Checkpoint

- [x] Container
- [x] Image
- [x] Dockerfile
- [x] Registry
- [x] Auto build with Github (Bonus!)

Checkpoint

- [ ] Basic docker volume
- [ ] Docker network
- [ ] Docker multistage build
- [ ] Real-world example project
- [ ] Deploy container to Heroku (Bonus!)

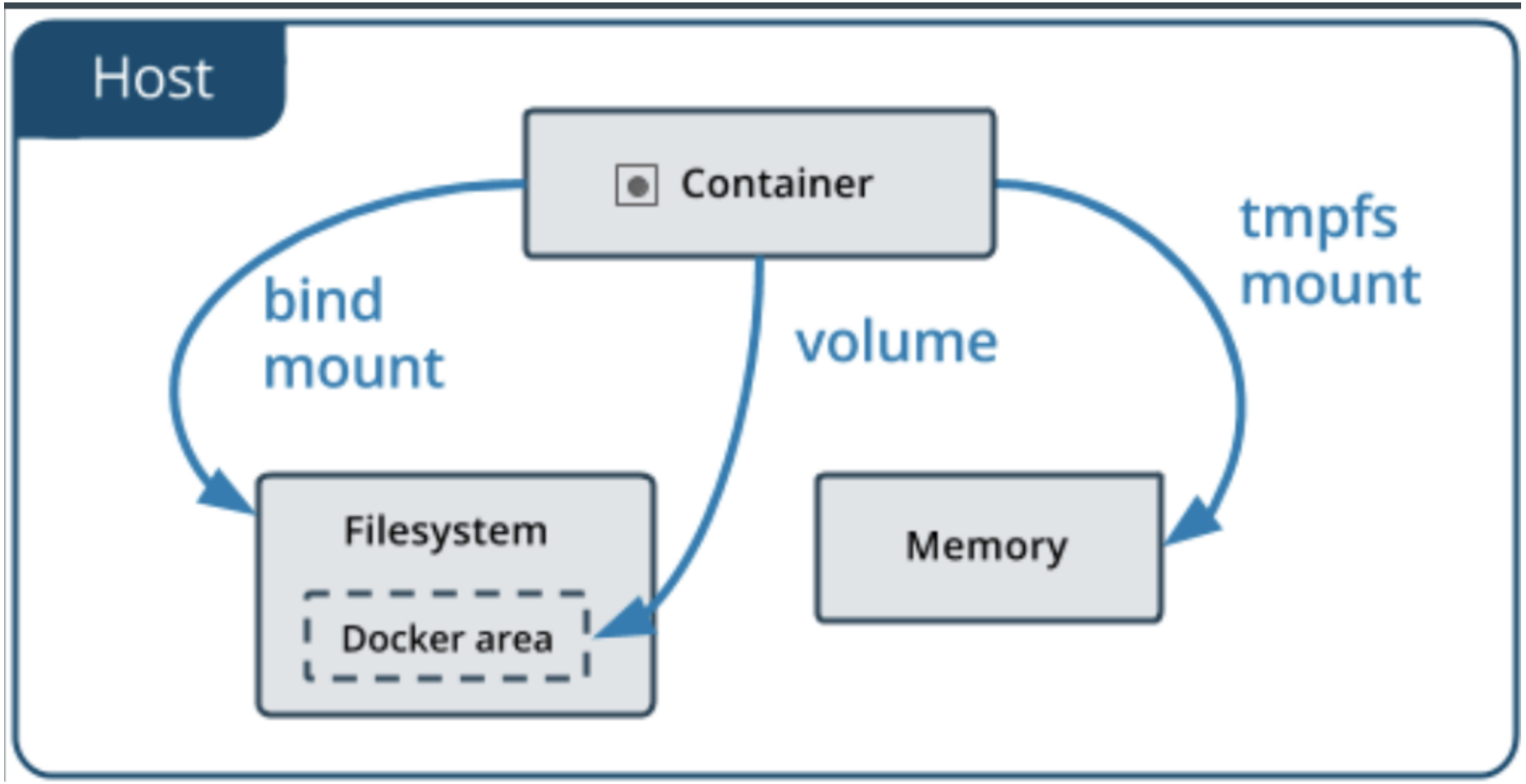
Lab 9. Create upload script image

```
docker build -t app-upload:0.1 .
```

