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**Batch:** 2

**Roll no:** 29

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**Subject:** Cloud Computing

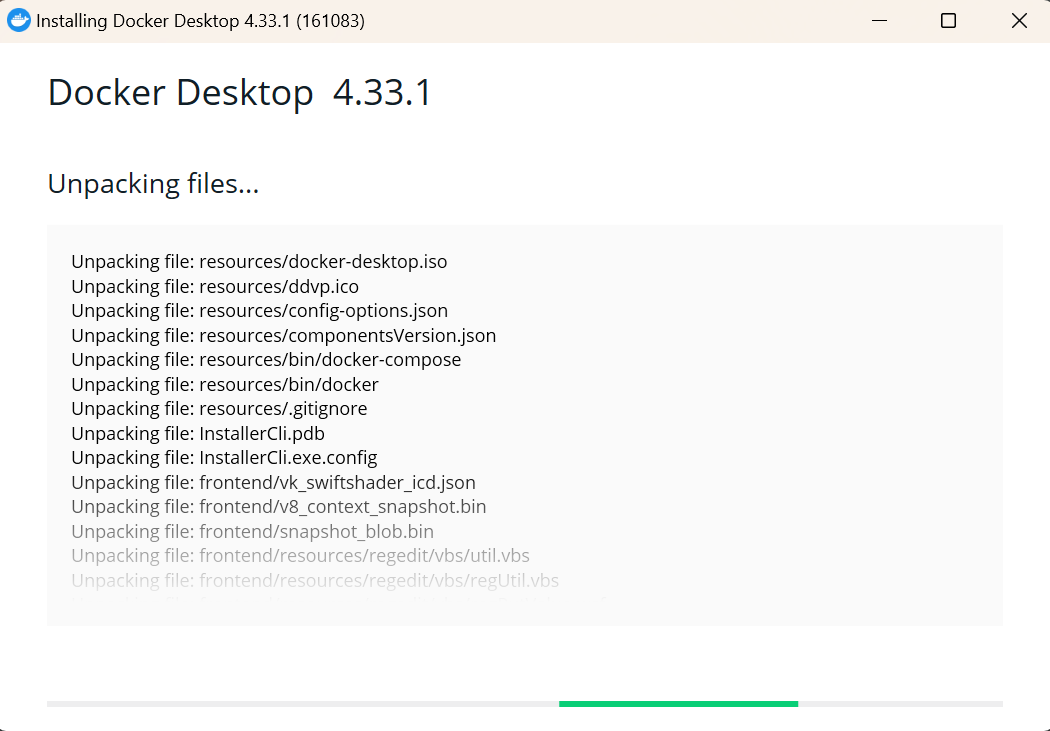
**ASSIGNMENT NO: 05**

**Problem Statement:** To install docker on window/Linux and build docker image from docker hub.

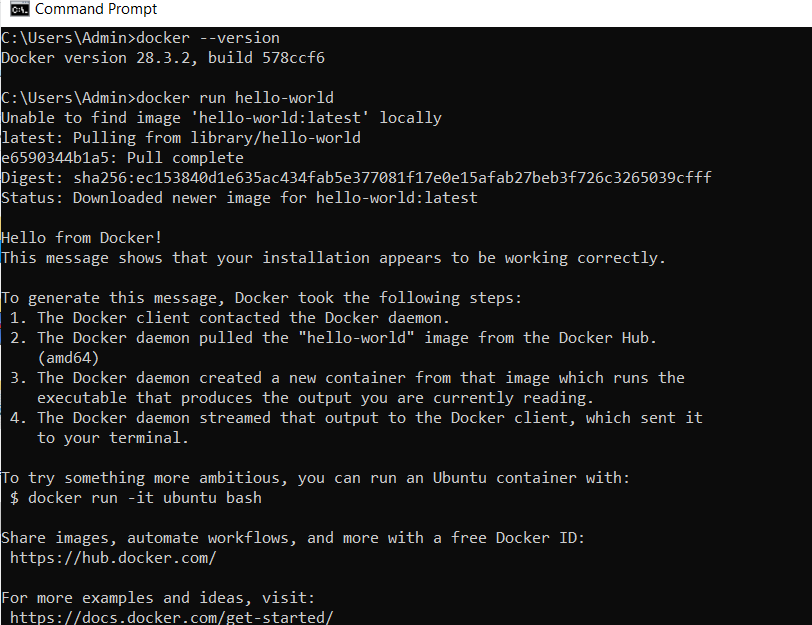
**What is Docker?**

Docker is an open-source platform that automates the deployment, scaling, and management of applications using containerization. Containers allow you to package an application and its dependencies into a standardized unit (container) that runs consistently across different computing environments. This ensures that the application behaves the same regardless of where it is deployed, whether on a developer’s local machine, a testing environment, or a production server.

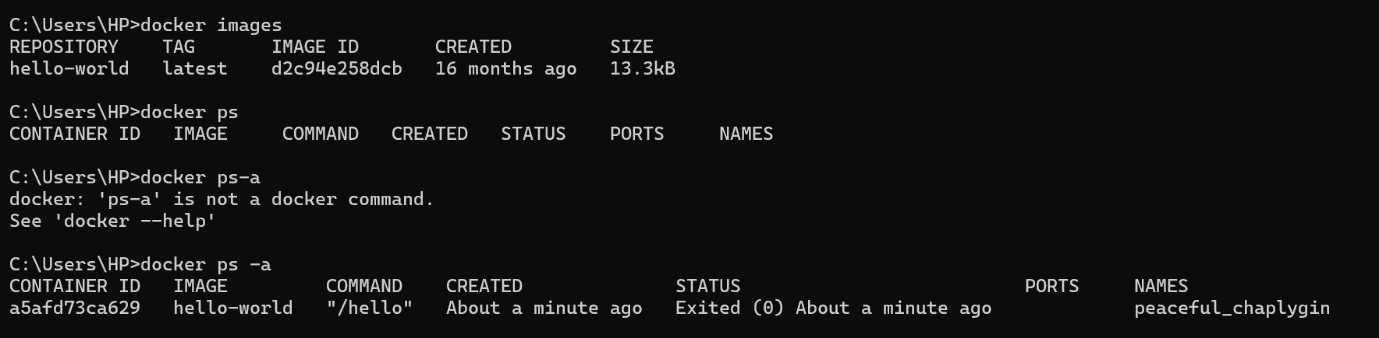
**STEP 01:** Download and Install Docker Desktop from [htts://docs.docker.com/desktop/install/windows-install/](https://docs.docker.com/desktop/install/windows-install/)



