Assignment - ?

Q1:- Why is DevOps a major requirement in today's scenario?

→ In a nutshell the DevOps model allows companies to create viable application and programmers within a much shorter time frame, thus accelerating the speed of innovation.

It is a major requirement because it's a software development and operational approach that enables faster developments of new products and easy maintainance of existing deployments.

Some important benefits of DevOps as a major requirement:-

① Faster solution
② Increased efficiency
③ Improved customer experience

④ faster ROI
⑤ Improved performance.
⑥ Continuous improvements.

⑦ Reduce failures and roll back.

→ Greater stability of IT Software applications as it brings various departments such as IT, product, engineering, cybersecurity, operations and more and unites them in common objectives of achieving business targets.

→ In this approach the software is seen as a tool to improve organizational efficiency and security by automating several key process.

Q2:- Explain all DevOps tools in details?

→ Since no single tool work accross all areas of development and delivery. The need is to first understand the process and accordingly map the tool to be successfully establish DevOps culture in organization.

① **Jenkins:-** an excellent DevOps automation tool being adopted by increased number of software development teams, it is essentially an open source CI/CD server that helps in automating the different stages of delivery pipelines.

② **Git:-** widely used across software industries, Git is an distribu-ted SCM (Source code management) devOps tool. It allows you to easily track the progress your development work, where you can save different versions of source code and return to previous one as when required.

③ **Nagios:-** One of the most popular free and open-source DevOps monitoring tool, Nagios allows you to monitor your infrastructure real time so that identifying security threats, detection of outages and error becomes easier.

④ **Docker:-** it is one of the widely used development tool of DevOps and is known to provide platform indepen-dent integrated container security and agile operations for cloud native and legacy applications.

⑤ Kubernetes:- ideal for large teams, this Dev Ops tool is built on what docker started in the field of containazation. It is a powerful tool that can group containers by logical categorisation.

⑥ Ansible:- It is primarily a design management and organization devOps tool. It is written in simple programming language YAML. It makes easier for DevOps teams to scale the process of automation and speed up produc -tivity.

⑦ Chef:- this devops tool is mainly used for checking the configurations and it is helpful in automating the infrastructure.

⑧ Puppet:- it is an open source configuration management tool that is used for deploying, configuring and managing servers.

⑨ Splunk: it is designed to make machine data useable as well as accessible to everyone by delivering operational intelligence to Dev ops teams.

It is an excellent choice of tool that make companies more secure, productive and competitive.

⑩ Gradle:- an extermely versatile Dev Ops tool, Gradle allow you to write your code in various languages including C++, java, python among others. It is supported by various IDE's such as hot beans, Eclipse and IntelliJ IDEA.