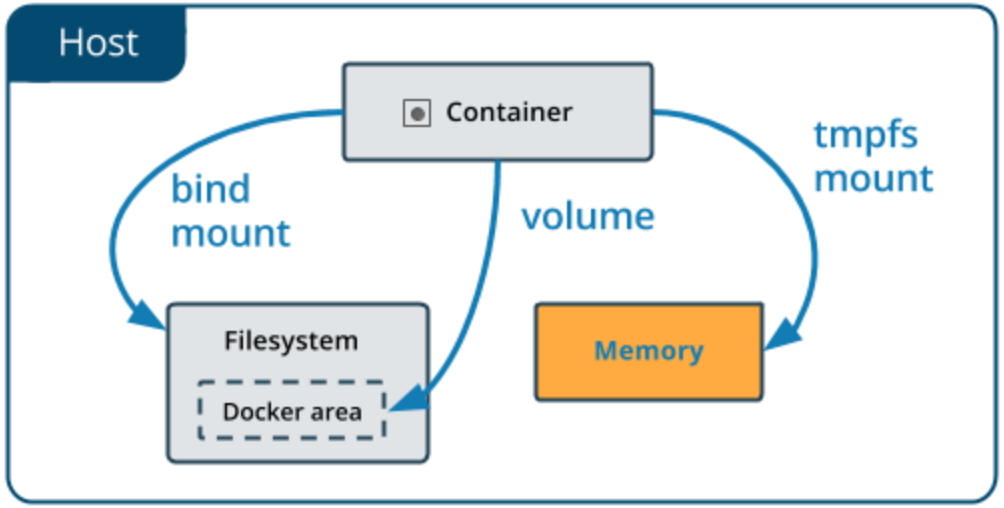
```
docker run -d -p 3000:3000 app-upload:0.1
```

```
docker run -P app-upload:0.1
```

