

## PROGRAM 2

Develop a Multistage Dockerfile for Container Orchestration

S1: Create a folder

**mkdir Program2**

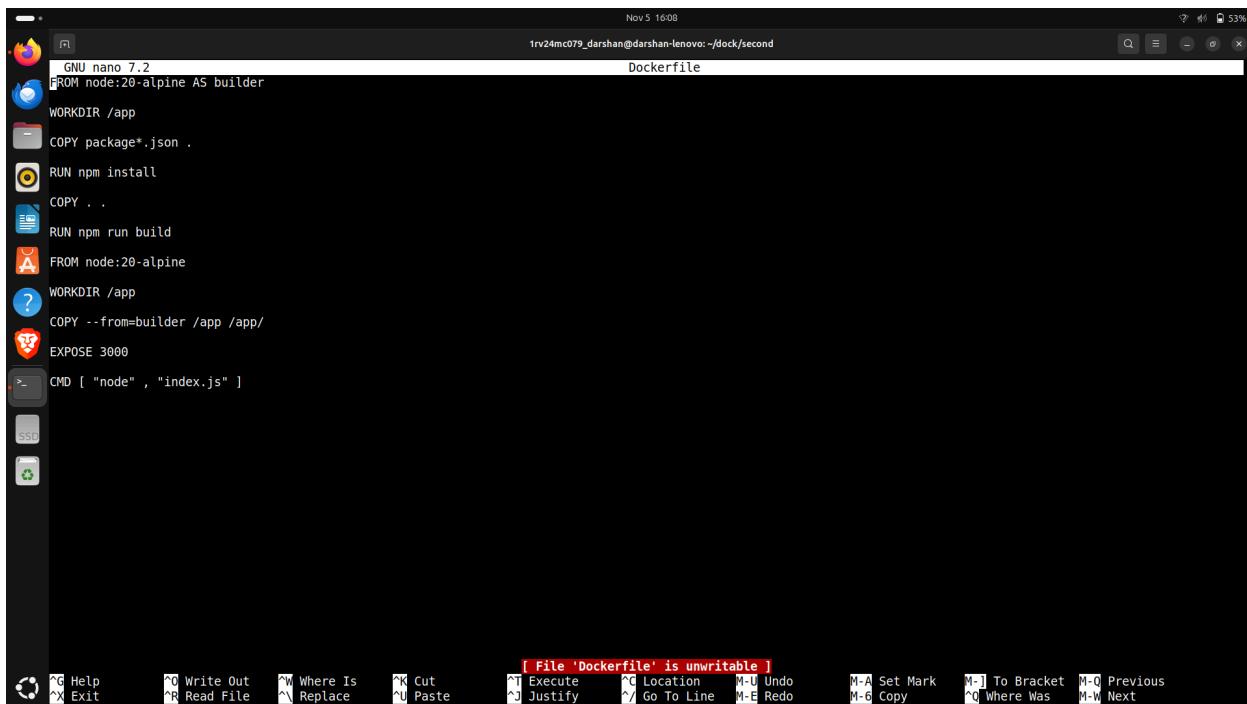
S2: Install npm packages and node modules

**npm init -y**

**npm install express**

S3: Create dist and src folder

S4: Create Dockerfile



The screenshot shows a terminal window titled "Dockerfile" with the command "Nov 5 16:08 1rv24mc079\_darshan@darshan-lenovo: ~/dock/second". The file content is a multi-stage Dockerfile:

```
GNU nano 7.2
FROM node:20-alpine AS builder
WORKDIR /app
COPY package*.json .
RUN npm install
COPY . .
RUN npm run build
FROM node:20-alpine
WORKDIR /app
COPY --from=builder /app /app/
EXPOSE 3000
CMD [ "node" , "index.js" ]
```

The status bar at the bottom indicates "[ File 'Dockerfile' is unwritable ]".

## S5:create index.js file in both the directory

The screenshot shows a terminal window titled "GNU nano 7.2" with the command "index.js" in the title bar. The window displays the following code:

```
const express = require("express")
const app = express()
app.get("/",(req,res) => {
  res.send("Hello from docker ")
})
app.listen(3000,() => {
  console.log("Running on localhost:3000")
})
```

The terminal status bar indicates "Nov 5 16:09" and "1rv24mc079\_darshan@darshan-lenovo:~/dock/second". The bottom of the window shows a menu bar with various keyboard shortcuts for file operations like "Help", "Exit", "Read File", "Replace", "Cut", "Paste", "Execute", "Justify", "Location", "Go To Line", "Undo", "Redo", "Set Mark", "To Bracket", "Copy", "Where Was", and "Previous".

## S6: Build the image docker build -t program2

The screenshot shows a terminal window titled "1rv24mc079\_darshan@darshan-lenovo:~/dock/second\$ docker build prgm2 .". The output shows an error message: "ERROR: docker: 'docker buildx build' requires 1 argument". It then shows the usage information for the docker build command. Following this, it shows the build process for "prgm2" using Dockerfile, which includes transferring files, loading metadata, building context, and finally writing the image to the Docker repository.

```
1rv24mc079_darshan@darshan-lenovo:~/dock/second$ docker build prgm2 .
ERROR: docker: 'docker buildx build' requires 1 argument
Usage: docker buildx build [OPTIONS] PATH | URL | -
Run 'docker buildx build --help' for more information
1rv24mc079_darshan@darshan-lenovo:~/dock/second$ docker build -t prgm2 .

[+] Building 2.4s (12/12) FINISHED
=> [internal] load build definition from Dockerfile
=> transferring dockerfile: 200B
=> [internal] load metadata for docker.io/library/node:20-alpine
=> [internal] load .dockerignore
=> [internal] load context: 2B
=> [builder 1/6] FROM docker.io/library/node:20-alpine@sha256:6178e78b972f79c335df281f4b7674a2d85071aae2af020ffa39f0a770265435
=> [internal] load build context
=> transferring context: 43.46kB
=> [builder 2/6] WORKDIR /app
=> CACHED [builder 3/6] COPY package*.json .
=> CACHED [builder 4/6] RUN npm install
=> CACHED [builder 5/6] COPY .
=> CACHED [builder 6/6] RUN npm run build
=> CACHED [stage-1 3/3] COPY --from=builder /app /app
=> exporting to image
=> exporting layers
=> => writing image sha256:a832bab7ecfc7e6c073afb84dfe6ff8c234b8c98e604007df98c8e45c530a3c6
=> => naming to docker.io/library/prgm2
1rv24mc079_darshan@darshan-lenovo:~/dock/second$
```

S7: Run the file

**docker run -p 3000:3000 program2**

