Docker Tutorial Part-1: How to create Docker Image, How to run it
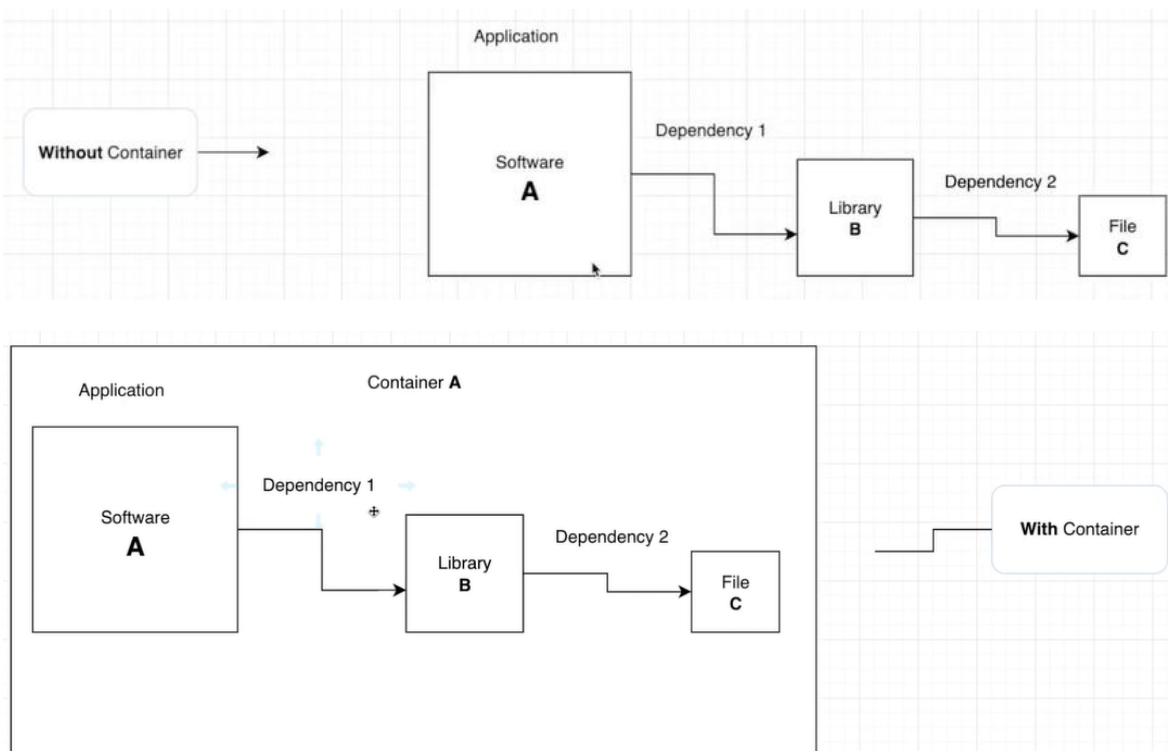
Introduction to Docker

We will cover:

1. What is containerized development

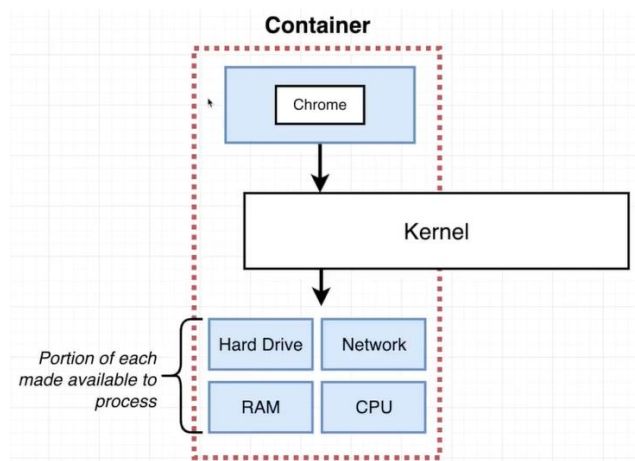2. What is Docker, and what does it do?

3. Why docker can help development
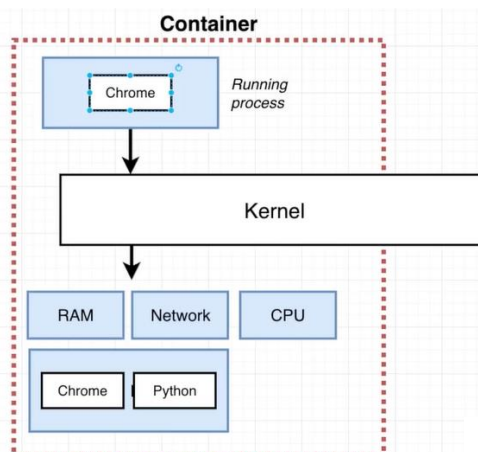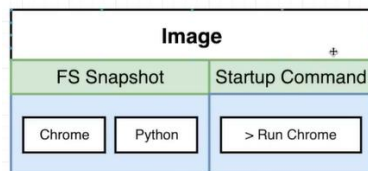
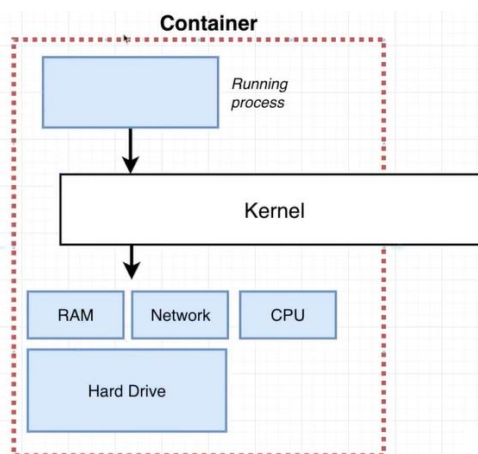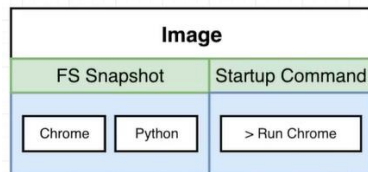## What is containerized development

What is Containarization?

