Project via Docker

Rupesh Panwar
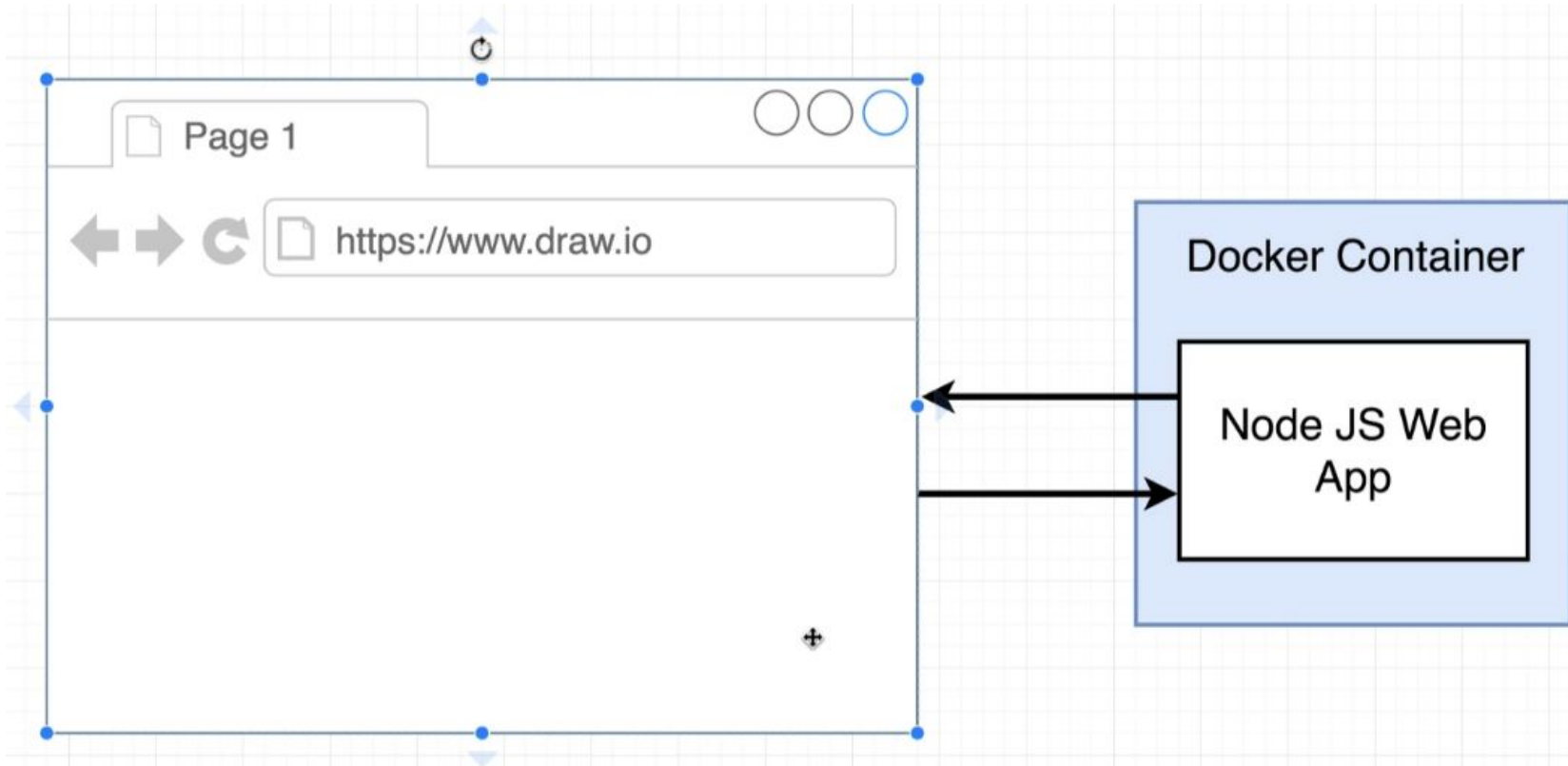