Experiment -1.4

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Section/Group: 21BCD-1
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Subject Name: Docker and Kubernetes
Subject Code:21CSH-349

1. Aim/Overview of the practical:

To manage Volumes and Containers for storing and retrieval of data in Docker.

2. Task to be done:

To manage Volumes and Containers in Docker for data storage and retrieval we would follow these steps:

1. Create a Docker volume using the command docker volume create ‹volume_name›.
2. List available volumes with docker volume ls.
3. Inspect volume details with docker volume inspect ‹volume_name› to find the Mountpoint.
4. Run a Docker container with the -v flag to mount the volume to a specific path in the container.
5. Store and retrieve data by interacting with the mounted volume within the container.

3. Theory:

- DOCKER VOLUME:

In Docker, a volume is a mechanism for persisting data generated by and used by Docker containers. Volumes are separate from the container's file system and exist outside the container itself. They are typically used for storing data that should persist even if the container is stopped or removed.

4. Steps for experiment/practical:

```
Windows PowerShell
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Install the latest PowerShell for new features and improvements! https

PS C:\Users\HP> docker volume create my_volume
my_volume
```

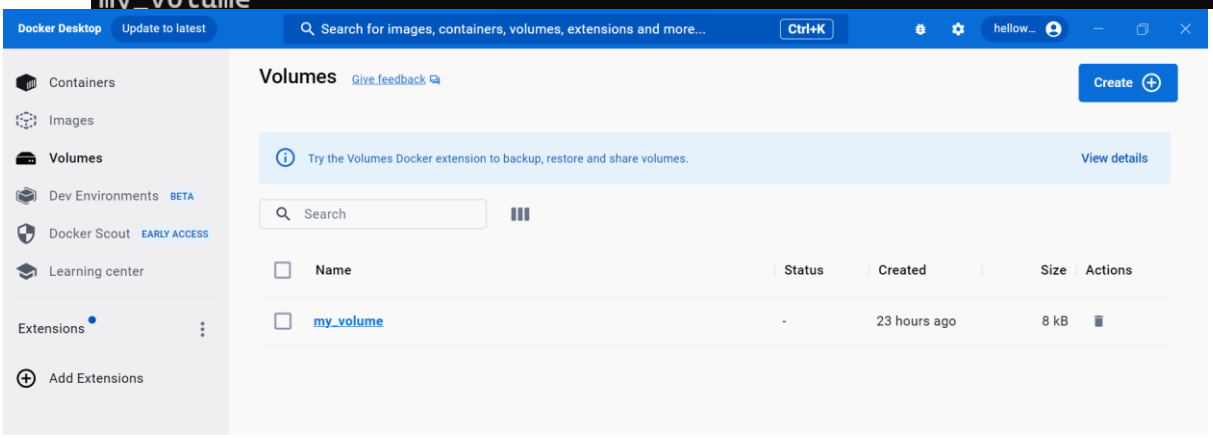


```
Windows PowerShell
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PS C:\Users\HP> docker volume create my_volume
my_volume
PS C:\Users\HP> docker volume ls
DRIVER    VOLUME NAME
local     my_volume
PS C:\Users\HP>
```

.

```
PS C:\Users\HP> docker volume inspect my_volume
[
    {
        "CreatedAt": "2023-09-03T07:30:11Z",
        "Driver": "local",
        "Labels": null,
        "Mountpoint": "/var/lib/docker/volumes/my_volume/_data",
        "Name": "my_volume",
        "Options": null,
        "Scope": "local"
    }
]
PS C:\Users\HP>
```

```
Command Prompt

Microsoft Windows [Version 10.0.22621.2215]
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C:\Users\HP>docker run -v nikhil_singh:/usr/share/nginx/html:ro -d -p80:80 nginx
6a72a45c211770a65e77295d22bd4c0f5fd4a45590a1ee803e98e96495174790

C:\Users\HP>
```

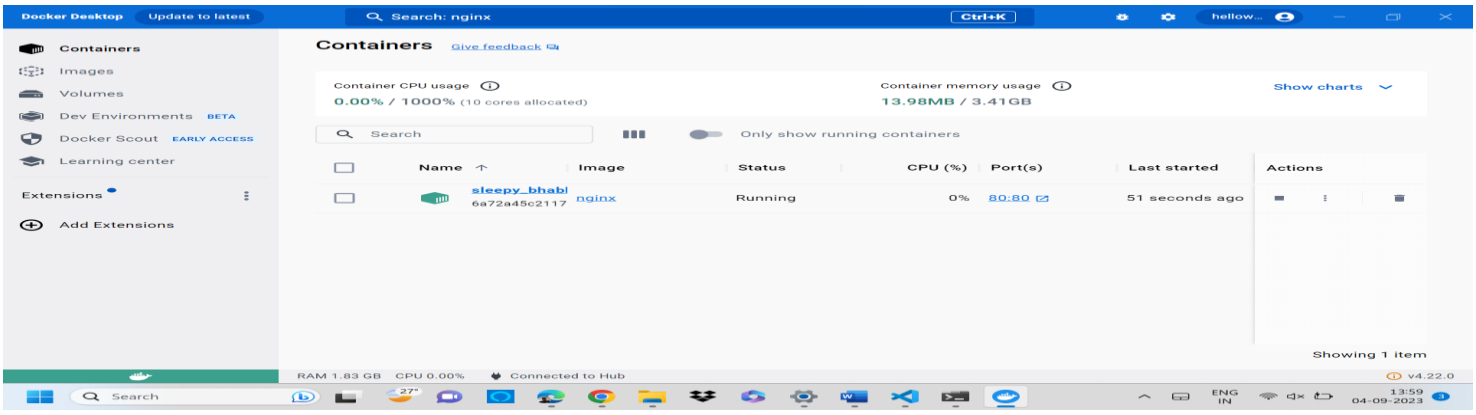

```
C:\Users\HP>docker run -v "C:\Users\HP\OneDrive\Desktop\file":/usr/share/nginx/html:ro -d -p80:80 nginx
e56c9b3fd2918bce5637673570124139bb12b9cd22be371a67d2f6d3d0257740

C:\Users\HP>
```

Durhsh patel

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1. Result/Output/Writing Summary:

After the experiment, we were able to to manage Volumes and Containers for storing and retrieval of data in Docker.

2. Learning outcomes (What I have learnt):

1. Learn about docker
2. Learn how to Pull a Docker image from Docker Hub.
3. Learn how to Run a container from the pulled image.
4. Learn to manage volumes and conatiner

Evaluation Grid (To be created as per the SOP and Assessment guidelines by the faculty):

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.			
2.			
3.			