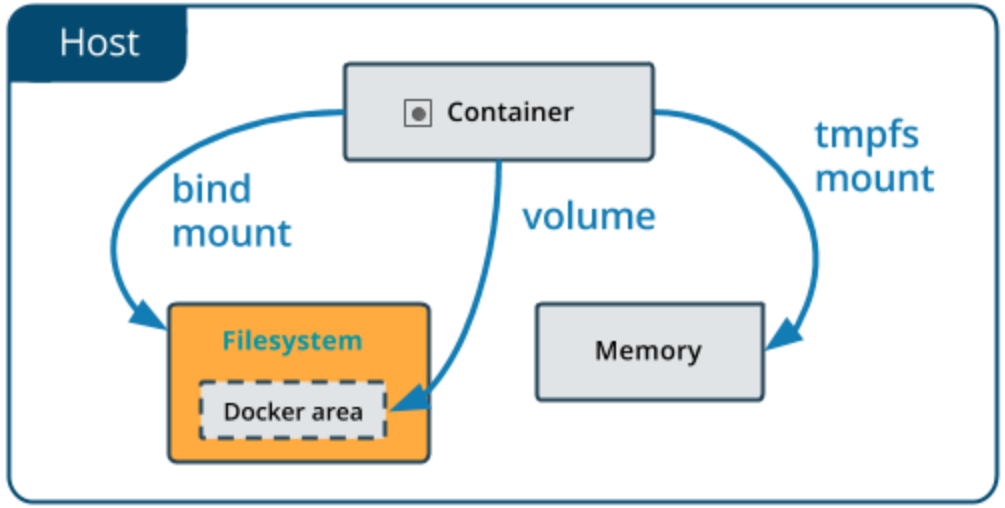
Volume mount



1. tmpfs mount



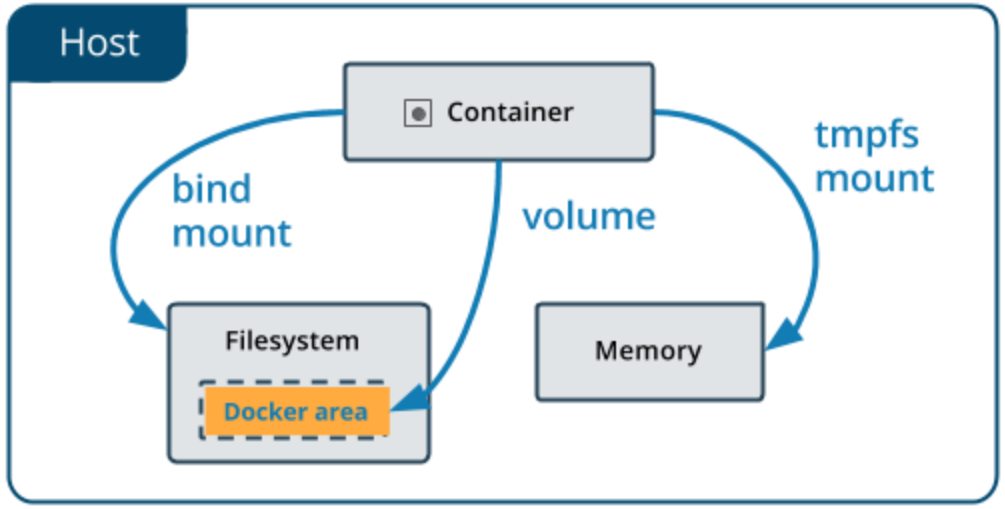
2. Bind mount




```
docker run -d -p 3000:3000 -v $(pwd)/uploads:/home/node/uploads app-upload:0.1
```

- -v is a volume mounting `HOST DIRECTORY` : `CONTAINER DIRECTORY` .

3. Volume




```
docker volume create upload-app
```

```
docker volume ls
```

```
docker volume inspect {{volumeId}}
```

```
docker run -d -p 3000:3000 -v upload-app:/home/node/uploads app-upload:0.1
```

```
docker volume rm upload-app
```

Checkpoint

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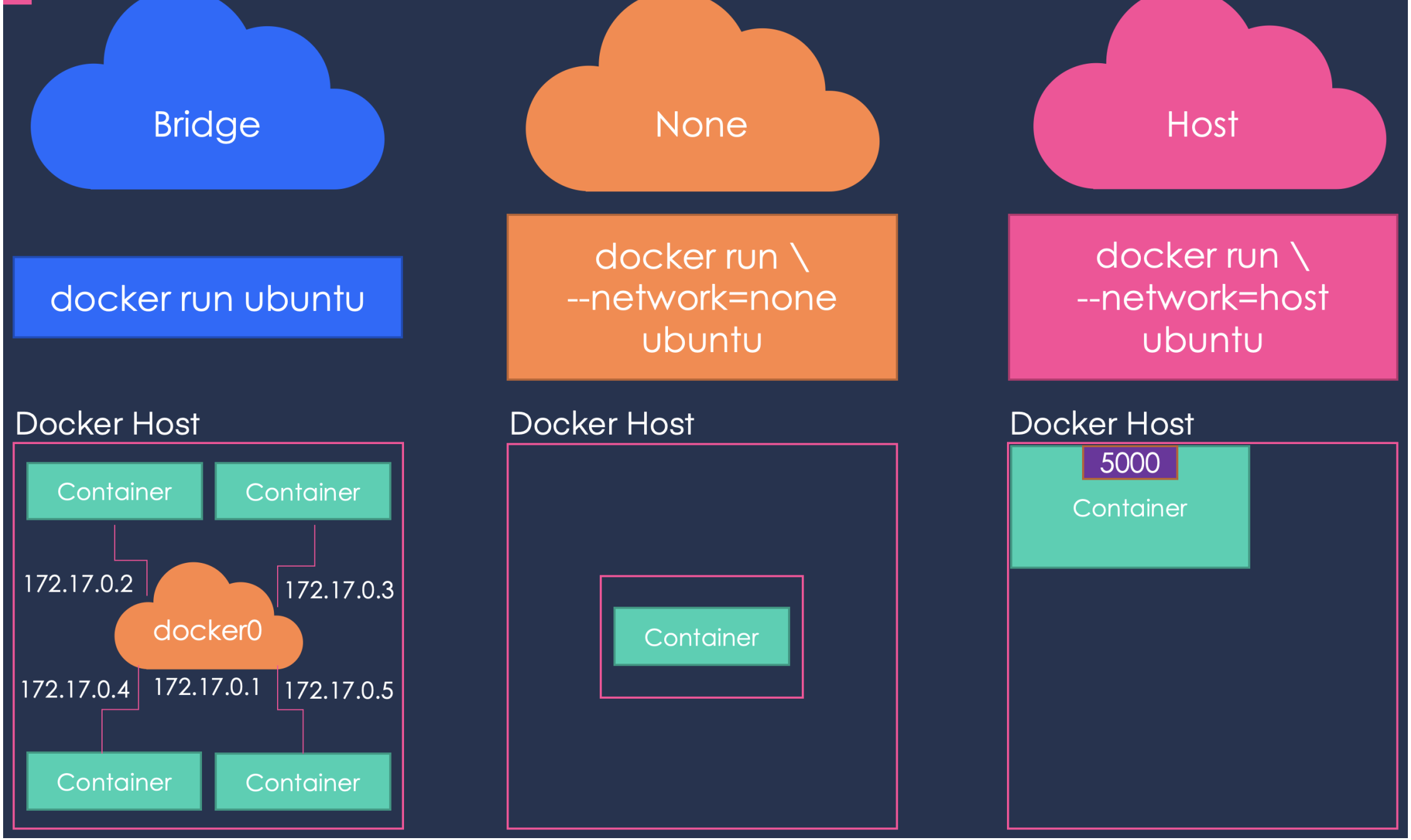
Networking

```
docker network ls
```