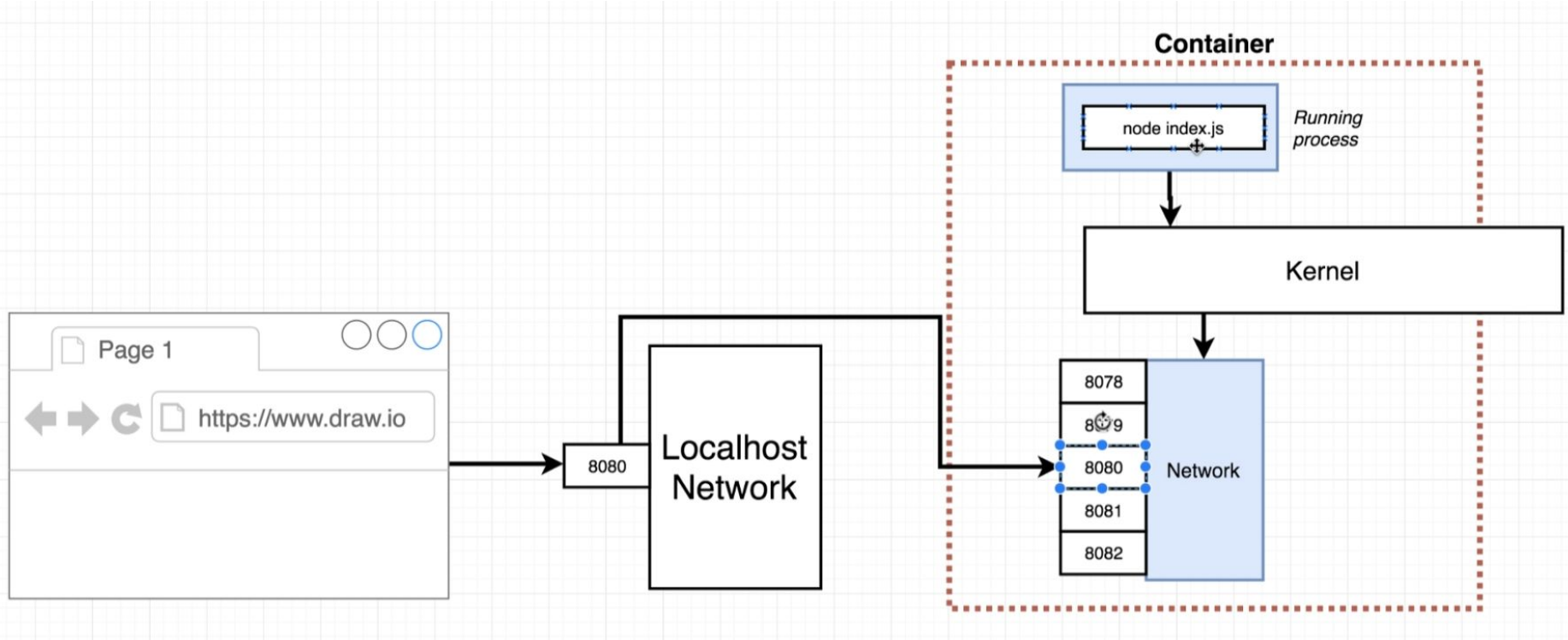
Date: 06-Aug-21