What is Docker Container?

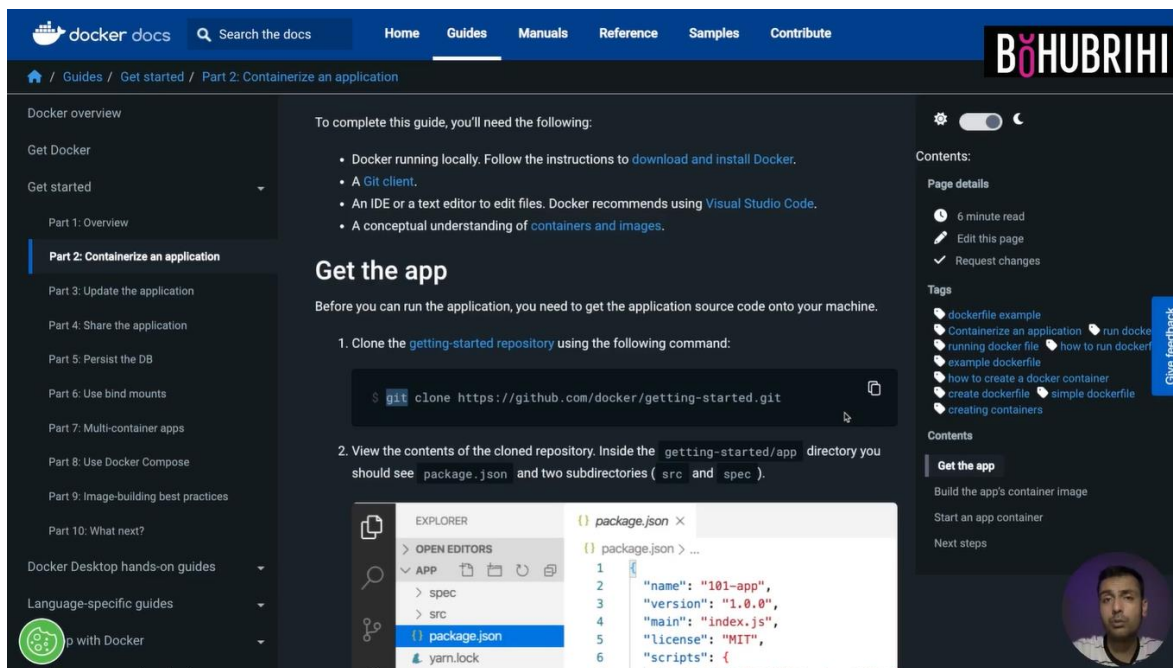# What is Docker Image?

How to clone a project from github?

Step-1: Clone an application from the repository

    a. Go to docker official site https://docs.docker.com/get-started/workshop/02_our_app/ and copy the git command

    b. In VSCODE, open terminal and type below command

```
git clone https://github.com/docker/getting-started-app.git   ←-|
```

```
project structure
--------------------------
├── getting-started-app/
│   ├── .dockerignore
│   ├── package.json
│   ├── README.md
│   ├── spec/
│   ├── src/
│   └── yarn.lock
```

    c. In the "getting-started-app" project, right click on "getting-started-app" and create a file "Dockerfile" and open it, type below command

```
FROM node:lts-alpine      //requirement apps:version   (Base Image)
WORKDIR /app              //create /app directory in root directory in your pc
COPY . .                  //copy source directory all file&folder to DestinationDirectory (/app)
RUN yarn install –production   //install NodePackageManager for dependency copy
CMD ["node", "src/index.js"]   // command to run project
EXPOSE 3000              //project will run in browser https://localhost:3000 port
```

    d. In VSCODE terminal, type build image command

```
-  Check Docker is running or not. Docker must be running

cd getting-started-app   ←-|  //login to project directory

docker build -t getting-started . ←-|   //-t is tag, is used for giving a name
```

e. To see all Docker images created in your pc,

```
docker images    ←-|
```

```
REPOSITORY         TAG        IMAGE ID        CREATED        SIZE
getting-started    latest     d30faac8547f    4 hours ago    249MB        //one images
```

f. To run docker image in localhost:3000 port

```
docker run -d -p 127.0.0.1:3000:3000 getting-started    ←-|    //-d = detach
```

> docker run -d -p 127.0.0.1:3000:3000 getting-started ←-|
>
> here -d = detach, runs the container in the local browser.
> -p = port mapping.
> 127.0.0.1:3000   is local browser ip and port (localhost: portnumber).
> :3000 (Image portnumber).
> getting-started   is Docker image file name
>
> we can make a relation between our localhost 3000 port with container
> 3000 port as below way
> docker run -p 3000:3000 getting-started   ←-|
> docker run -p 5000:3000 getting-started   ←-|

g. Open browser and type 127.0.0.1:3000 and press enter

h. To see Running Docker container in command prompt, open command prompt cmd

```
docker ps   ←-|
```