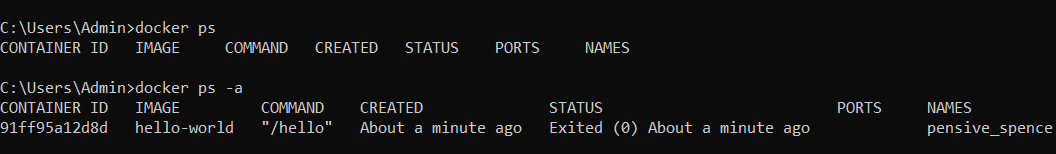
**Step 02:** Now go to command prompt and type ‘docker run hello-world’



* Hello.c image is downloaded from: <https://github.com/docker-library/hello-world> for the source code of the hello binary included in this image



* docker ps
* docker ps -a: This command displays all images including exited running ones

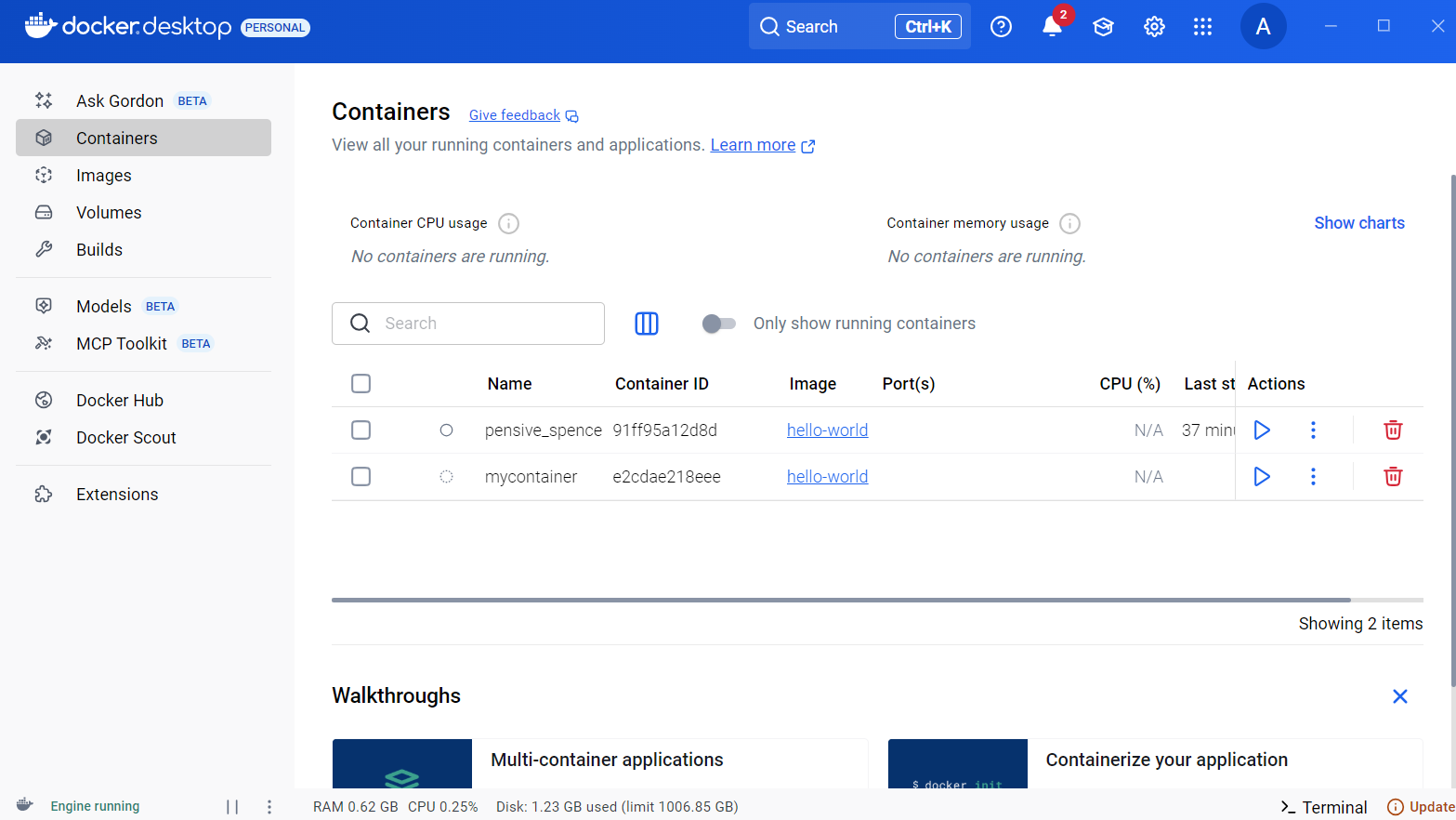