Agenda

Project outline

1. Steps to perform
2. About Nodejs App
3. Template(dockerfile) Flow
4. Docker build
5. WORKDIR /usr/app
6. COPY ./ ./
7. localhost:8080
8. Port (-p host-port:container-port) mapping
9. Unnecessary rebuilds

Project outline

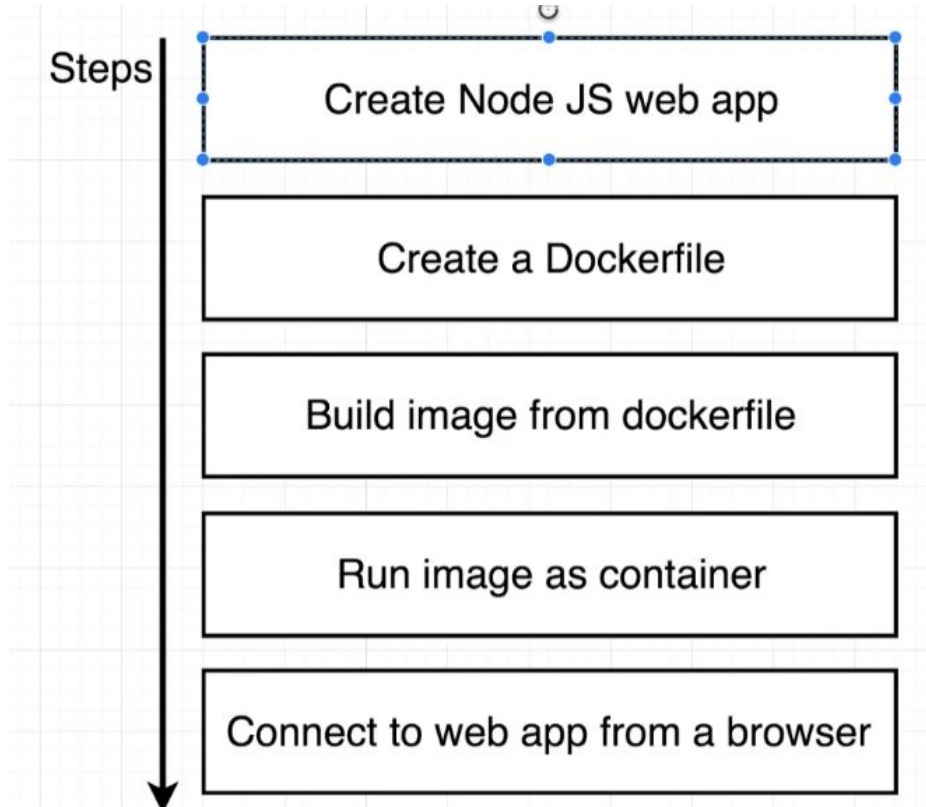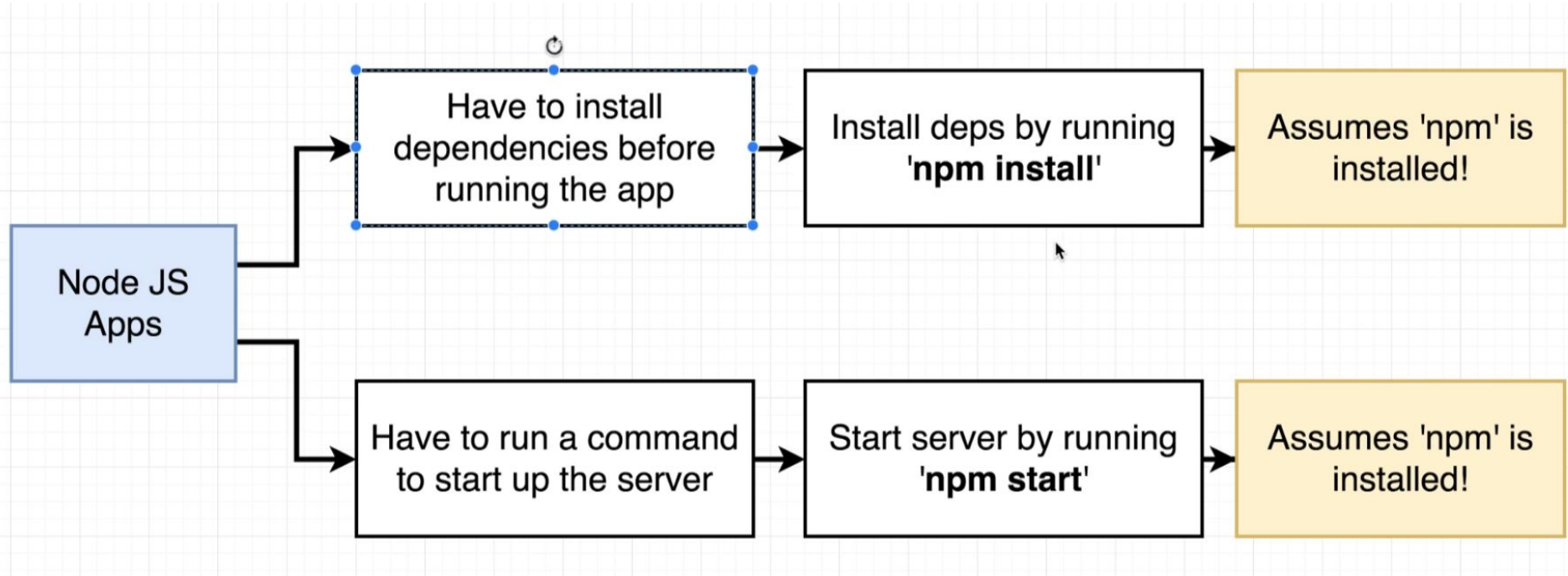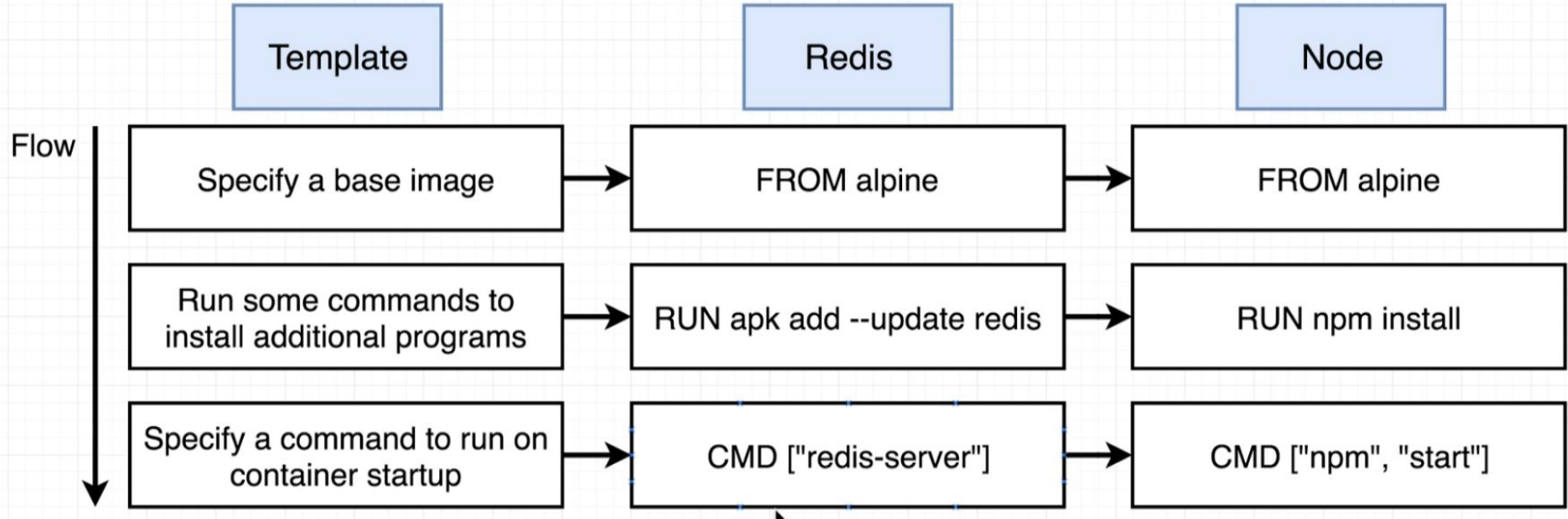**Download app: https://github.com/rupeshpanwar/simpleapp-docker.git**

