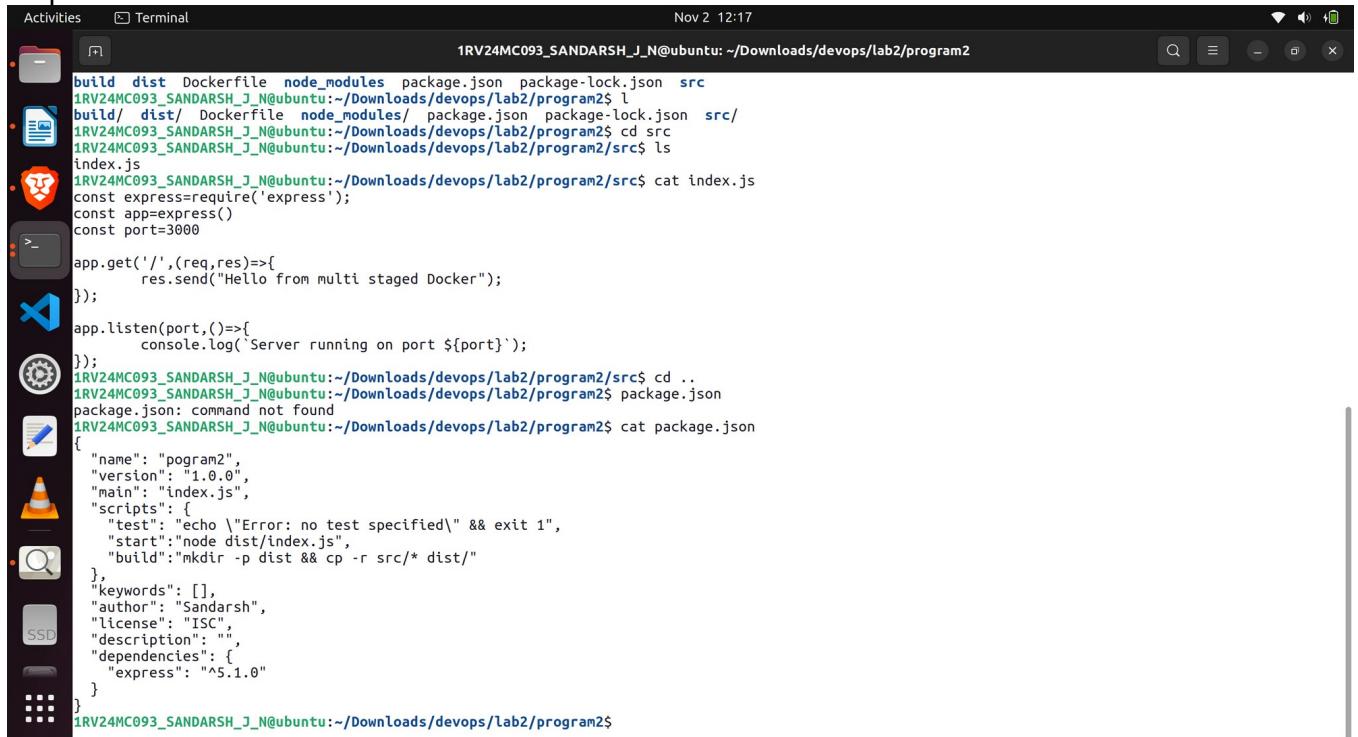


## Develop a multi stage docker file fro container orchastration

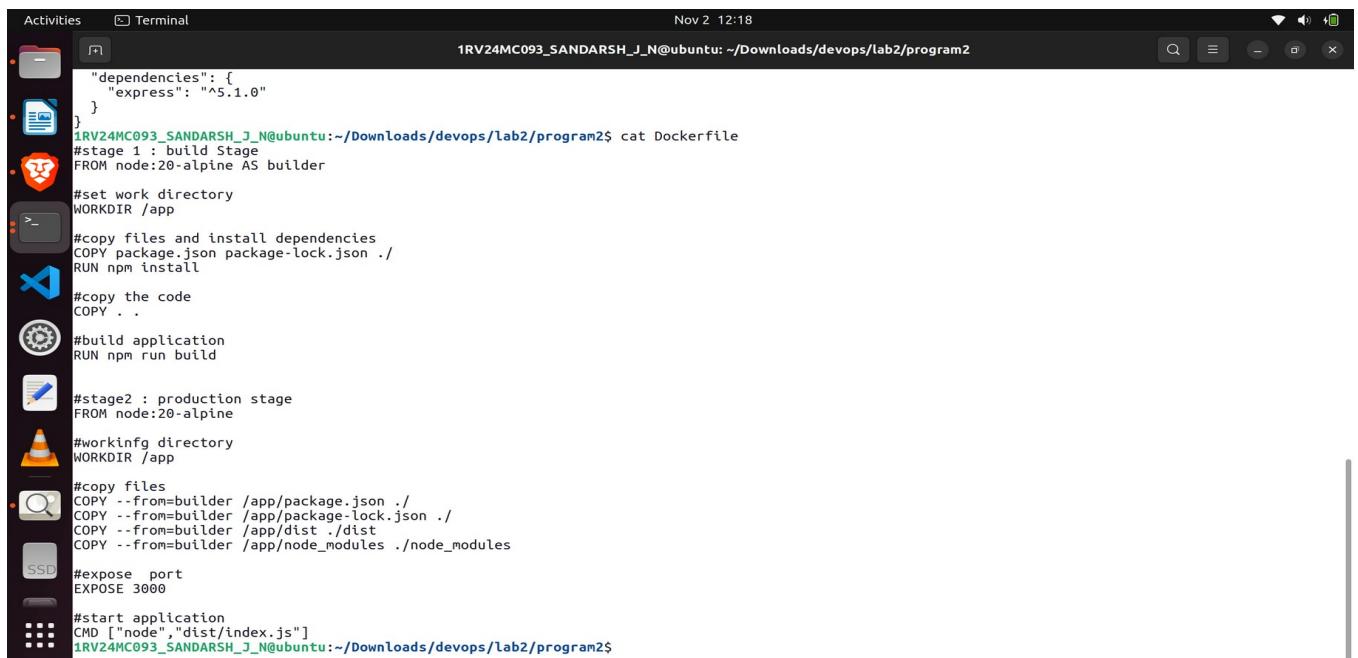
### step 1 : file structures

```
program2
    ----build
    ----src
        --index.js
    ----dist
    ----node_modules
    ----package.json
    ----package-lock.json
    ----Dockerfile
```

### Step 2 : file content



```
Activities Terminal Nov 2 12:17
1RV24MC093_SANDARSH_J_N@ubuntu: ~/Downloads/devops/lab2/program2$ build dist Dockerfile node_modules package.json package-lock.json src
1RV24MC093_SANDARSH_J_N@ubuntu:~/Downloads/devops/lab2/program2$ l
build/ dist/ Dockerfile node_modules/ package.json package-lock.json src/
1RV24MC093_SANDARSH_J_N@ubuntu:~/Downloads/devops/lab2/program2$ cd src
1RV24MC093_SANDARSH_J_N@ubuntu:~/Downloads/devops/lab2/program2/src$ ls
index.js
1RV24MC093_SANDARSH_J_N@ubuntu:~/Downloads/devops/lab2/program2/src$ cat index.js
const express=require('express');
const app=express();
const port=3000
app.get('/',(req,res)=>{
    res.send("Hello from multi staged Docker");
});
app.listen(port,()=>{
    console.log(`Server running on port ${port}`);
});
1RV24MC093_SANDARSH_J_N@ubuntu:~/Downloads/devops/lab2/program2/src$ cd ..
1RV24MC093_SANDARSH_J_N@ubuntu:~/Downloads/devops/lab2/program2$ package.json
package.json: command not found
1RV24MC093_SANDARSH_J_N@ubuntu:~/Downloads/devops/lab2/program2$ cat package.json
