

Program2

Develop a multistage Dockerfile

Step 1 - Create the following file structure

```
prgm2
|---- Dockerfile
|---- package.json
|---- package-lock.json
|---- node_modules/
|---- src/
    |---- server.js
```

Step 2 - Initialize Node.js project

```
npm init -y
```

Step 3 - Install express

```
npm install express
```

Step 4 - Write the Dockerfile and server.js

Step 5 - Build the Docker image

```
docker build -t prgm2
```

Step 6 - Build and Run the container

```
docker run -p 3000:3000 prgm2
```

```
1rv24mc082_rajatraj@rajatraj-Vostro-5581:~/devops/labprogram/prgm2$ docker build -t prgm2 .
[+] Building 8.7s (15/15) FINISHED
=> [internal] load build definition from Dockerfile
=> [internal] transfering dockerfile: 441B
=> [internal] load metadata for docker.io/library/node:20-alpine
=> [internal] load .dockerignore
=> [internal] transfering context: 2B
=> [internal] 1/1: FROM docker.io/library/node:20-alpine@sha256:6178e78b972f79c335df281f4b7674a2d85071aae2af020ffa39f0a770265435
=> [internal] load build context
=> [internal] transfering context: 43.57kB
=> CACHED [builder 2/6] WORKDIR /prgm2
=> CACHED [builder 3/6] COPY package.json package-lock.json .
=> CACHED [builder 4/6] RUN npm install
=> CACHED [builder 5/6] COPY .
=> CACHED [builder 6/6] CMD npm run build
=> CACHED [stage-0 1/6] COPY --from=builder /prgm2/package.json /
=> CACHED [stage-1 1/6] COPY --from=builder /prgm2/package-lock.json .
=> CACHED [stage-1 2/6] COPY --from=builder /prgm2/dist ./dist
=> CACHED [stage-1 3/6] COPY --from=builder /prgm2/node_modules ./node_modules
=> exporting to image
=> exporting layers
=> == writing image sha256:2643c3e2e300bfdd08de4e62d3ea63f370cccf3c4a1a55d8dab4c99b38c7925
=> == naming to docker.io/library/prgm2
1rv24mc082_rajatraj@rajatraj-Vostro-5581:~/devops/labprogram/prgm2$ docker run -p 3000:3000 prgm2
^X^C1rv24mc082_rajatraj@rajatraj-Vostro-5581:~/devops/labprogram/prgm2$ docker run -p 3000:3000 prgm2
docker: Error response from daemon: failed to set up container networking: driver failed programming external connectivity on endpoint determined_helsenberg (441fd68c469ec6cc0314315405359a75
32923bf11ef8754d582bb65e31fdcaa5): Bind for :::3000 failed: port is already allocated

Run 'docker run --help' for more information
1rv24mc082_rajatraj@rajatraj-Vostro-5581:~/devops/labprogram/prgm2$ docker container ps
CONTAINER ID        IMAGE               COMMAND             STATUS              PORTS          NAMES
38d0956dab37   "docker-entrypoint.s..."  3 minutes ago       Up 3 minutes   0.0.0.0:3000->3000/tcp, :::3000->3000/tcp   nostalgic_cray
1rv24mc082_rajatraj@rajatraj-Vostro-5581:~/devops/labprogram/prgm2$ docker rm 38d
Error response from daemon: cannot remove container "38d": container is running; stop the container before removing or force remove
1rv24mc082_rajatraj@rajatraj-Vostro-5581:~/devops/labprogram/prgm2$ docker rm -f 38d
38d
1rv24mc082_rajatraj@rajatraj-Vostro-5581:~/devops/labprogram/prgm2$ docker run -p 3000:3000 prgm2
server is running at 3000
|
```

Step 7 - Verify the output

```
1rv24mc082_rajatraj@rajatraj-Vostro-5581:/devops/labprogram/prgm2$ cd ..
1rv24mc082_rajatraj@rajatraj-Vostro-5581:/devops/labprogram$ cd prgm2
1rv24mc082_rajatraj@rajatraj-Vostro-5581:/devops/labprogram/prgm2$ docker build -t prgm2 .
[+] Building 8.7s (15/15) FINISHED
--> [internal] load build definition from Dockerfile
--> [internal] load metadata for docker.io/library/node:20-alpine
--> [internal] load .dockerignore
--> [internal] transfering context: 2B
--> [builder 1/6] FROM docker.io/library/node:20-alpine@sha256:6178e78b972f79c335df281f4b7674a2d
--> [internal] load build context
--> [internal] transfering context: 43.57kB
--> CACHED [builder 2/6] COPY . /prgm2
--> CACHED [builder 3/6] COPY package.json package-lock.json .
--> CACHED [builder 4/6] RUN npm install
--> CACHED [builder 5/6] COPY .
--> CACHED [builder 6/6] RUN npm run build
--> CACHED [stage-1 3/6] COPY ..from=builder /prgm2/package.json .
--> CACHED [stage-1 4/6] COPY ..from=builder /prgm2/package-lock.json .
--> CACHED [stage-1 5/6] COPY ..from=builder /prgm2/dist ./dist
--> CACHED [stage-1 6/6] COPY ..from=builder /prgm2/node_modules ./node_modules
--> exposing port 3000
--> --> writing image sha256:264c32e30051dd08d4e462d3ea633f37dcc1f3c4a1a55d8dab4c898b388c7925
--> --> naming to docker.io/library/prgm2
1rv24mc082_rajatraj@rajatraj-Vostro-5581:/devops/labprogram/prgm2$ docker run -p 3000:3000 prgm2
^X^C1rv24mc082_rajatraj@rajatraj-Vostro-5581:/devops/labprogram/prgm2$ docker run -p 3000:3000 prgm2
docker: Error response from daemon: failed to set up container networking: driver failed program
329238f11ef8754d5d92b4b65e31fdaa5): Bind for ::3000 failed: port is already allocated
Run 'docker run --help' for more information
1rv24mc082_rajatraj@rajatraj-Vostro-5581:/devops/labprogram/prgm2$ docker container ps
CONTAINER ID        IMAGE               COMMAND             CREATED            STATUS              PORTS
38d9686ab37        prgm2              "docker-entrypoint...."   32 minutes ago   Up 32 minutes   0.0.0.0:3000->
1rv24mc082_rajatraj@rajatraj-Vostro-5581:/devops/labprogram/prgm2$ docker rm 38d
Error response from daemon: cannot remove container "38d": container is running: stop the container
1rv24mc082_rajatraj@rajatraj-Vostro-5581:/devops/labprogram/prgm2$ docker rm -f 38d
38d
1rv24mc082_rajatraj@rajatraj-Vostro-5581:/devops/labprogram/prgm2$ docker run -p 3000:3000 prgm2
server is running at 3000
]
```

