Devops Lab Program 2 : Develop a multi stage docker file

Folder Structure :

```
Project Directory:
    |-build
    |-dist
    |-Dockerfile
    |-package.json
    |-package-lock.json
    |-src
        |--index.js
    |-node_modules
```

src/index.js file :

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

Dockerfile
Create Dockerfile and write these code

```
  GNU nano 6.2                                                          Dockerfile *
FROM node:20-alpine AS builder

#set working directory
WORKDIR /app

#copy package 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

#set working directory
WORKDIR /app

#copy necessary 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 the port
EXPOSE 3000

#start the application
CMD ["node","dist/index.js"]
```

Next Step : build the image and run the container

To build the image run this command :

docker build -t lab2 .

```
1RV24MC108_SWASTHIK_DEVADIGA@swasthik-Inspiron-15-3515:~/devprg2$ docker images
REPOSITORY     TAG       IMAGE ID       CREATED       SIZE
lab1           latest    94ce1ac06ea5   2 days ago    133MB
wordpress      latest    7332768c717f   4 weeks ago   734MB
1RV24MC108_SWASTHIK_DEVADIGA@swasthik-Inspiron-15-3515:~/devprg2$ docker build -t lab2 .
[+] Building 3.7s (15/15) FINISHED
 => [internal] load build definition from Dockerfile
 => => transferring dockerfile: 641B
 => [internal] load metadata for docker.io/library/node:20-alpine
 => [internal] load .dockerignore
 => => transferring context: 2B
 => [builder 1/6] FROM docker.io/library/node:20-alpine@sha256:6178e78b972f79c335df281f4b7674a2d85071aae2af020ffa39f0a770265
 => [internal] load build context
 => => transferring context: 44.12kB
 => CACHED [builder 2/6] WORKDIR /app
 => CACHED [builder 3/6] COPY package.json package-lock.json ./
 => CACHED [builder 4/6] RUN npm install
 => [builder 5/6] COPY . .
 => [builder 6/6] RUN npm run build
 => CACHED [stage-1 3/6] COPY --from=builder /app/package.json ./
 => CACHED [stage-1 4/6] COPY --from=builder /app/package-lock.json ./
 => CACHED [stage-1 5/6] COPY --from=builder /app/dist ./dist
 => CACHED [stage-1 6/6] COPY --from=builder /app/node_modules ./node_modules
 => exporting to image
 => => exporting layers
 => => writing image sha256:59f4fd1cbfec4fd716a5d322d85f3e756d299230475975a223bc0a412e30b662
 => => naming to docker.io/library/lab2
1RV24MC108_SWASTHIK_DEVADIGA@swasthik-Inspiron-15-3515:~/devprg2$
```

To create and run the container :

docker run -it p 5000:5000 lab1

```
1RV24MC108_SWASTHIK_DEVADIGA@swasthik-Inspiron-15-3515:~/devprg2$ docker images
REPOSITORY     TAG       IMAGE ID       CREATED       SIZE
lab1           latest    94ce1ac06ea5   2 days ago    133MB
wordpress      latest    7332768c717f   4 weeks ago   734MB
1RV24MC108_SWASTHIK_DEVADIGA@swasthik-Inspiron-15-3515:~/devprg2$ docker build -t lab2 .
[+] Building 3.7s (15/15) FINISHED
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 => CACHED [stage-1 3/6] COPY --from=builder /app/package.json ./
 => CACHED [stage-1 4/6] COPY --from=builder /app/package-lock.json ./
 => CACHED [stage-1 5/6] COPY --from=builder /app/dist ./dist
 => CACHED [stage-1 6/6] COPY --from=builder /app/node_modules ./node_modules
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1RV24MC108_SWASTHIK_DEVADIGA@swasthik-Inspiron-15-3515:~/devprg2$ docker images
REPOSITORY     TAG       IMAGE ID       CREATED       SIZE
lab1           latest    94ce1ac06ea5   2 days ago    133MB
lab2           latest    59f4fd1cbfec   2 days ago    137MB
wordpress      latest    7332768c717f   4 weeks ago   734MB
1RV24MC108_SWASTHIK_DEVADIGA@swasthik-Inspiron-15-3515:~/devprg2$ docker run -it -p 3000:3000 lab2
Running on port 3000
```