Type of network

1. Bridge Network
2. None Network
3. Host Network
4. Overlay Network



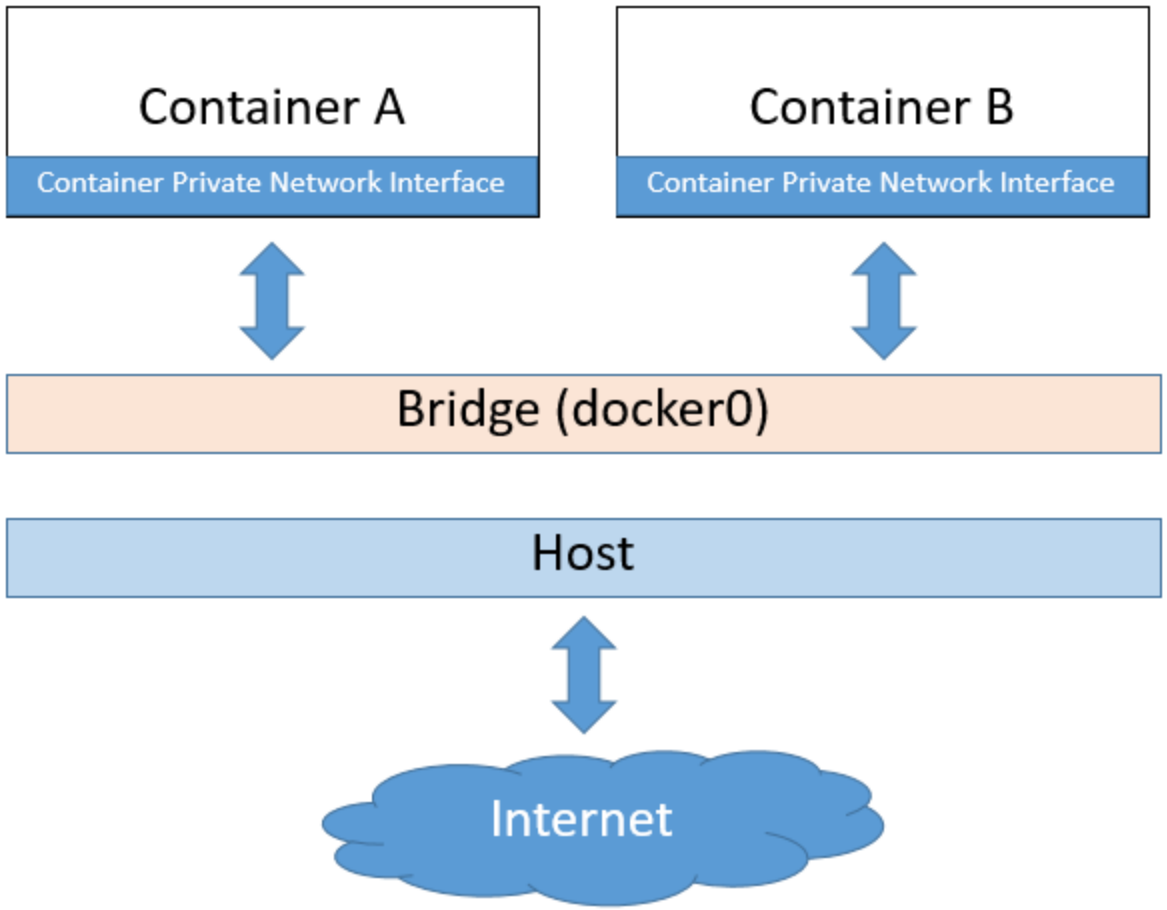
https://morioh.com/p/07e61c20c234

1. Bridge network

```
docker run -itd --name network-app-01 alpine
```

```
docker run -itd --name network-app-02 alpine
```

```
docker network inspect bridge
```



