Write at least 300 words explaining what is a microservice.

A microservice is a type of information technology cloud native architecture that it is use to construct or develop an application as a collection of small services, each running in its own process and communicating with lightweight mechanisms, often an HTTP resource Application Programming Interface (API) in order to solve a larger complex business problem. There is a bare minimum of centralized management of these services, which may be written in different programming languages and use different data storage technologies.

This type of architectural system has the characteristic that it is highly maintainable and testable, loosely couple, independently deployed, organized around business capabilities, and owned by a small team. Additionally to this, microservices have the benefit that code can be update more easily, teams can use different stacks for different components, and each of this can be scale independently of one another, reducing the waste and cost associated with having to scale entire applications because a single feature might be facing too much load.

Usually, microservices are commonly compare against monolithic architecture and service-oriented architecture (SOA). Although they are compared, the differences between microservices and the other two types of architecture are quite large. For instance, the difference between microservices and monolithic architecture is that microservices compose a single application from many smaller, loosely coupled services as opposed to the monolithic approach of a large, tightly coupled application.

On the other hand, the difference between microservices and SOA is that the former is application-specific, while the latter is concern with the way all services talk to and integrate with each other.

It is important to state, however, that although microservices present some strength against monolith architecture, it is important to evaluate the situation in order to understand if microservices should be used or not. Although microservices provide benefits in terms of strong module boundaries, independent deployment, and technology diversity, they also come with some cost, namely: distribution systems are harder to program, maintaining strong consistency is extremely difficult, and it is needed a mature operations team to manage lots of services.