Behind the scene

Steps to perform

Steps

Create Node JS web app

Create a Dockerfile

Build image from dockerfile

Run image as container

Connect to web app from a browser

About Nodejs App

```
                        ┌─────────────────┐     ┌─────────────────┐     ┌─────────────────┐
                        │ Have to install │     │Install deps by  │     │Assumes 'npm' is │
                   ┌───▶│ dependencies    │────▶│running          │────▶│installed!       │
                   │    │ before          │     │'npm install'    │     │                 │
                   │    │ running the app │     │                 │     │                 │
                   │    └─────────────────┘     └─────────────────┘     └─────────────────┘
┌──────────────┐   │
│ Node JS      │───┤
│ Apps         │   │
└──────────────┘   │    ┌─────────────────┐     ┌─────────────────┐     ┌─────────────────┐
                   │    │Have to run a    │     │Start server by  │     │Assumes 'npm' is │
                   └───▶│command          │────▶│running          │────▶│installed!       │
                        │to start up the  │     │'npm start'      │     │                 │
                        │server           │     │                 │     │                 │
                        └─────────────────┘     └─────────────────┘     └─────────────────┘
```

Template(dockerfile) Flow

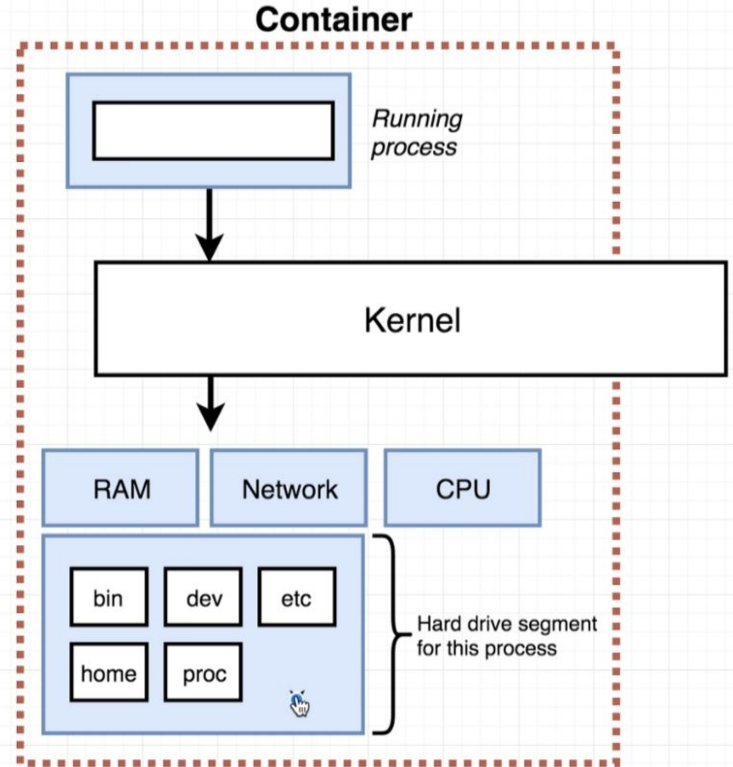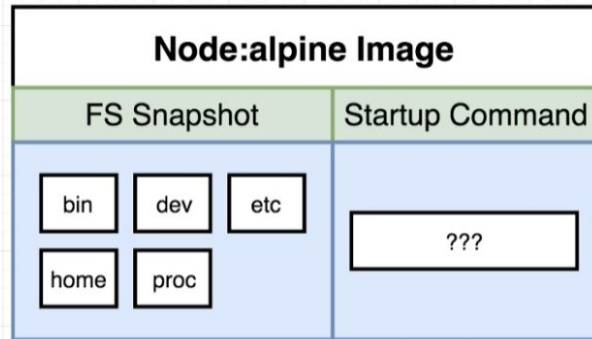| Template	Redis	Node
Specify a base image →	FROM alpine →	FROM alpine
Run some commands to install additional programs →	RUN apk add --update redis →	RUN npm install
Specify a command to run on container startup →	CMD ["redis-server"] →	CMD ["npm", "start"]