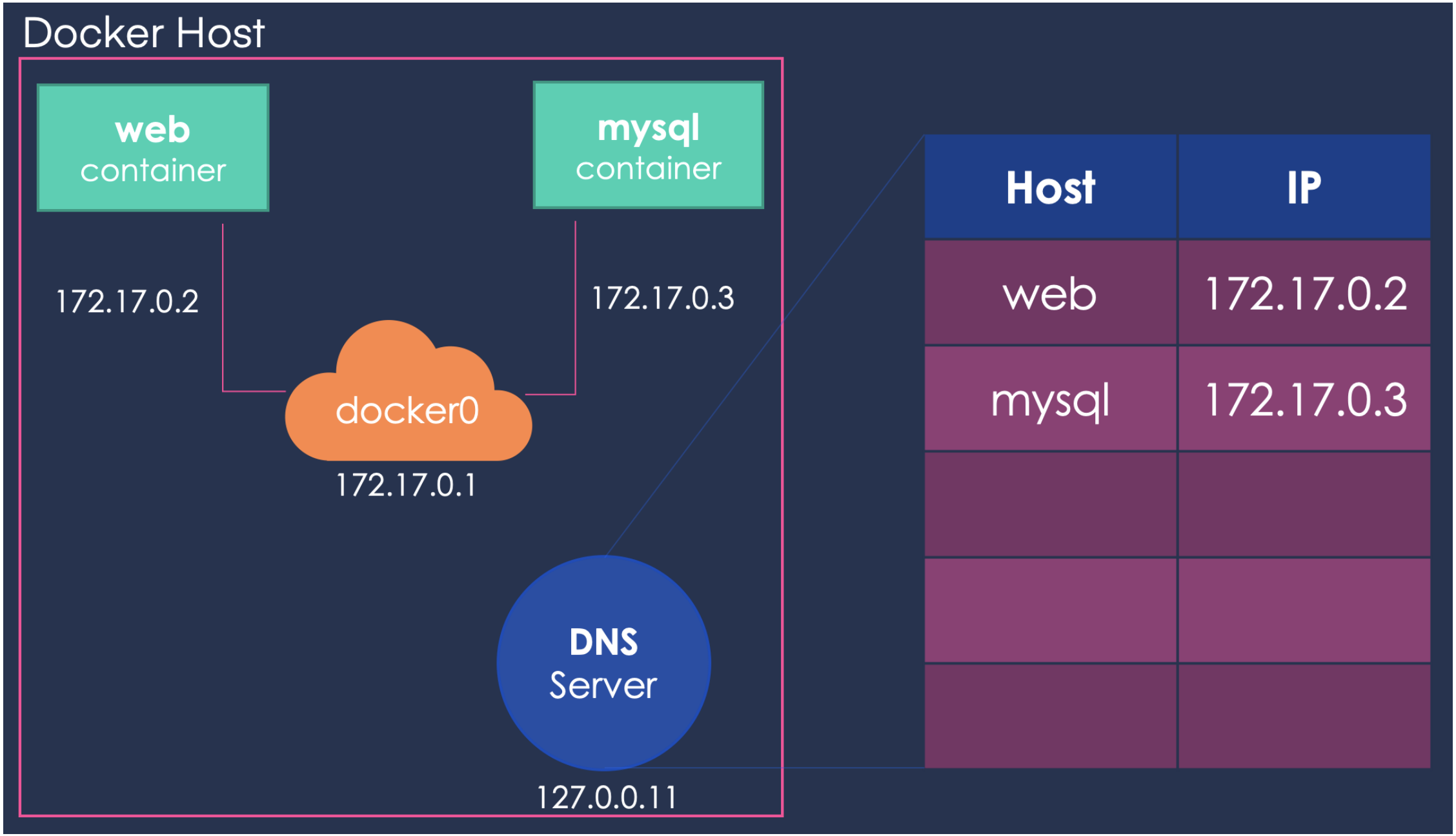
https://medium.com/@somprasongd/docker-networking-59b6637de3df

