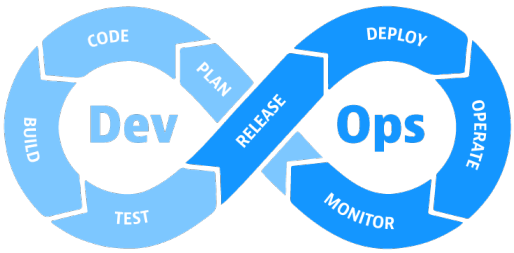
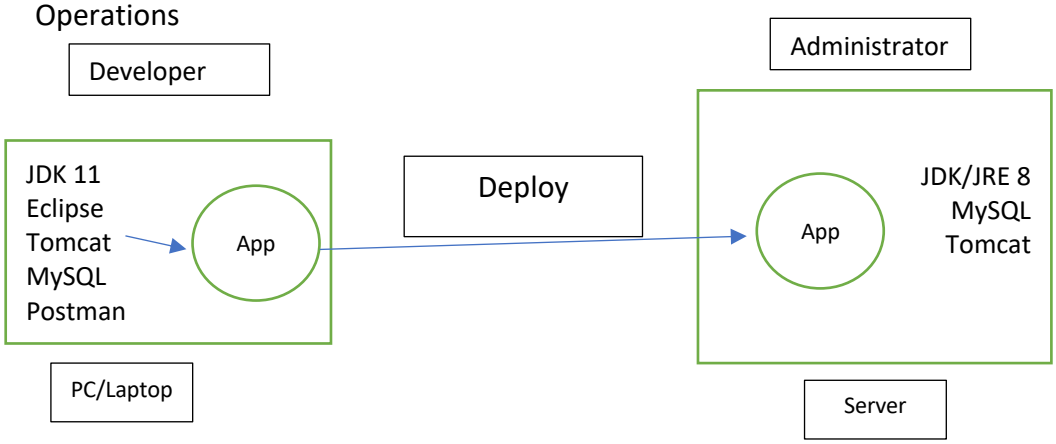
DevOps

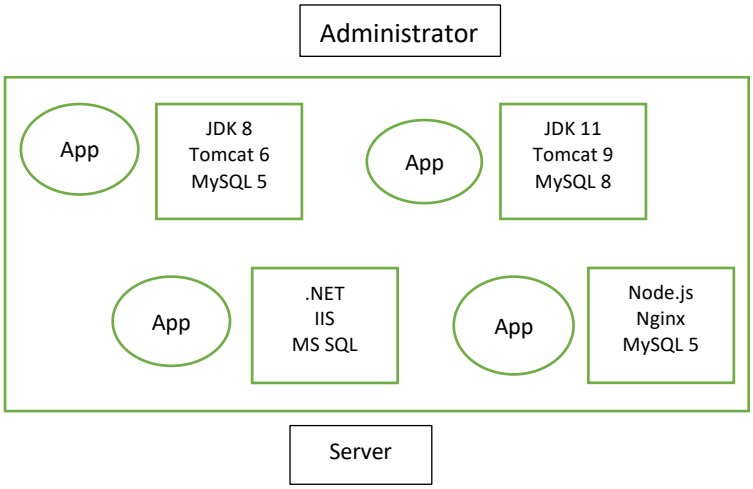


- Automation
- Automation of the process involved in the deployment of an application

Developer
Operations



Delay in getting the application deployed



Virtualization

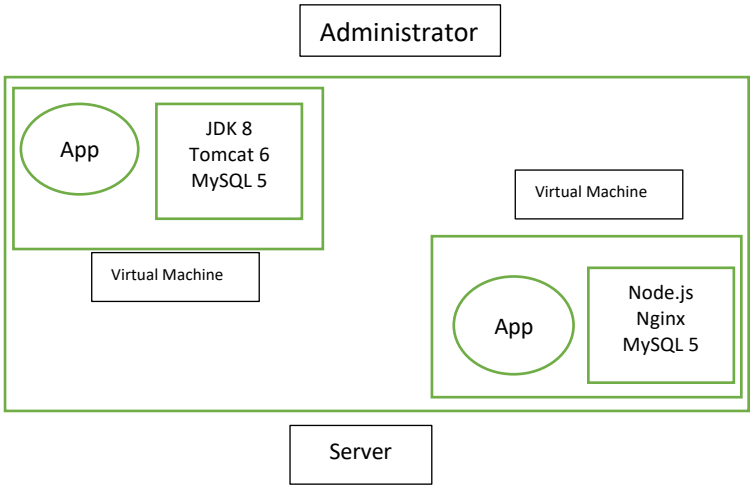
- The ability to run multiple OS at the same time on a single computer
- This is achieved by using something called as Hypervisor
    - VMware Fusion
    - Oracle Virtualbox
    - Microsoft Hyper-V
- VMs are heavy, cannot be used in every usecase