**Step 03:** Create an image & containerize it

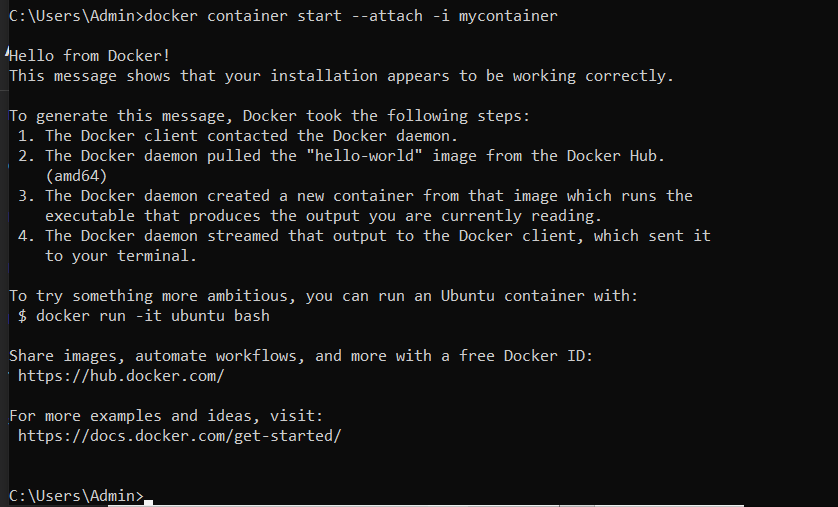
* Open cmd and paste

*docker container create -I -t –-name mycontainer hello-world*

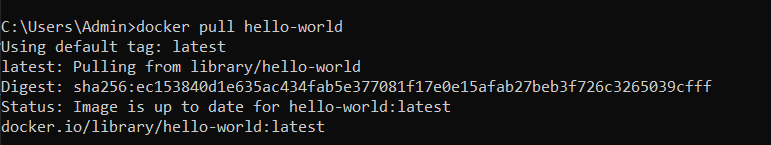
****

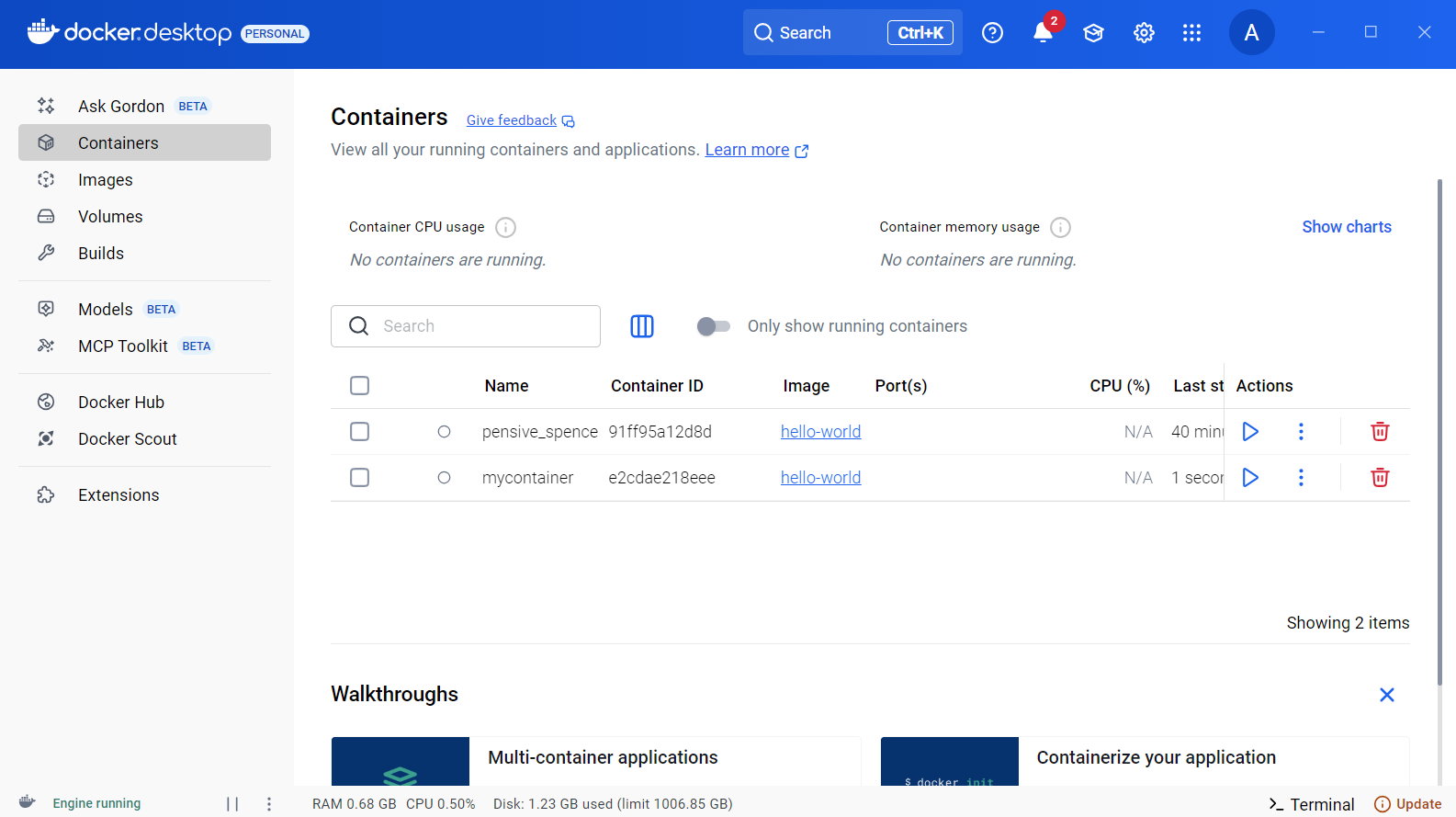
****

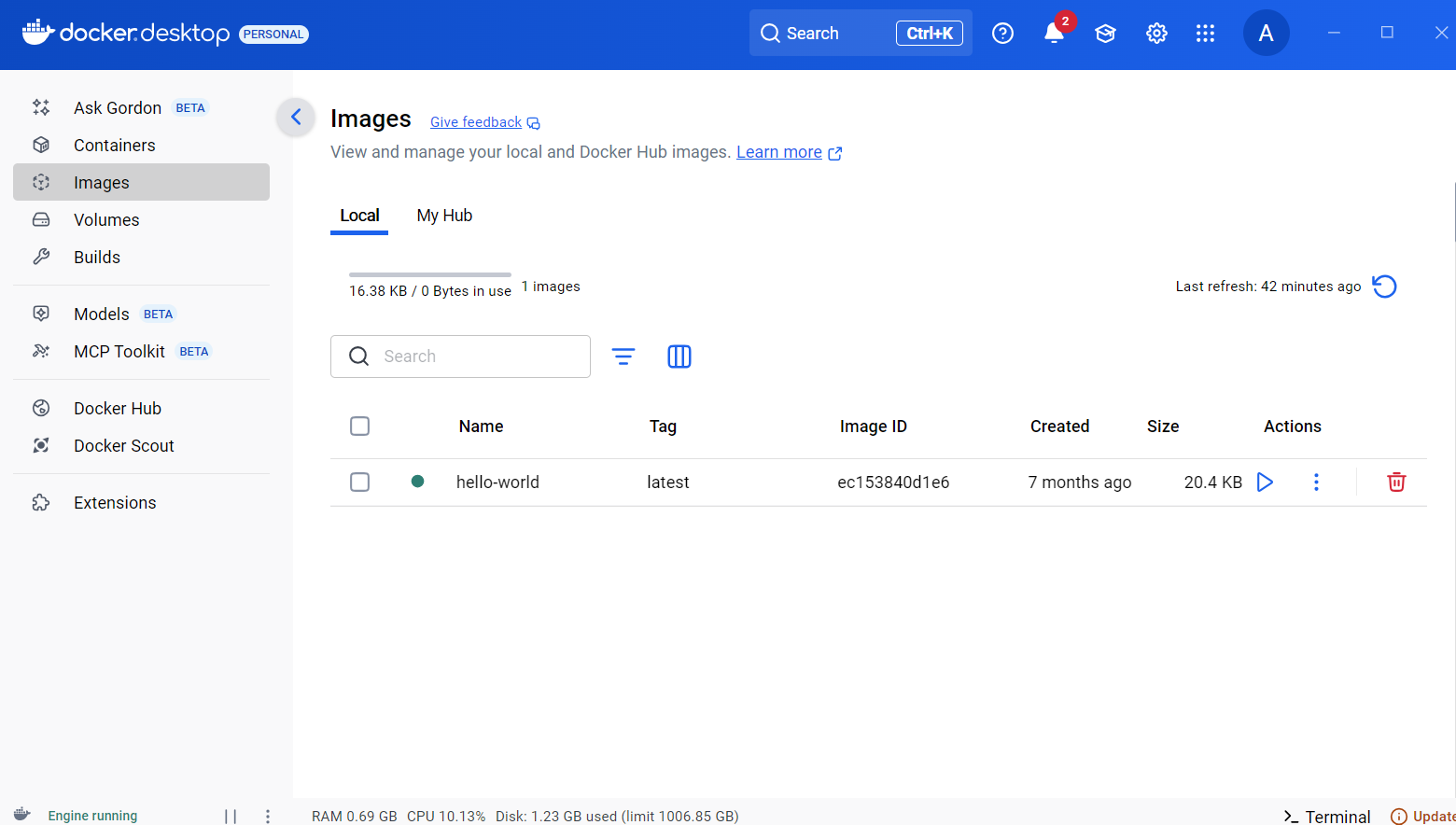
*docker container start –attach -i mycontainer*



