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Class: MSc. C.S. B-21
DevOps - Assignment-01

Q1.] Write a summary about the following.

a] SaaS

SaaS, or software-as-a-service, is application software hosted on the cloud and used over an internet connection via a web browser, mobile app or thin client. The SaaS provider is responsible for operating, managing and maintaining the software and the infrastructure on which it runs. The customer simply creates an account, pays a fee, and gets to work. Examples: Google Applications, Adobe Suite, Netflix.

b] PaaS

PaaS, or Platform-as-a-Service, is a cloud computing model that provides customers a complete cloud platform—hardware, software, and infrastructure—for developing, running, and managing applications without the cost, complexity, and inflexibility that often comes with building and maintaining that platform on-premises. The PaaS provider hosts everything—servers, networks, storage, operating system software, databases, development tools—at their data center. Typically customers can pay a fixed fee to provide a specified amount of resources for a specified number of users, or they can choose 'pay-as-you-go' pricing to pay only for the resources they use. PaaS enables customers to build, test, deploy run, update and scale applications more quickly and inexpensively. Examples: Heroku, Github.

c] IaaS

IaaS is internet access to 'raw' IT infrastructure—physical servers, virtual machines, storage, networking, firewalls—hosted by a cloud provider. The user doesn't have to have an on-premise datacenter and doesn't have to worry about physically updating or maintaining these components themselves. In the IaaS model, users handle the applications, data, operating system, middleware, and runtimes. IaaS eliminates cost and work of owning, managing and maintaining on-premises infrastructure, Since the user handles it. With IaaS the organization provides its own application platform and applications. In most cases, the IaaS user has complete control of the infrastructure through an API or dashboard. IaaS makes it easier to scale, upgrade, and add resources—like cloud storage—instead of having to anticipate future needs and pay costs up front. Examples: Amazon Web Services, Microsoft Azure, and Google Compute Engine

d] IaasC

IaaSC is the managing and provisioning of infrastructure through code instead of through manual processes. The IT infrastructure managed by this process comprises both physical equipment, such as bare-metal servers, as well as virtual machines, and associated configuration resources. With IaasC, configuration files are created that contain your infrastructure specifications, which makes it easier to edit and distribute configurations. The definitions may be in a version control system. It also ensures that you provision the same environment every time. By codifying and documenting your configuration specifications, IaasC aids configuration management and helps you to avoid undocumented, ad-hoc configuration changes. The code in the definition files may use either scripts or declarative definitions, rather than maintaining the code through manual processes, but IaasC more often employs declarative approaches. Examples: Ansible, Chef, Puppet, Terraform.

Q2.] What is Software? [In 10 Lines]

Ans:

Software is a collection of instructions, data or programs that we can use to execute specific tasks and it also enables user to interact with the computer.

Types of Softwares include Application software, System software and Device Drivers.

Software is logical in nature

Application software helps us solve some task e.g. taking notes, calculating sum. System Software helps us interact with the hardware.

Device Drivers help us to interact with the peripherals connected to the hardware.

If a software fails it doesn't affect the overall functionality of the hardware.

Software does not have an increasing failure rate.

Software is durable and doesn't wear out.

There might be some errors in the working of a software which are called bugs, these can be easily rectified.

Examples of Softwares:

Application Software: Web Browser, Calculator.

System Software: Operating System.

Device Drivers: Drivers for peripherals such as mouse, keyboard, etc.