# What is DevOps?

# DevOps is the practice of operations and development engineers participating together in the intire service lifecycle, from design through the development process to production support.

# DevOps is the combination of cultural philosophies, practices, and tools that increases an organization’s ability to deliver application and services at high velocity: evolving and improving products at a faster pace than organizations using traditional software development and infrastructure management processes. This speed enables organizations to better serve their customers and compete more effectively in the market.

# Why DevOps?

# The benefits offered by employing the DevOps approach throughout the software development lifecycle include:

# Develop and test against production-like systems.

# More frequent releases / deployment (faster time to market) more agile.

# Infrastructure is easily available and can be provisioned on demand.

# Lower chance of product failure once deployed (stability).

# Faster time to recovery after unexpected events.

# Increased efficiency through automation.

# Maintainability (and scalability) of Ops processes.

# What are DevOps tools?

# 1- Git

# Features:

# Open source version control tool

# Decentralized source code management tool

# It is highly scalable

# Support non-linear development

# Easy branching

# It is reliable as every contributor has his own local repo

# 2- Jenkins

# Features:

# It is most famous continuous integration tool

# It is an open source tool with great community support

# It has 2000+ plugins to ease your work

# It is built with java and hence, it is portable to all the major platforms

# 3- Selenium

# Features:

# Software tool to automate web browsers

# It is open source and mainly used for functional testing and regression testing

# Support different PL -> Java, Python, C#, PHP, Ruby, Perl, JavaScript

# Support different OS -> Windows, MacOS, Linux, iOS, Android

# 4- Docker

# Features:

# Docker is a containerization platform

# Provides agility to SDLC

# Provides portability

# Provides security to deliver applications safely across the entire lifecycle

# Helps in cost optimization

# Lightweight alternative to VMs

# 5- Puppet

# Features:

# Most famous configuration management tool

# Used for deploying, configuring and managing servers

# Has a master-slave architecture

# Open source tool

# Long commercial track record

# 6- Chef

# Features:

# It is a configuration management tool

# Support multiple platforms like AIX, RHEL/CentOS, FreeBSD and can be integrated with cloud-based platforms

# Open source tool

# Active, smart and fast growing community support

# 7- Ansible

# Features:

# It is an open source configuration management tool

# Support push configuration it has a master-slave architecture

# It has completely agentless

# It uses simple syntax written YAML

# 8- Splunk

# Features:

# It is used to store, search, analyze and visualize the machine generated data

# It can ingest any type of data file

# Create knowledge objects for operational intelligence

# It monitors business metrics

# 9- ELK

# Features:

# It is a powerful collection of three open source tools: Elasticsearch, Logstash, and Kibana

# Logstash is the data collection pipeline tool

# Elasticsearch is a NoSQL database

# Kibana is a data visualization tool

# 10- Nagios

# Features:

# It monitors and troubleshoot server performance issues

# It allows us to plan for infrastructure upgrades before outdated systems cause failures

# It can be used to automatically fix problems when they are detected