Flow ↓

Build docker image

> docker build .
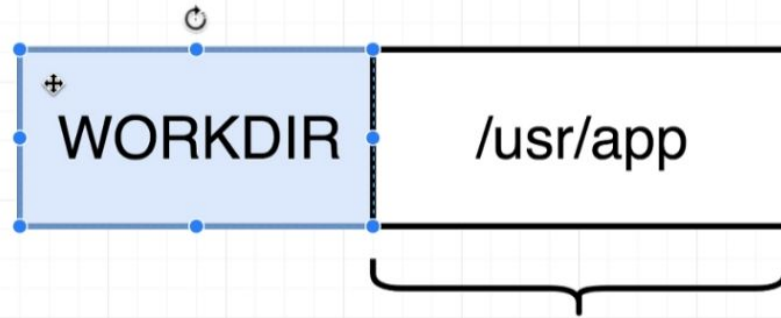
Include right image

> node:alpine
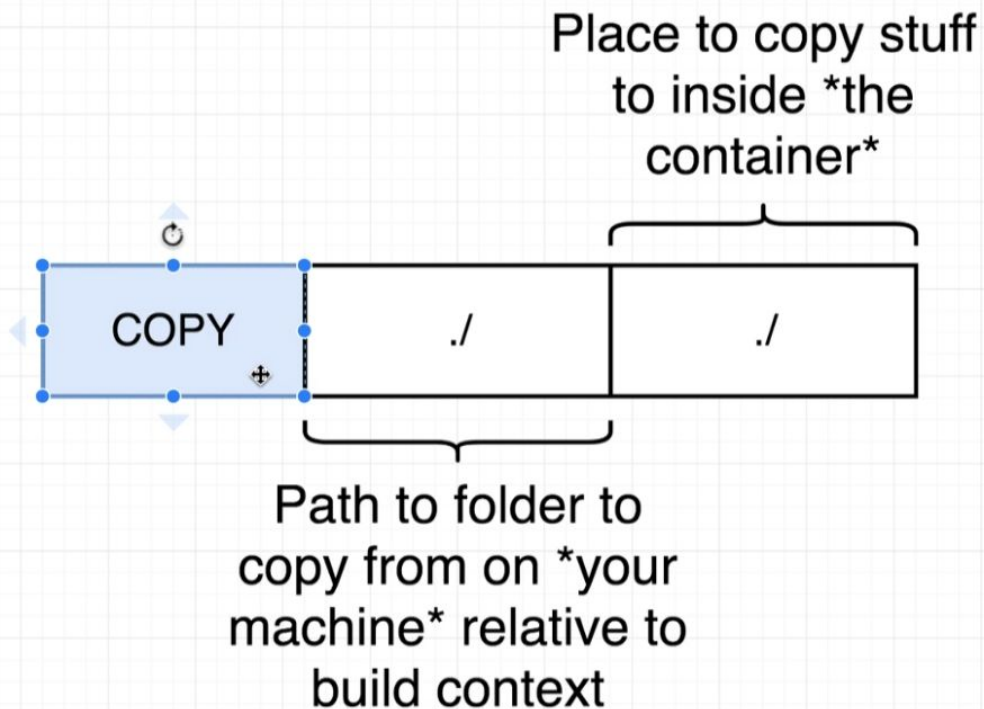
Few missing files

> package.json

Build docker image
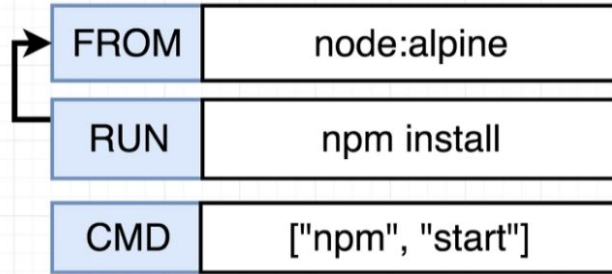
WORKDIR /usr/app

> **docker run -it rupeshpanwar/simpleapp sh**

WORKDIR /usr/app

Any following command
will be executed relative
to this path in the
container

COPY

| COPY | ./ | ./ |

Place to copy stuff to inside *the container*

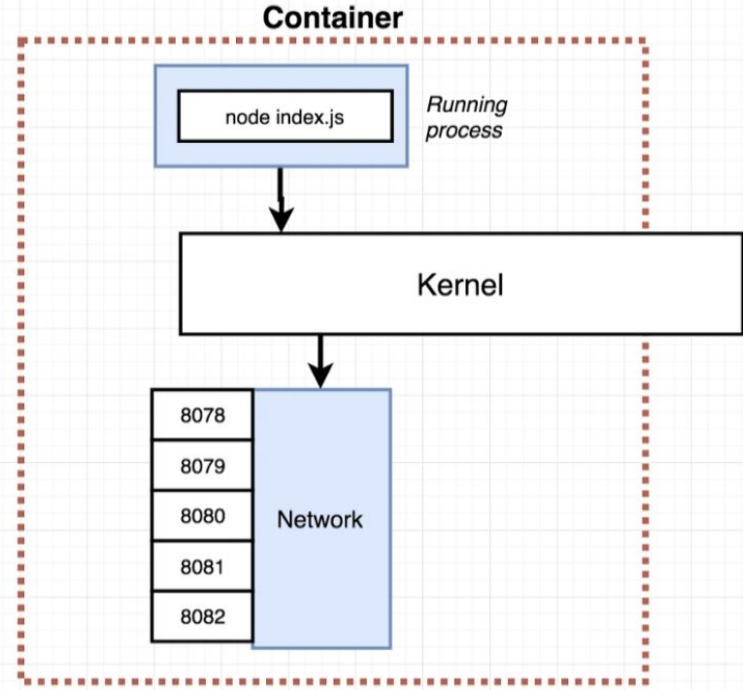Path to folder to copy from on *your machine* relative to build context