Check ip of container

```
docker exec -it network-app-01 ifconfig
```

```
docker exec -it network-app-02 ifconfig
```

```
docker exec -it network-app-02 ping {ip}
```



https://morioh.com/p/07e61c20c234

Linking by container name

```
docker rm network-app-01 -f
```

```
docker rm network-app-02 -f
```

```
docker run -itd --name network-app-01 alpine
```

```
docker run -itd --name network-app-02 --link network-app-01 alpine
```

```
docker exec -it network-app-02 ping network-app-01
```

Create own network

```
docker rm network-app-01 -f
```

```
docker rm network-app-02 -f
```

```
docker network create --driver bridge app-network
```

```
docker network ls
```

```
docker run -itd --name network-app-01 --network app-network alpine
```

```
docker run -itd --name network-app-02 --network app-network alpine
```

```
docker exec -it network-app-02 ping network-app-01
```

2. None network

```
docker run -itd --name app-none-network --network none alpine
```

```
docker exec -it app-none-network ping 1.1.1.1
```

```
docker exec -it network-app-02 ping 1.1.1.1
```

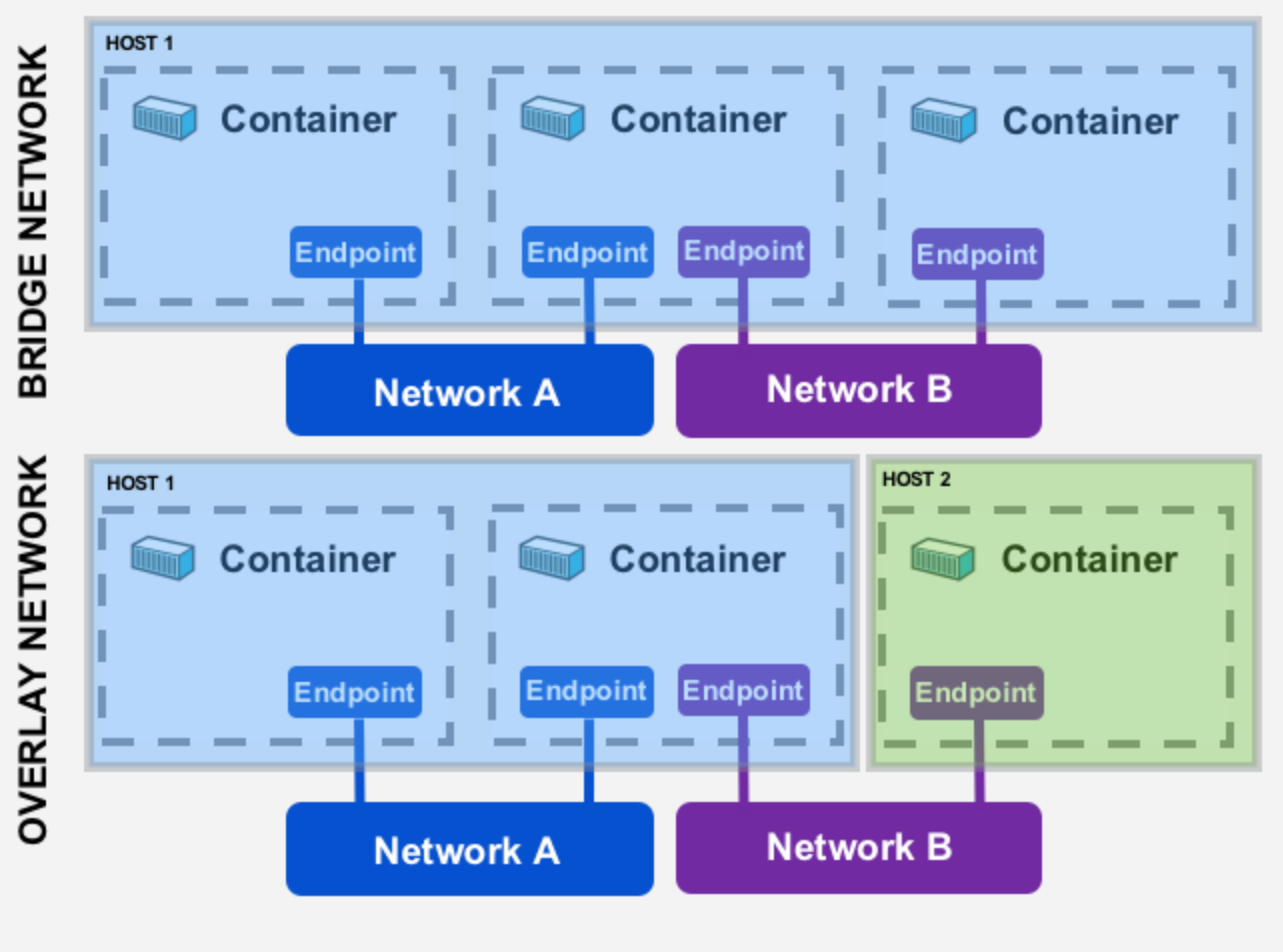
3. Host network

```
docker run -itd --name app-host-network --network host alpine
```

```
docker network inspect host
```

```
docker exec -it app-host-network ifconfig
```

