TYPESCRIPT:-

* TypeScript is a superset of JavaScript. It is an object-oriented and tightly typed [programming language](https://www.simplilearn.com/tutorials/programming-tutorial/first-programming-language). TypeScript code is transformed to JavaScript, which may be used in any environment that supports JavaScript, including browsers,[Node.js,](https://www.simplilearn.com/tutorials/nodejs-tutorial/what-is-nodejs) and your own applications.

### ****5. What is Docker?****

### docker the tool which simplifies building shipping and running applications when I say building it means a creation of an application when I say shipping it means the movement of an application from one machine to other machine****3. What is containerization?****

### doctor is the software containerization platform now what does this mean this means that you can build your application once application is built you can package that application with all its dependencies into a box called container

Let me explain this is with an example. Usually, in the software development process, code developed on one machine might not work perfectly fine on any other machine because of the dependencies. This problem was solved by the containerization concept. So basically, an application that is being developed and deployed is bundled and wrapped together with all its configuration files and dependencies. This bundle is called a container. Now when you wish to run the application on another system, the container is deployed which will give a bug-free environment as all the dependencies and libraries are wrapped together. Most famous containerization environments are Docker and Kubernetes.

### ****7. What are Docker Images?****

When you mention Docker images, your very next question will be “what are Docker images”.

Docker image is the source of Docker container. In other words, Docker images are used to create containers. When a user runs a Docker image, an instance of a container is created. These docker images can be deployed to any Docker environment.

### ****8. What is Docker Hub?****

Docker images create docker containers. There has to be a registry where these docker images live. This registry is Docker Hub. Users can pick up images from Docker Hub and use them to create customized images and containers. Currently, the [Docker Hub](https://hub.docker.com/) is the world’s largest public repository of image containers.

What is Kubernates?

Networking, Load-balancing, Security, Horizontal scaling, Self-healing, and Storage orchestration.

Kubernetes helps developers manage, automate, and scale containerized applications across clusters of hosts.

What is Eureka Server?

Eureka Server is a centralized registry that stores and manages information about all registered services and their instances.

Eureka Server is useful when deploying services with horizontal auto scalability, such as Kubernetes. It can scale services based on configured equations, such as resource usage and client connections.

**Why use Eureka Server?**

Eureka Server is a service registry that plays a central role in the automatic detection of devices and services on a network. It acts as the heart of your microservices ecosystem, allowing service instances to register themselves and facilitating service discovery. Key aspects of Eureka Server include:

* Client Registration: Instances of microservices automatically register themselves with Eureka Server.
* Service Discovery: Eureka Server maintains a registry of all client applications running on different ports and IP addresses.

**Benefits of using Eureka Server in Spring Boot Applications**

Eureka Server operates on a simple “Register, Lookup, Connect” principle, making it an excellent choice for managing microservices in a Spring Boot environment. Here are some compelling reasons to use Eureka Server:

1. Centralized Service Registry: Eureka Server knows about all client applications and their locations. This centralization simplifies service discovery.
2. Automatic Registration: Microservices automatically register themselves with Eureka Server, reducing manual configuration efforts.
3. Load Balancing: Eureka Server can help implement load balancing among service instances.
4. Health Checks: Eureka Server can perform health checks on registered services, ensuring robustness and reliability.
5. Integration with Spring Cloud: Eureka Server seamlessly integrates with the Spring Cloud ecosystem, enabling easy scaling and deployment.

What is Sonarqube ?

SonarQube is a Java-based, open-source tool that helps analyze software for bugs, vulnerabilities, and code smells.

# What is SonarQube?

* SonarQube is a powerful tool for improving code quality in software development.
* SonarQube is an open-source platform developed by SonarSource for continuously inspecting code quality.
* It supports 30 major programming languages with various plugins.
* It acts as a code inspector, analyzing code to identify errors, bugs, issues, mistakes, duplication, and security vulnerabilities.
* SonarQube is developed using the Java programming language.
* Think of it as a digital assistant that helps programmers create reliable and secure software.