*docker pull hello-world*

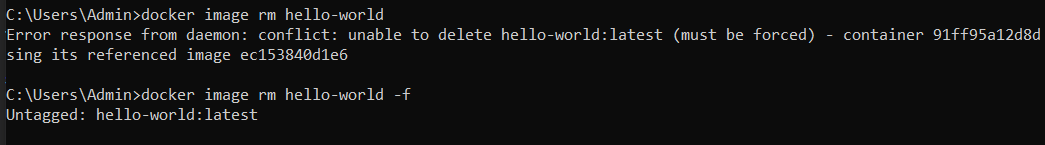
**

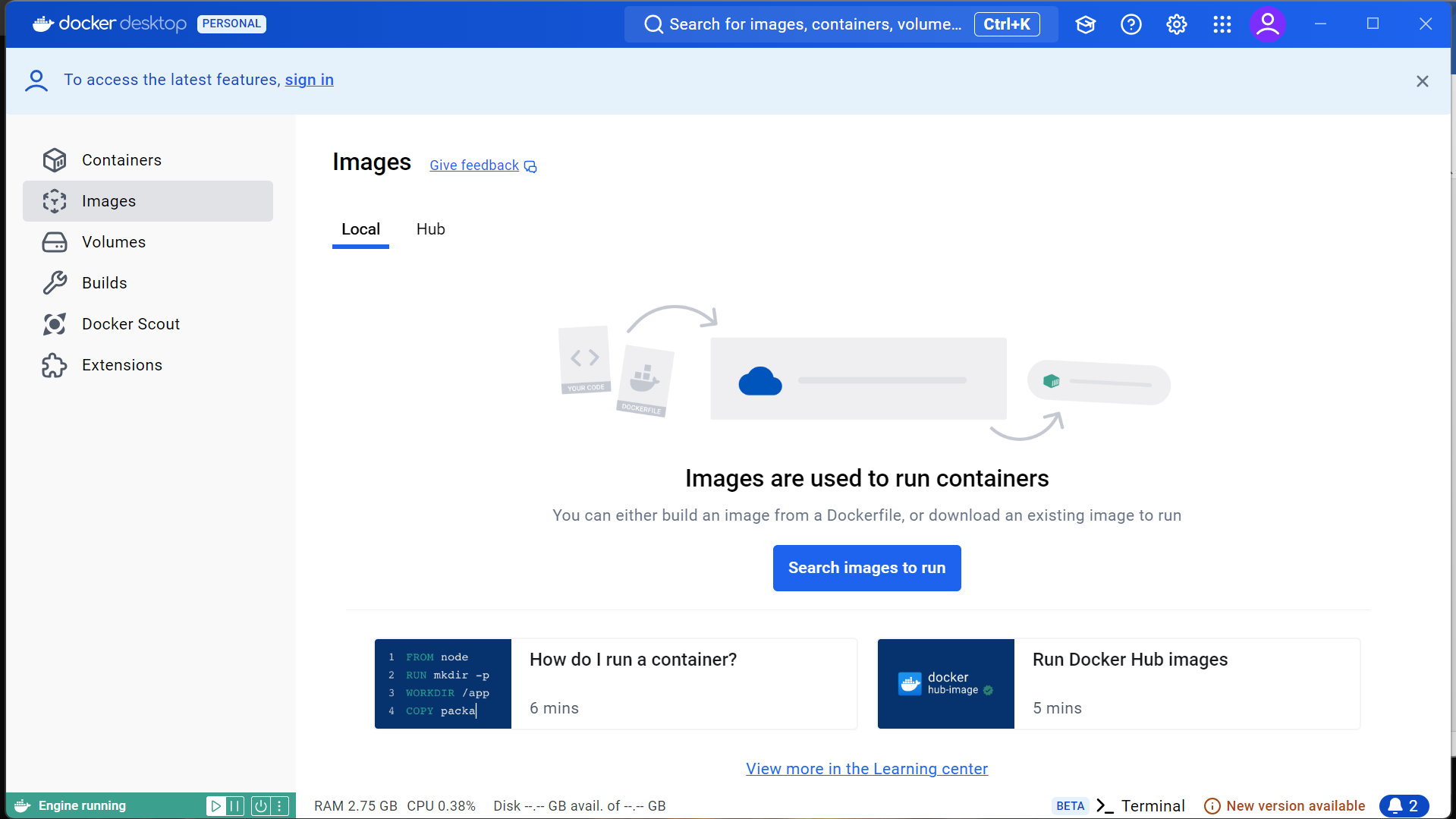
**

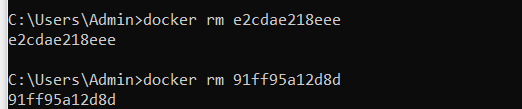