{
    "name": "pogram2",
    "version": "1.0.0",
    "main": "index.js",
    "scripts": {
        "test": "echo \"Error: no test specified\" && exit 1",
        "start": "node dist/index.js",
        "build": "mkdir -p dist && cp -r src/* dist/"
    },
    "keywords": [],
    "author": "Sandarsh",
    "license": "ISC",
    "description": "",
    "dependencies": {
        "express": "^5.1.0"
    }
}
1RV24MC093_SANDARSH_J_N@ubuntu:~/Downloads/devops/lab2/program2$
```



```
Activities Terminal Nov 2 12:18
1RV24MC093_SANDARSH_J_N@ubuntu: ~/Downloads/devops/lab2/program2$ cat Dockerfile
"dependencies": {
    "express": "5.1.0"
}
1RV24MC093_SANDARSH_J_N@ubuntu:~/Downloads/devops/lab2/program2$ cat Dockerfile
#stage 1 : build Stage
FROM node:20-alpine AS builder
#set work directory
WORKDIR /app
#copy files and install dependencies
COPY package.json package-lock.json ./ 
RUN npm install
#copy the code
COPY . .
#build application
RUN npm run build
#stage2 : production stage
FROM node:20-alpine
#workinfg directory
WORKDIR /app
#copy files
COPY --from=builder /app/package.json ./ 
COPY --from=builder /app/package-lock.json ./ 
COPY --from=builder /app/dist ./dist
COPY --from=builder /app/node_modules ./node_modules
#expose port
EXPOSE 3000
#start application
CMD ["node","dist/index.js"]
1RV24MC093_SANDARSH_J_N@ubuntu:~/Downloads/devops/lab2/program2$
```