Container FS
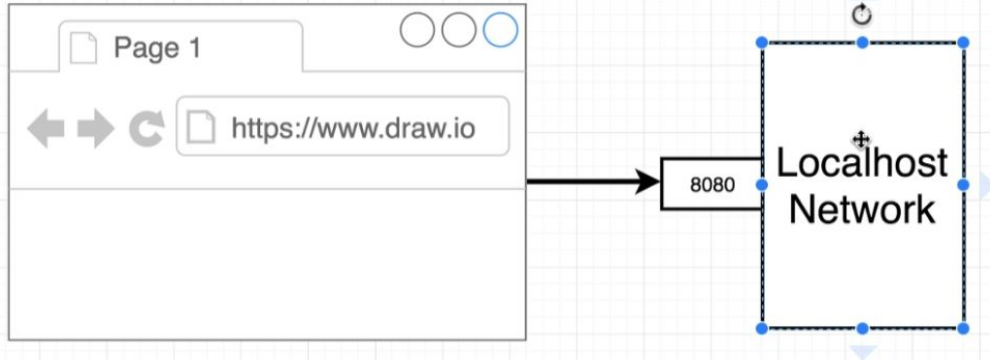
```
simpleweb $ docker run -it rupeshpanwar/simpleapp sh
/usr/app # ls
Dockerfile                 node_modules                 workspace.code-workspace
README.md                  package-lock.json
index.js                   package.json
```

> **docker run -p 8080:8080 rupeshpanwar/simpleapp**
> **docker ps**
> **docker exec -it container-id sh**
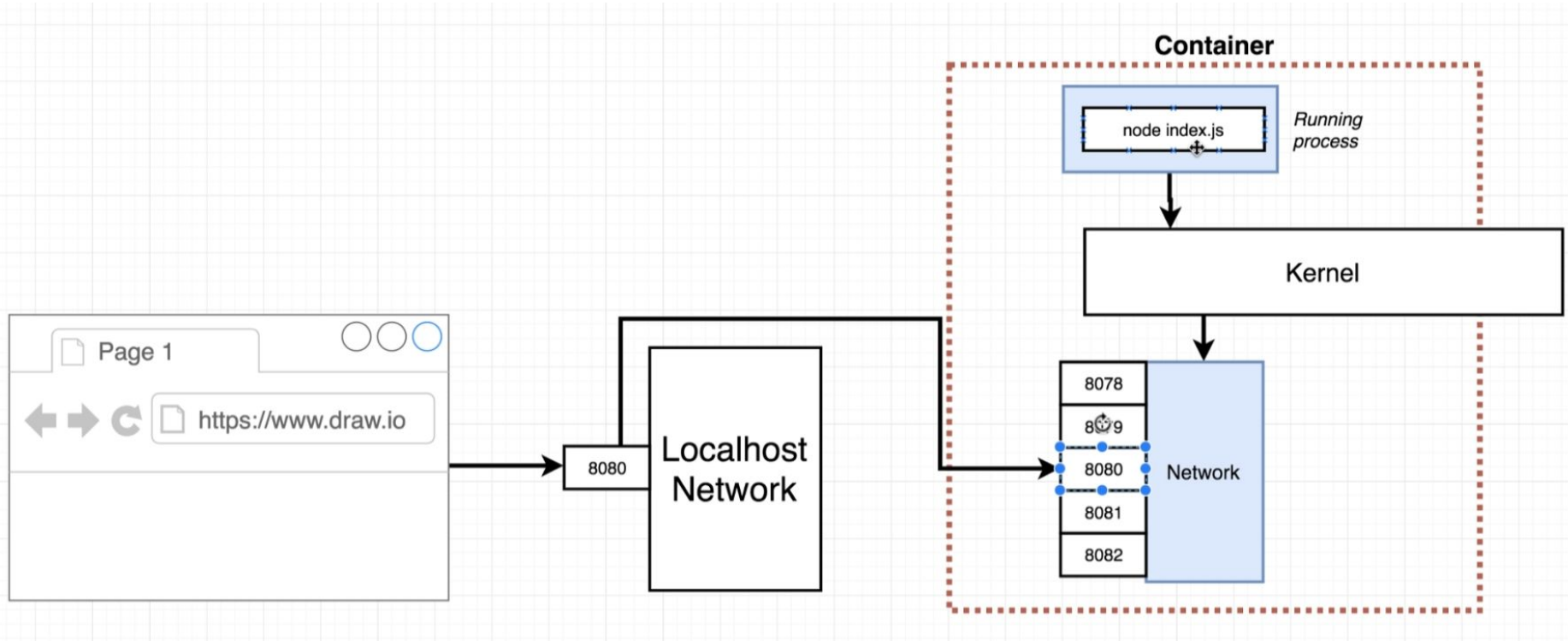
Build docker image