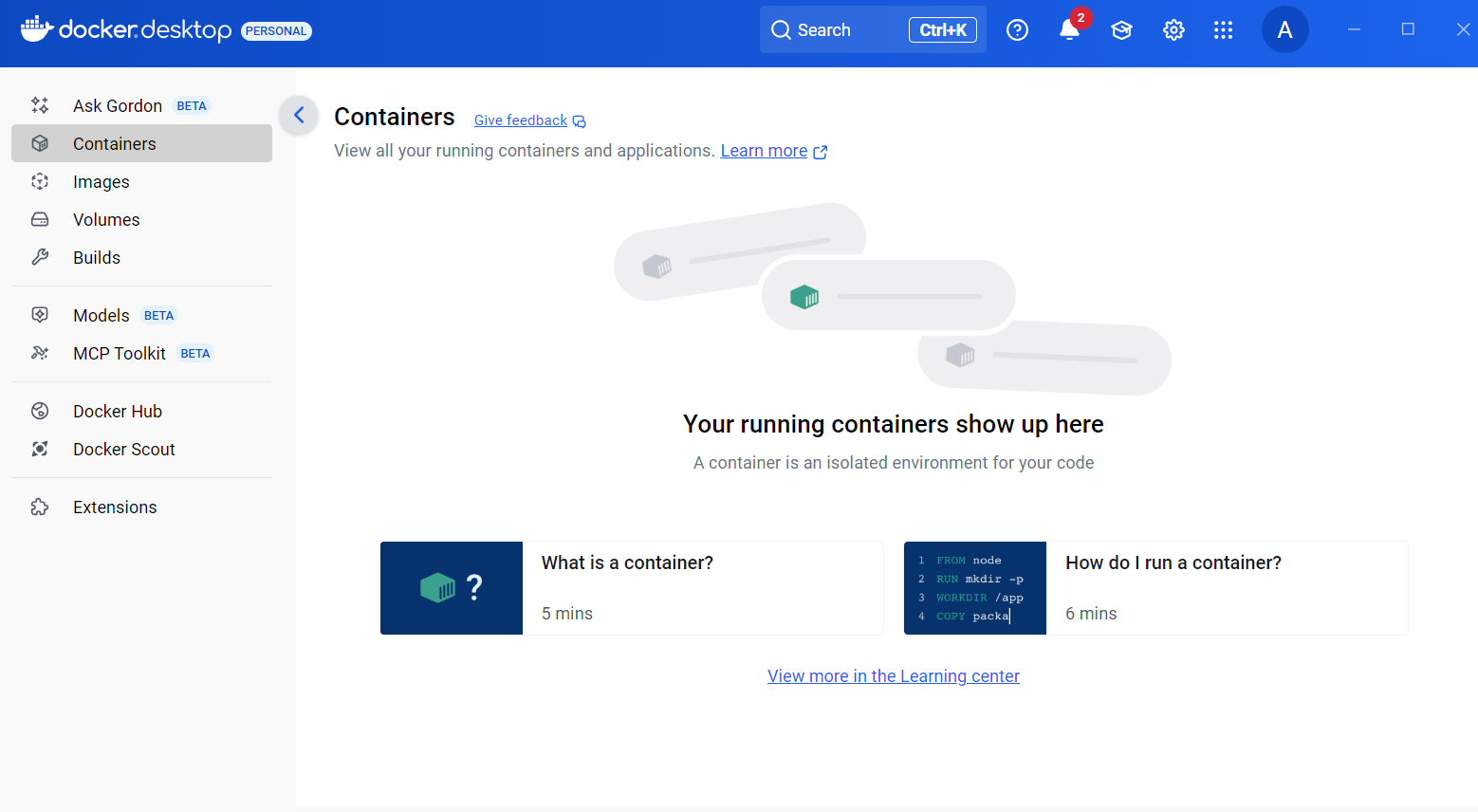
**Step 04:** Remove docker image

* *docker image rm hello-world*
* If image is running ‘*docker image rm hello-world -f’*