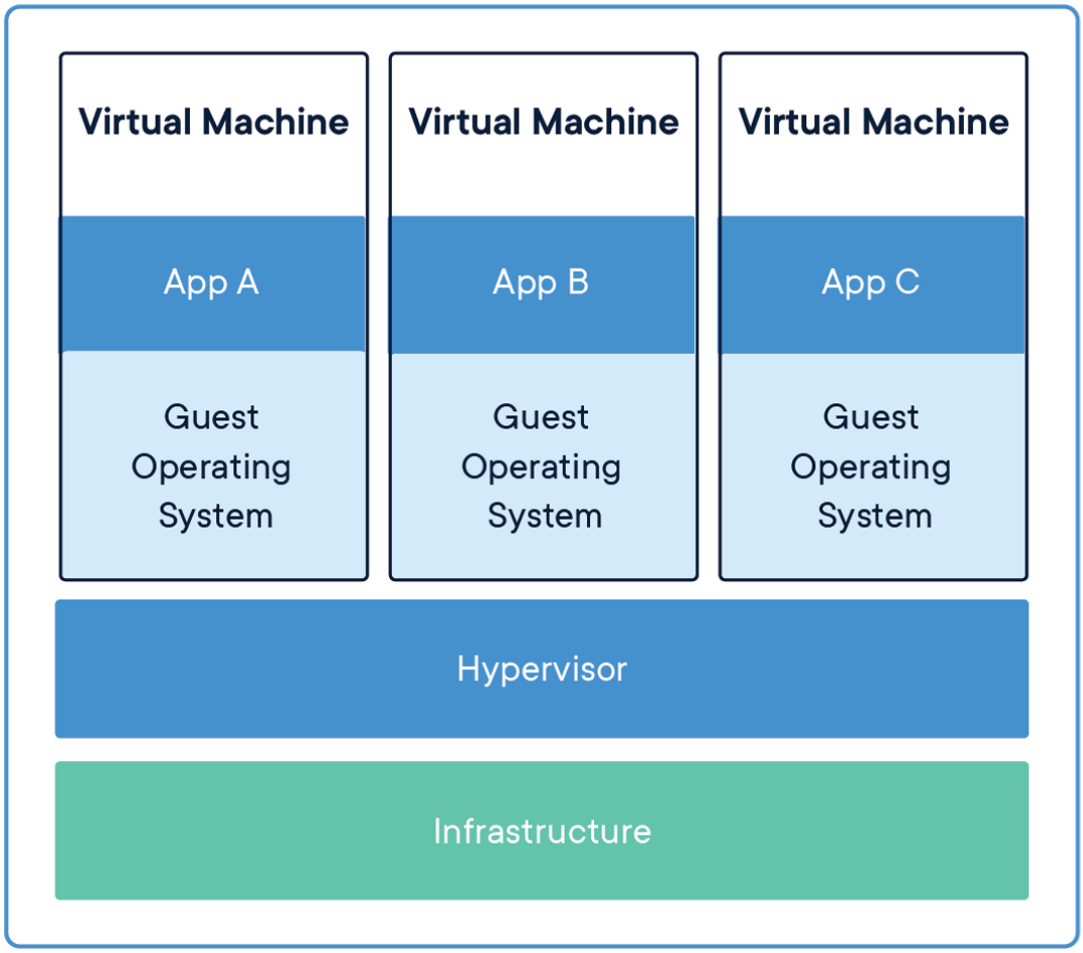
Containerization

- Another form of virtualization
- VM inside a VM
- Lightweight, they will share resources provided by the Hypervisor

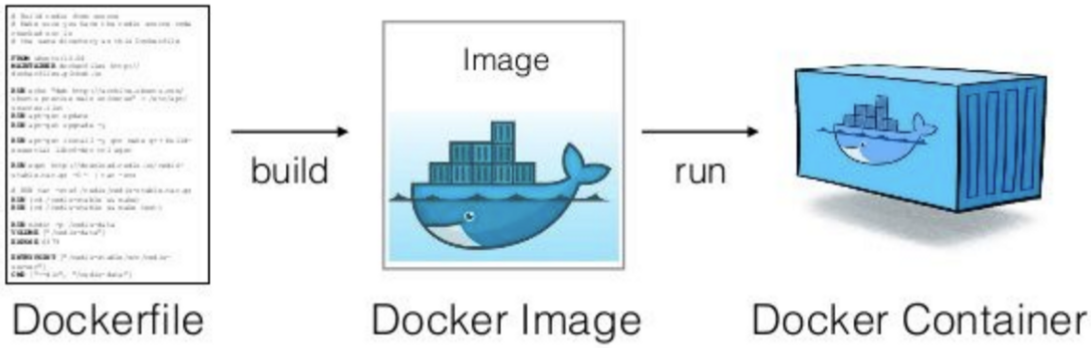
Docker

- Containerization software
- Pre-requisite:
    - Machine with atleast 8 GB RAM
    - Docker requires the following things to be enabled on the system:
        - WSL2
        - Enable Virtualization in BIOS
        - (Open Task Manager and Check if Virtualization is already enabled)





