```
PS C:\Users\Lenovo\Documents\Asssignments\SEMESTER-V\SCD\project> kubectl get deployments
>>
NAME      READY  UP-TO-DATE  AVAILABLE  AGE
mysite-deployment  1/1     1          1         113m
PS C:\Users\Lenovo\Documents\Asssignments\SEMESTER-V\SCD\project> kubectl get pods
NAME                  READY  STATUS    RESTARTS  AGE
mysite-deployment-54b6494b5f-pflct  1/1     Running   0        5m5s
PS C:\Users\Lenovo\Documents\Asssignments\SEMESTER-V\SCD\project> kubectl get svc
NAME      TYPE      CLUSTER-IP      EXTERNAL-IP      PORT(S)      AGE
kubernetes  ClusterIP  10.96.0.1  <none>        443/TCP      132m
mysite-service  NodePort  10.110.0.203  <none>        80:30001/TCP  111m
PS C:\Users\Lenovo\Documents\Asssignments\SEMESTER-V\SCD\project>
```

THE END