4. Overlay network



Lab 10. Golang api

```
docker build ???
```

```
docker run ???
```

```
docker images
```

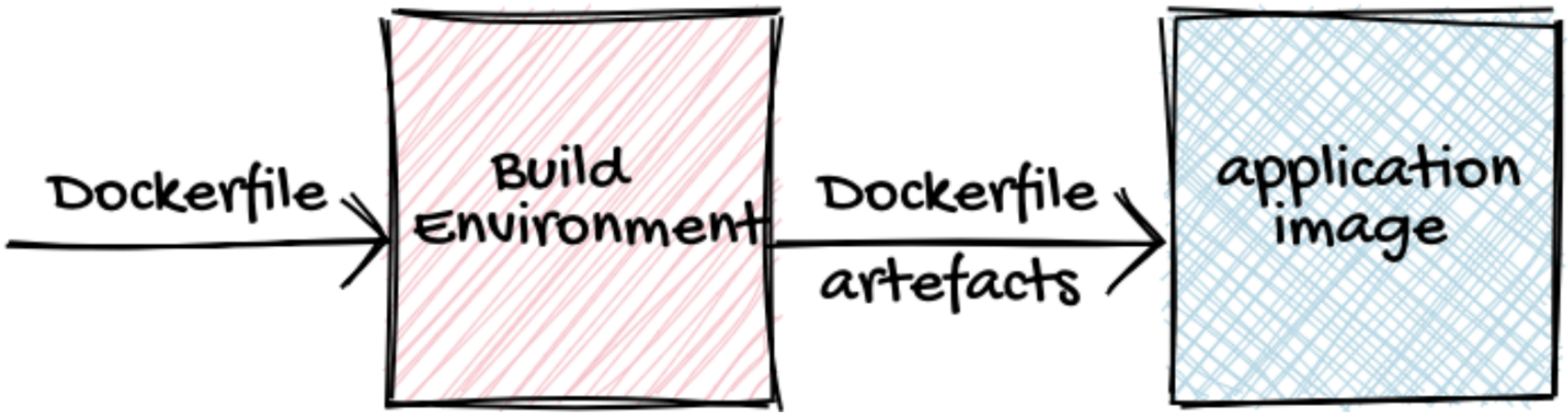
Let's build multistage

```
docker build -f Dockerfile.multi -t app-go:0.2 .
```

```
FROM golang:latest
WORKDIR /app/backend
COPY . .
RUN CGO_ENABLED=0 GOOS=linux GOARCH=amd64 go build -a -o main .
RUN chmod +x ./main
ENTRYPOINT ["./main"]

EXPOSE 3030
```

Multi-Stage Build



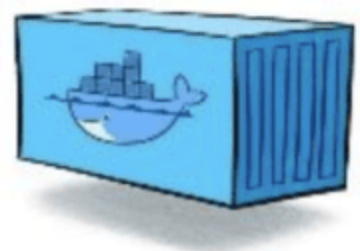
```
FROM golang:latest AS build
WORKDIR /app/backend
COPY . .
RUN CGO_ENABLED=0 GOOS=linux GOARCH=amd64 go build -a -o main .
```

```
FROM alpine
RUN apk --no-cache add tzdata
ENV TZ Asia/Bangkok
WORKDIR /app
COPY --from=build /app/backend/main .
RUN chmod +x ./main
ENTRYPOINT ./main

EXPOSE 3030
```