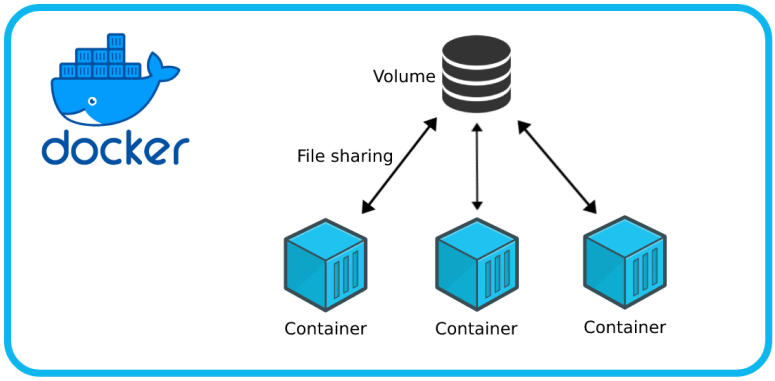
Steps involved in learning Docker

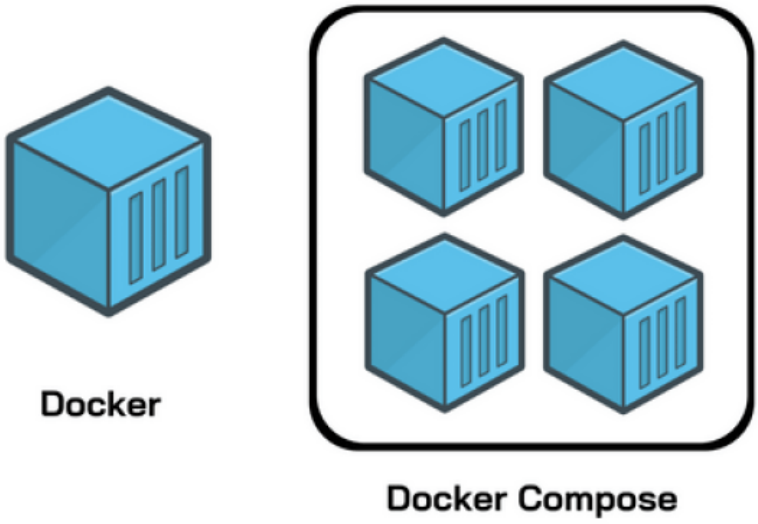


A Docker image will comprise of:

- OS
- Volumes for persistence storage
- Softwares to run our app (JDK/Node/.NET)
- Our Application files

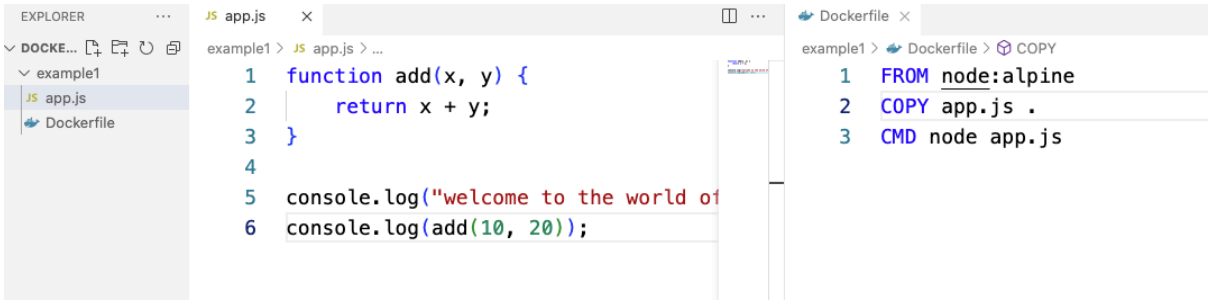
- Command to run our App





Docker compose is used for managing multi-container apps

- For ex:
    - Frontend code in one container
    - Backend code in another container
    - Database server in yet another container



To run this app on some other person's system:

1. Download/Copy and install Node.js
2. Copy our application's code on this person's system somewhere
   (for ex: c:\myapp)
3. Open a command prompt (cmd) and then:
   cd c:\myapp
   node app.js

Instead of asking that person to follow all these steps:
- What we will do is ask him to install Docker
- Next we will create a Docker image which will contain:
   - An OS (ex: Linux)
   - Required Software (ex: Node.js)
   - Application Files (copy ..)
   - Command for executing the application (node ..)

- Now that person just needs to obtain this image and run the same with the help of Docker