**Step 05:** Create an additional application (Python Data visualization)

* Create a simple python app

*import numpy as np*

*import matplotlib.pyplot as pl*

*x=np.arange(10)*

*y=x\*\*2*

*print (“This is the squaring function”)*

*print(x,y)*

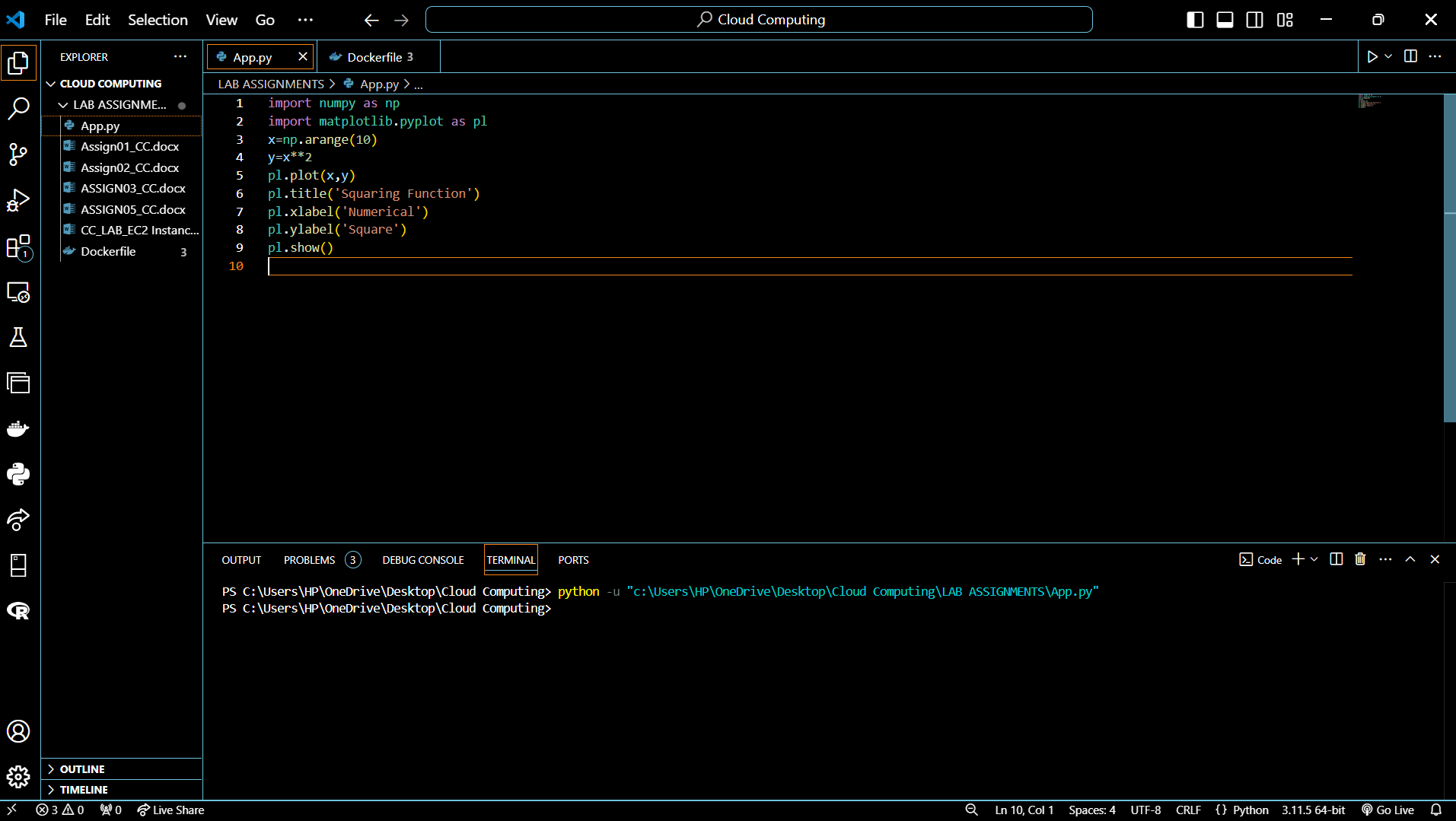
*pl.plot(x,y)*

*pl.title('Squaring Function')*

*pl.xlabel('Numerical')*