build

run



Dockerfile

Docker Image

Docker Container

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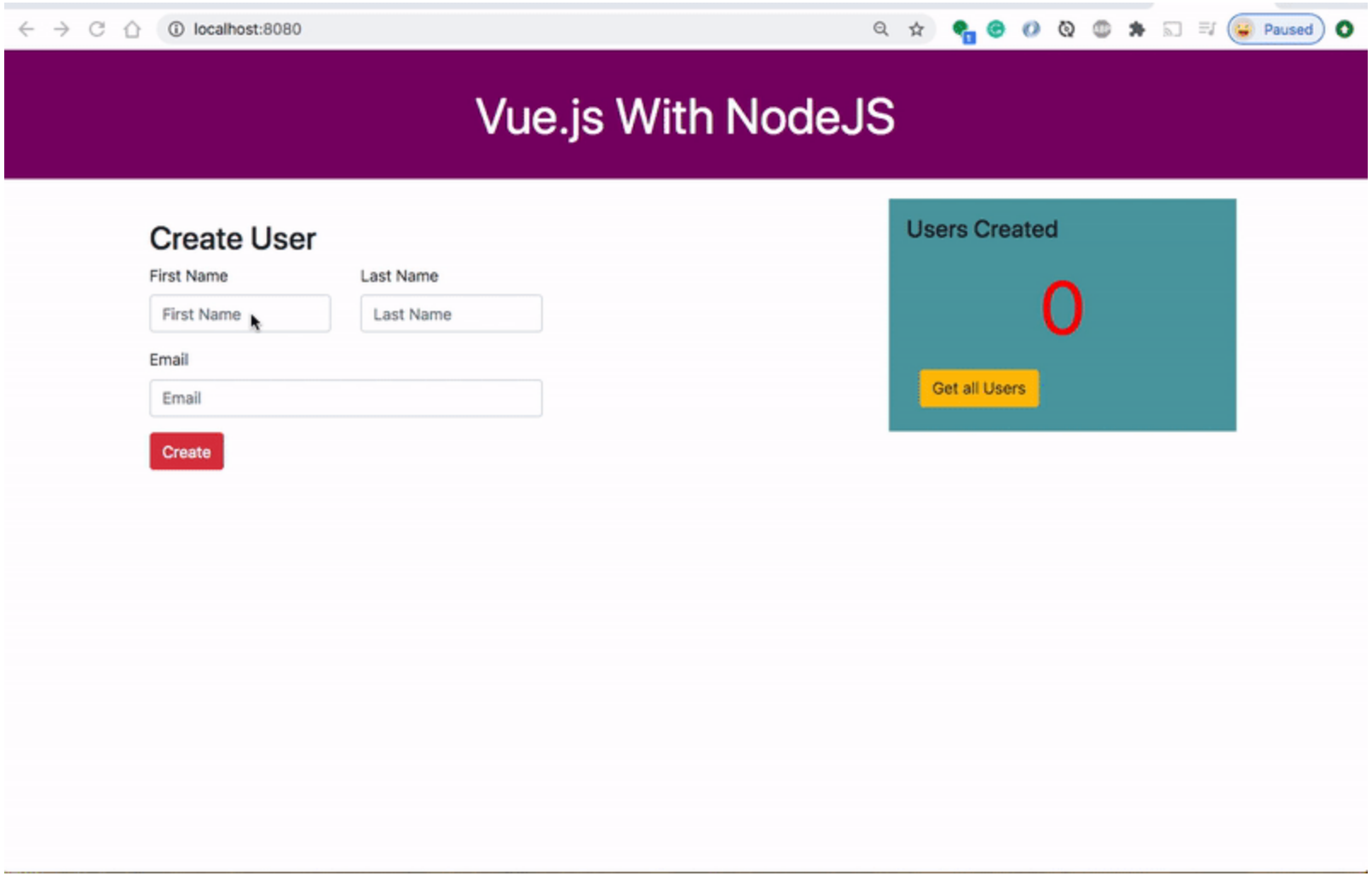
Real-world example project



:Ref

Github

```
git clone https://github.com/nitipatl/vuejs-nodejs-example.git
```

```
docker build -t vue-node-image:0.1 .
```

```
docker run -it -p  3080:3080 --name vue-node-ui vue-node-image:0.1
```

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Deploy container to Heroku (Bonus!)

```
heroku login
```

```
heroku container:login
```

```
heroku create
```

Push image to Heroku

```
heroku container:push web --app warm-dusk-59086
```

Release app / run container

```
heroku container:release web --app warm-dusk-59086
```

```
heroku open --app warm-dusk-59086
```

```
heroku logs --tail --app warm-dusk-59086
```

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- [ ] Auto deploy with Github (Bonus!)

12 Factors app

Link