

PROGRAM 1

Build a Docker Container from a Custom Dockerfile

Project Structure:

```
program1/  
├── Dockerfile  
├── app.py  
└── requirements.txt
```

Steps:

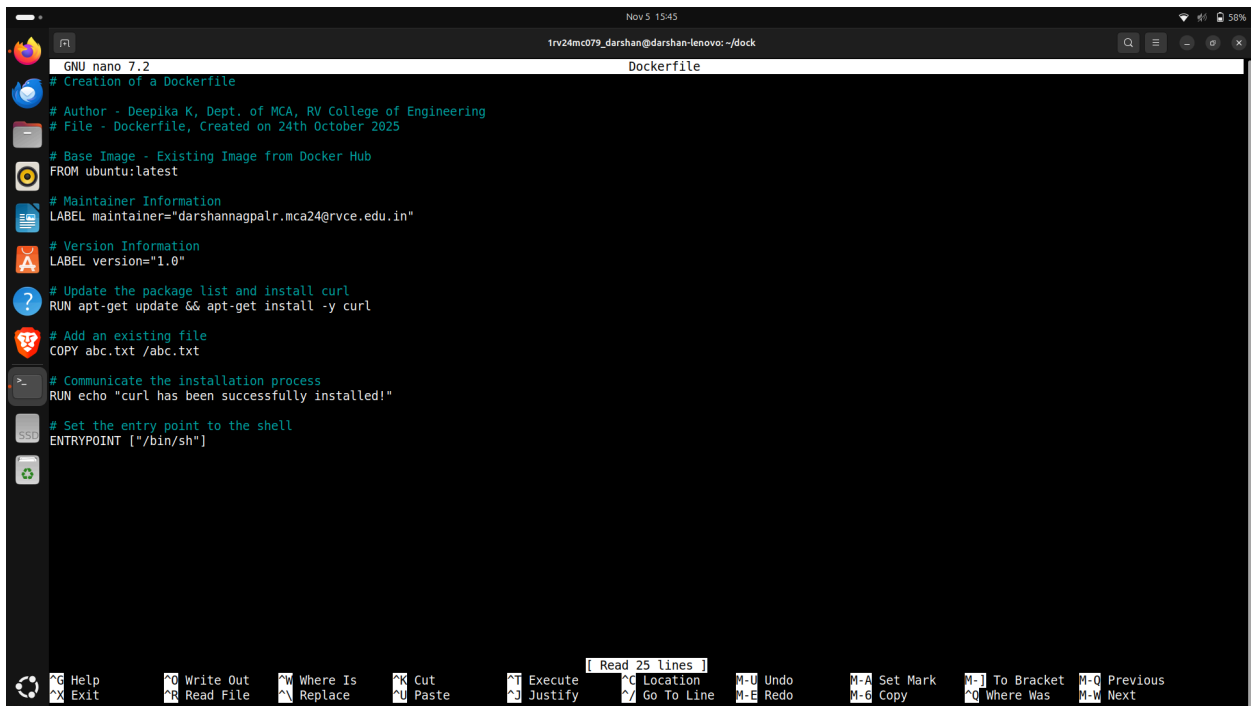
S1: Create Project Folder

mkdir program1

cd program1

S2: Create Dockerfile

nano Dockerfile



The screenshot shows a terminal window with the GNU nano 7.2 editor open, editing a file named Dockerfile. The terminal title bar indicates the user is 1rv24mc079_darshan@darshan-lenovo: ~/dock. The Dockerfile content is as follows:

```
# Creation of a Dockerfile  
  
# Author - Deepika K, Dept. of MCA, RV College of Engineering  
# File - Dockerfile, Created on 24th October 2025  
  
# Base Image - Existing Image from Docker Hub  
FROM ubuntu:latest  
  
# Maintainer Information  
LABEL maintainer="darshannagpalr.mca24@rvce.edu.in"  
  
# Version Information  
LABEL version="1.0"  
  
# Update the package list and install curl  
RUN apt-get update && apt-get install -y curl  
  
# Add an existing file  
COPY abc.txt /abc.txt  
  
# Communicate the installation process  
RUN echo "curl has been successfully installed!"  
  
# Set the entry point to the shell  
ENTRYPOINT ["/bin/sh"]
```

The bottom of the terminal window shows a menu bar with various options: Help, Exit, Write Out, Read File, Where Is, Replace, Cut, Paste, Execute, Justify, Location, Go To Line, Undo, Redo, Set Mark, Copy, To Bracket, Where Was, Previous, Next. A status bar at the bottom indicates "Read 25 lines".

