DEVOPS ASSIGNMENT – 02

NAME – BHARATH S

USN NO - 4NI19IS022

Section - A

Topic – (Hypervisor v/s Docker),

(Virtual Machine v/s container)

1. Difference Between Hypervisor and Docker ?

HYPERVISOR	DOCKER
Hypervisors can be made to work on software and hardware where it works on the operating system or on the CPU and storage services of the system.	Dockers work only on the software of the operating system and not on the hardware side. It takes the host kernel and works on the principle of virtualization.
In a single system, we can use multiple operating systems with the help of Hypervisor. This makes the system to work with multiple users with different methods even for the same program. Hence the same operation is done by different operating systems.	Docker does not allow users to create multiple instances of operating systems in the same computer but it makes virtualization by making containers in the same system. Containers help users to work separately on different or the same applications. The same operations are carried out by containers in the system.
More power and resources are required by the systems using hypervisors as different programs are being run on the same system with different operating systems.	Resource requirement is low as containers are working on the same operating system and this makes the system share resources within the containers.
Boot time is high for hypervisors as different operating systems are used. It may take some minutes to start the system and users can resume their work only after booting the machine.	Boot time is low for dockers as all the containers work on the same machine. User can start the system in seconds and can start working on the same machine.

2. Difference between Container and Virtual Machines ?

Virtual Machine	Container
The hardware is virtualized to execute several Operating system instances with VMs	Containers facilitate a way for virtualizing the operating system so that several workloads can execute on an individual operating system instance
VM is managed via hypervisor and uses VM hardware.	Containers give services of OS from an underlying host and also separate the applications utilizing virtual-memory hardware.
VM facilitates the abstract machine which utilizes device drivers addressing an abstract machine.	Container facilitates the abstract operating system.
VM technologies are well-known within various embedded communities.	The container has been grown on several clouds and servers with organizations like Google and Facebook. For example, all services of Google Docs get a container/instance.
Higher overhead	Lower overhead
VM permits us for installing other software so virtually we control it as disputed to install the software on a computer directly.	The containers are software that permits distinct application's functionalities independently.
Applications executing on virtual machine system can execute distinct OS.	Applications executing within the container environment contribute to an individual OS.
VM facilitates a way for virtualizing any computer system.	Container only virtualizes the OS.
VMs have a large size.	Containers are very light (some megabytes).
VM runs in minutes due to its large size.	Containers run in seconds.
It utilizes a lot of memory of the system.	Containers utilize very less system memory.
It is highly secured.	It is less secure.