*pl.ylabel('Square')*

*pl.show()*





* Create a docker file and ensure to include RUN pip install ~library-name~

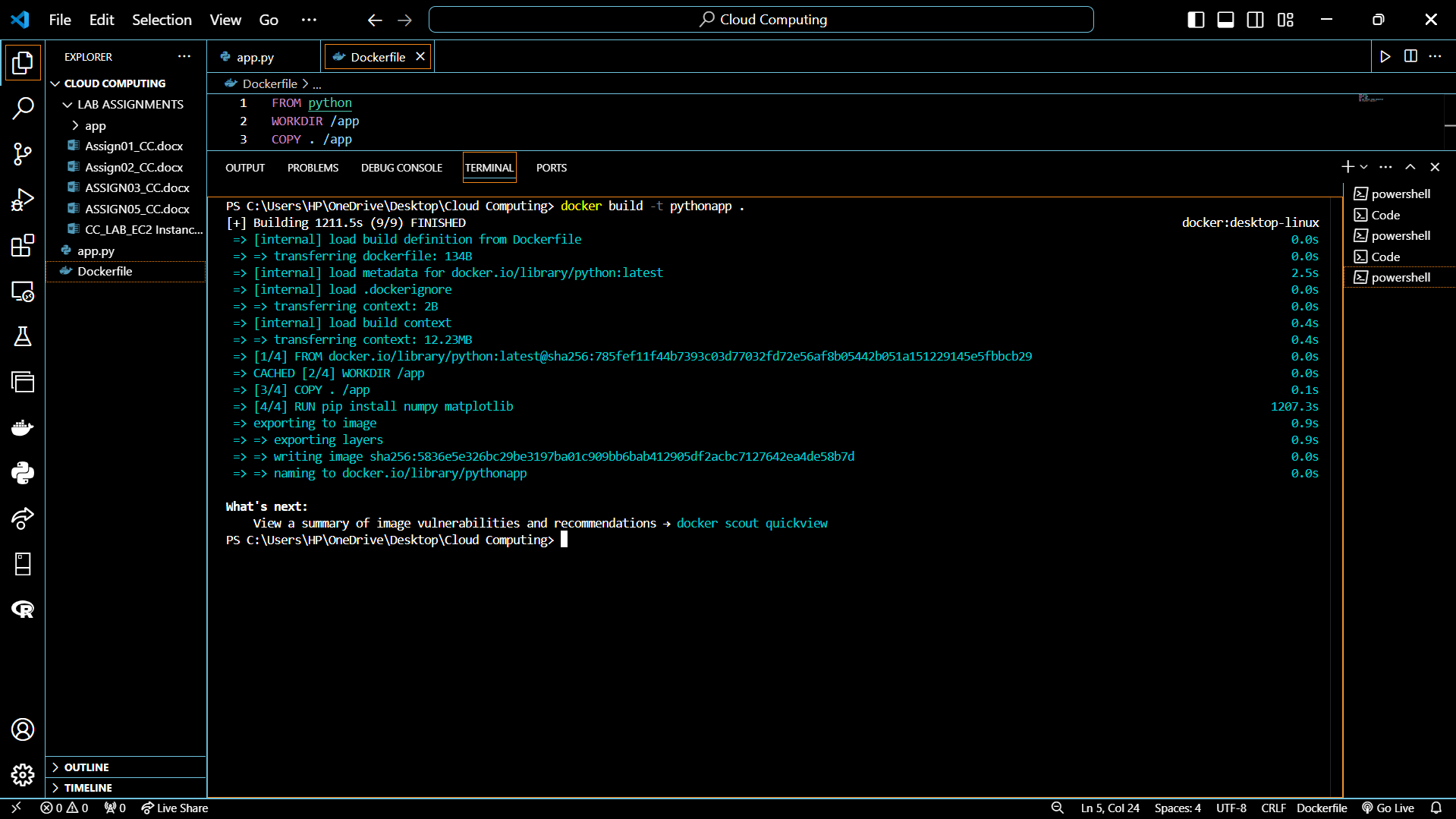
FROM python

WORKDIR /app

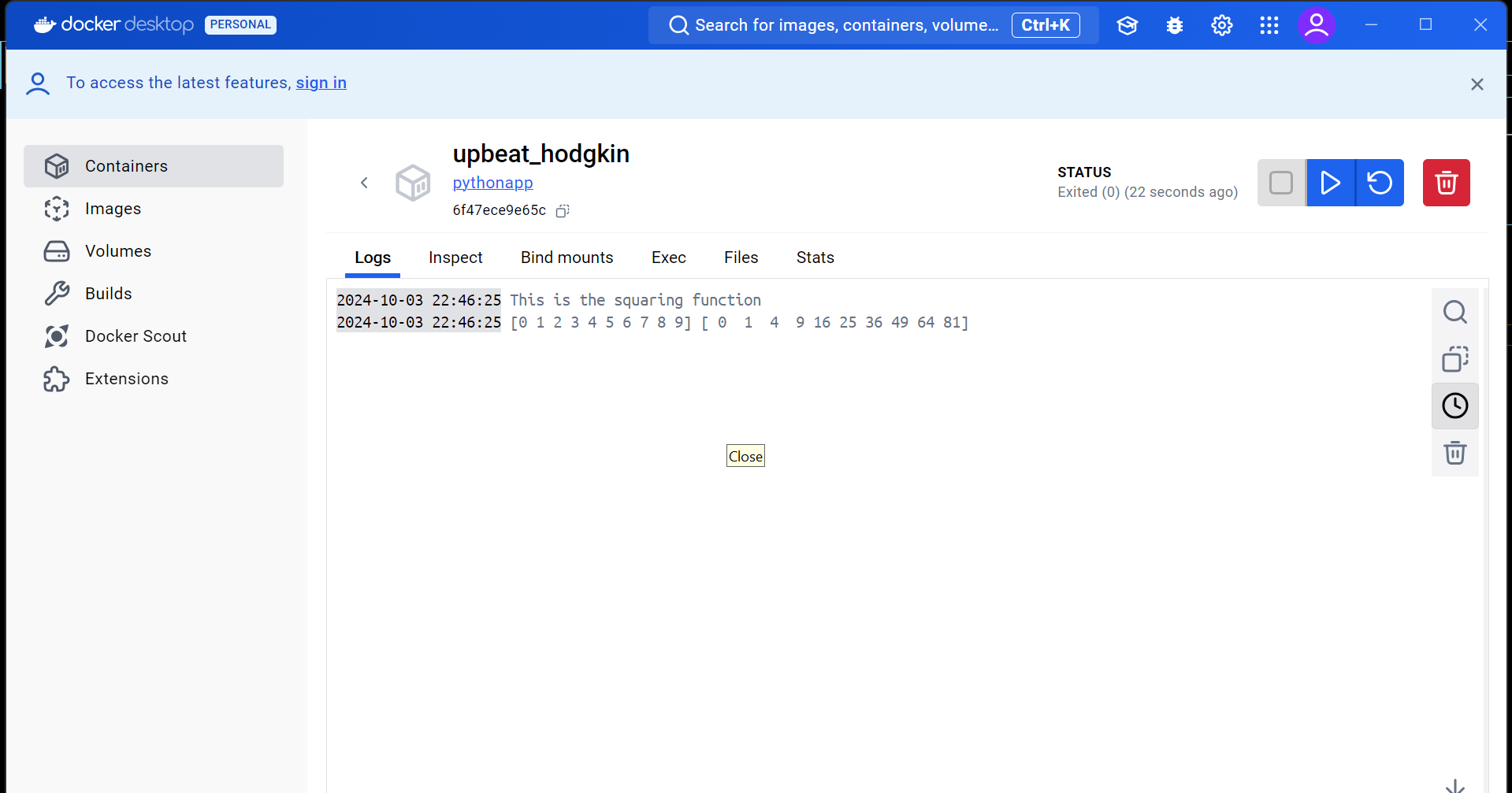
COPY ./app

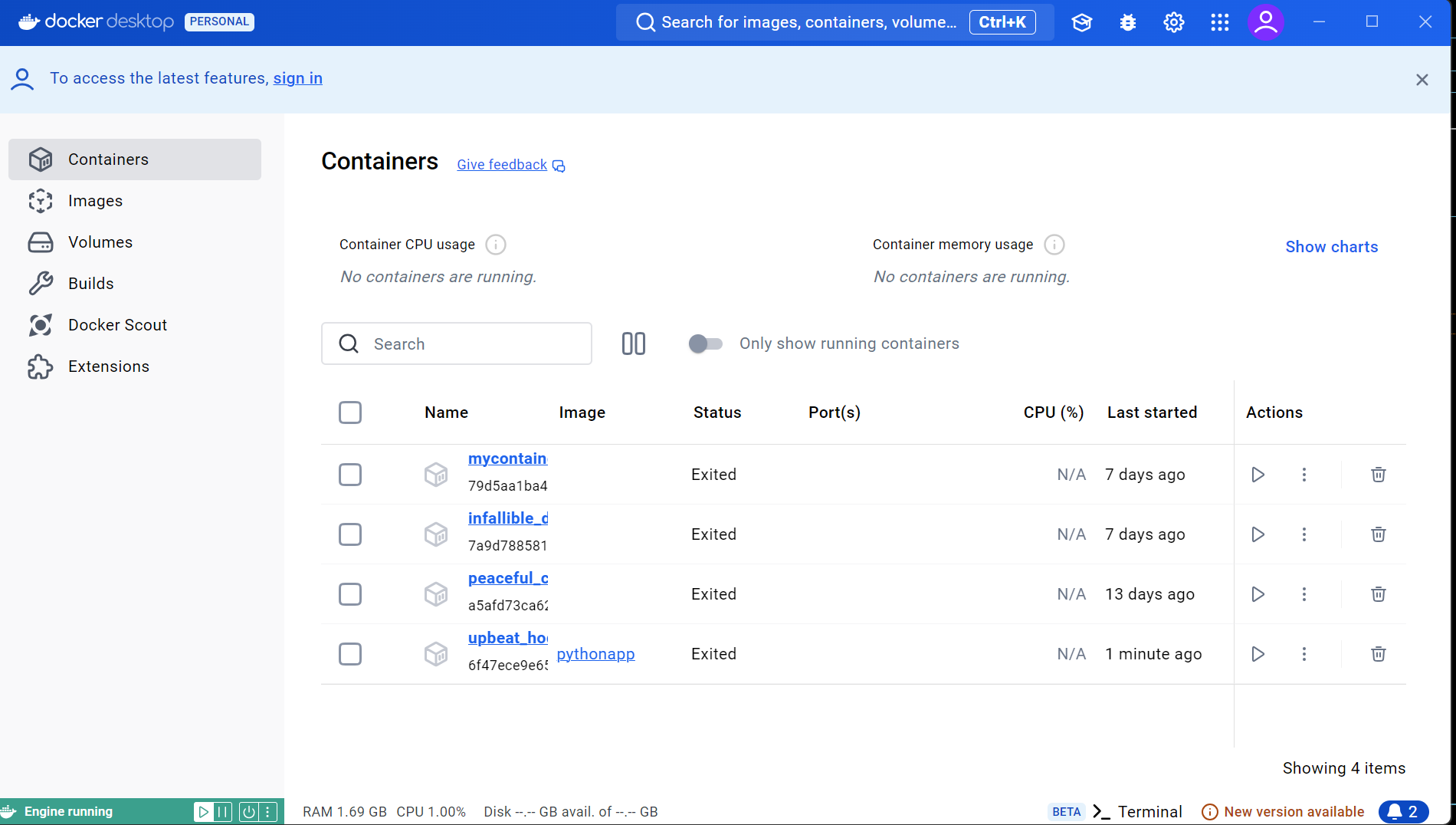
RUN pip install numpy matplotlib

CMD [“python”,”app.py”]

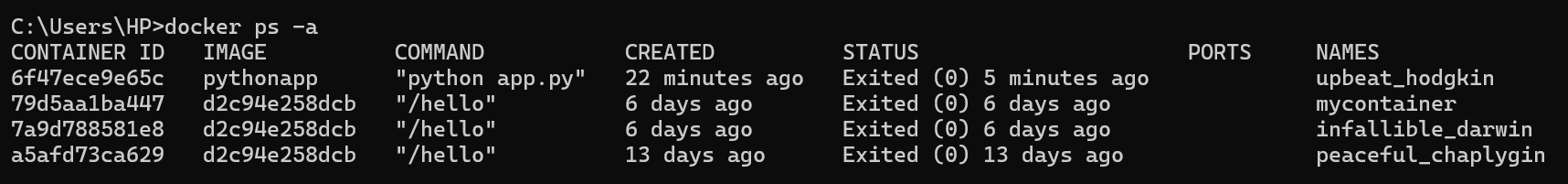


* Now open an integrated terminal by selection the file from the opened folder. Right click and select open in integrated terminal.
* Type *‘docker build -t pythonapp .’*
* *‘docker run -it pythonapp’*





* Go to docker and run the file
* In cmd check all docker images



* After using docker images, remove the files using *‘docker image rm python -f’*