S5: Build the Docker Image

docker build -t program1 .

```
Nov 5 15:46
1rv24mc079_darshan@darshan-lenovo: ~/dock
1rv24mc079_darshan@darshan-lenovo:~/dock$ docker build -t prgm1 .
[+] Building 3.0s (9/9) FINISHED
=> [internal] load build definition from Dockerfile
=> => transferring dockerfile: 650B
=> [internal] load metadata for docker.io/library/ubuntu:latest
=> [internal] load .dockerignore
=> => transferring context: 2B
=> [1/4] FROM docker.io/library/ubuntu:latest@sha256:66460d557b25769b182175144d538d88219c077c678a49af4afca6fbfc1b5252
=> [internal] load build context
=> => transferring context: 28B
=> CACHED [2/4] RUN apt-get update && apt-get install -y curl
=> CACHED [3/4] COPY abc.txt /abc.txt
=> CACHED [4/4] RUN echo "curl has been successfully installed!"
=> exporting to image
=> => exporting layers
=> => writing image sha256:1326d5db91e576e83219a8c9e2431e8aef67aadbe444580c0df3877d679bab36
=> => naming to docker.io/library/prgm1
1rv24mc079_darshan@darshan-lenovo:~/dock$
```

S6 : run the docker image

docker run prgm1

docker history prgm1

```
Nov 5 15:47
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1rv24mc079_darshan@darshan-lenovo:~/dock$ docker build -t prgm1 .
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=> => naming to docker.io/library/prgm1
1rv24mc079_darshan@darshan-lenovo:~/dock$ docker run prgm1
1rv24mc079_darshan@darshan-lenovo:~/dock$ docker images
REPOSITORY    TAG       IMAGE ID       CREATED        SIZE
prgm2         latest   a832bab7ecfc   46 minutes ago 137MB
prgm4         latest   9525108e1d46   57 minutes ago 133MB
prgm1         latest   1326d5db91e5   9 days ago    143MB
1rv24mc079_darshan@darshan-lenovo:~/dock$ docker history prgm1
IMAGE          CREATED        CREATED BY          SIZE    COMMENT
1326d5db91e5   9 days ago    ENTRYPOINT ["/bin/sh"] 0B      buildkit.dockerfile.v0
<missing>      9 days ago    RUN /bin/sh -c echo "curl has been successfu... 0B      buildkit.dockerfile.v0
<missing>      9 days ago    COPY abc.txt /abc.txt # buildkit 14B     buildkit.dockerfile.v0
<missing>      9 days ago    RUN /bin/sh -c apt-get update && apt-get ins... 65MB    buildkit.dockerfile.v0
<missing>      9 days ago    LABEL version=1.0      0B      buildkit.dockerfile.v0
<missing>      9 days ago    LABEL maintainer=darshannagpalr.mca24@rvce.e... 0B      buildkit.dockerfile.v0
<missing>      4 weeks ago   /bin/sh -c #(nop) CMD ["/bin/bash"] 0B
<missing>      4 weeks ago   /bin/sh -c #(nop) ADD file:249778a1782b02a1c... 78.1MB
<missing>      4 weeks ago   /bin/sh -c #(nop) LABEL org.opencontainers... 0B
<missing>      4 weeks ago   /bin/sh -c #(nop) LABEL org.opencontainers... 0B
<missing>      4 weeks ago   /bin/sh -c #(nop) ARG LAUNCHPAD_BUILD_ARCH 0B
<missing>      4 weeks ago   /bin/sh -c #(nop) ARG RELEASE 0B
1rv24mc079_darshan@darshan-lenovo:~/dock$
```