> **docker build -t rupeshpanwar/simpleapp .**

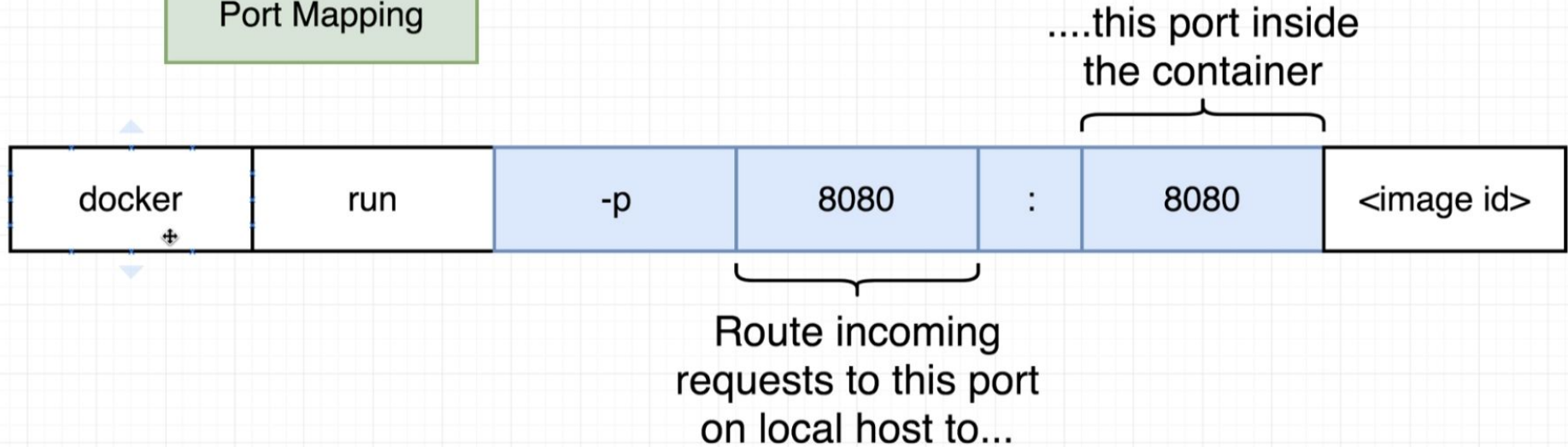> **docker run rupeshpanwar/simpleapp**

localhost:8080

localhost:8080

Port (-p) mapping

Docker Run with Port Mapping

....this port inside the container

docker	run	-p	8080	:	8080	<image id>

Route incoming requests to this port on local host to...

> **docker run -p 8080:8080 rupeshpanwar/simpleapp**
> **docker ps**
> **docker exec -it container-id sh**

Unnecessary rebuilds

> change the application source code

> docker build -t rupeshpanwar/simpleapp .

```
COPY ./package.json ./

RUN npm install

COPY ./ ./
```