## step 2 : build a docker image for program2

```
Activities Terminal Nov 2 11:52
1RV24MC093_SANDARSH_J_N@ubuntu:~/Downloads/devops/lab2/program2$ ls
build dist Dockerfile node_modules package.json package-lock.json src
1RV24MC093_SANDARSH_J_N@ubuntu:~/Downloads/devops/lab2/program2$ docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
1RV24MC093_SANDARSH_J_N@ubuntu:~/Downloads/devops/lab2/program2$ docker build -t prg2 .
DEPRECATED: The legacy builder is deprecated and will be removed in a future release.
Install the buildx component to build images with BuildKit:
https://docs.docker.com/go/buildx/
Sending build context to Docker daemon 3.251MB
Step 1/14 : FROM node:20-alpine AS builder
20-alpine: Pulling from library/node
2d35ebdb57d9: Pulling fs layer
60e45a9660cf: Pulling fs layer
e74e4ed823e9: Pulling fs layer
da04d522c98f: Pulling fs layer
da04d522c98f: Waiting
e74e4ed823e9: Verifying Checksum
e74e4ed823e9: Download complete
2d35ebdb57d9: Download complete
2d35ebdb57d9: Pull complete
da04d522c98f: Verifying Checksum
da04d522c98f: Download complete
60e45a9660cf: Verifying Checksum
60e45a9660cf: Download complete
60e45a9660cf: Pull complete
e74e4ed823e9: Pull complete
da04d522c98f: Pull complete
Digest: sha256:6178e78b972f79c335df281f4b7674a2d85071aae2af020ffa39f0a770265435
Status: Downloaded newer image for node:20-alpine
--> 2b56f2779663
Step 2/14 : WORKDIR /app
--> Running in c14237d65295
Removed intermediate container c14237d65295
```

## step 3 : create a running container for program 2

```
Activities Terminal Nov 2 11:54
1RV24MC093_SANDARSH_J_N@ubuntu:~/Downloads/devops/lab2/program2$ 
--> Running in 33eee7a4a5d0
> prg2@1.0.0 build
> mkdir -p dist && cp -r src/* dist/
--> Removed intermediate container 33eee7a4a5d0
--> a5797ec7286b
Step 7/14 : FROM node:20-alpine
--> 2b56f2779663
Step 8/14 : WORKDIR /app
--> Using cache
--> ef7c77a8977d
Step 9/14 : COPY --from=builder /app/package.json .
--> f9a3df6993a3
Step 10/14 : COPY --from=builder /app/package-lock.json .
--> 020bdfd4bbcd
Step 11/14 : COPY --from=builder /app/dist ./dist
--> aca8bedf48b0
Step 12/14 : COPY --from=builder /app/node_modules ./node_modules
--> 0a82494ebab9
Step 13/14 : EXPOSE 3000
--> Running in 18ddc9cabc69
--> Removed intermediate container 18ddc9cabc69
--> f76914491d17
Step 14/14 : CMD ["node","dist/index.js"]
--> Running in 2b4f87480e33
--> Removed intermediate container 2b4f87480e33
--> edff37cb7fdb
Successfully built edff37cb7fdb
Successfully tagged prg2:latest
1RV24MC093_SANDARSH_J_N@ubuntu:~/Downloads/devops/lab2/program2$ docker run -it -p 3000:3000 --name cont2 prg2
Server running on port 3000
```

output :

