**MICROSERVICE ARCHIECTURE AND ITS IMPORTANCE**

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**INTRODUCTION:**

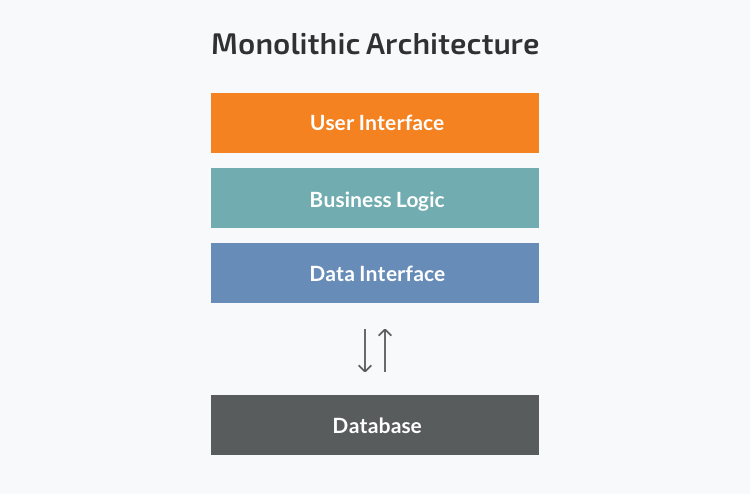
Microservices - also known as the microservice architecture - is an architectural style that structures an application as a collection of services that are

* Highly maintainable and testable
* Loosely coupled
* Independently deployable
* Organized around business capabilities
* Owned by a small team

## **BACKGROUND :**

In early age of computer the writing of code is difficult to scientist. In 1960 the “BASIC” was develop which is general purpose programming language which is much easier than previous language. So, the computer software development is increase rapidly and complexities too, the scientist want to outfit the complexity of software system. In 1972, the modularity concept is introduce which means decompose the huge software system into “Loosely couple and Highly cohesive”. In 1990, the layer architecture developed and the layer architecture consist of Presentation layer, Business layer, Persistence layer and Database layer. In late 2000 the rise of Internet and the companies like FACEBOOK, UBER, NETFILIX and TWITTER went with great innovated idea and want to capture the market and scientist realized that monolithic architecture is not use further anymore.

IMITIATION OF MONOLITHICAL ARCHITECTURE



Monolithic application has single code base with multiple modules. Modules are divided as either for business features or technical features. It has single build system which build entire application and/or dependency. It also has single executable or deployable binary.

Monolithical Architecture enjoys in development of web base companies but we need to use different programming language for different platform which are not give by the monolithical architecture because this architecture work’s on single programming language.

Now a day every companies want to upgrade their feature rapidly. Adding a new feature in monolithical architecture is a very huge challenge for the developer’s.

Companies hiring more developer for fast development but never thing about the monolithical architecture has tightly coupled. Due to hiring more developer we need to reduce the communication gap between them.

Lunch of new feature in monolithical architecture is very slow around 6 month to 2-3 year gap. Now companies need small release cycle to up to date there software time by time

Modularization in monolithic architecture are tightly couple instead of “Loosely Coupled and Highly Cohesive”. Which effect the Modernization in application and make expensive and time consuming to upgrade the application.

# MICROSERVICES ARCHITECTURE:

In late 2010, some new features come into markets like Cloud Computing, Containerization (Dockers, Kubernetes) and DevOps and likely some new highly use programming language also come to market.Some new software development architecture is introduce like Microservices architecture and the waterfall model is discard from market due the we make the whole application on waterfall and than test it take a huge time and if we need to upgrade in some feature this model fails to upgrade the feature and make the application from starts which is huge backlog for waterfall model.

In other hand microservices used the acient technique Divide and Conquer.Microservice can be deployed independently and monolithic must be deployed on whole application.

Definition :

“ Microservice Architecture is about decomposing a Software System into autonomous Units which are independently deployable and which communicates via lightweight, language agnostic way and together they fulfill the business goal. ”

ADVANTAGES OF MICROSERVICES:

* Microservices are often stateless which the horizontal scaling with in a seconds.
* Microservices are small in size and the add a new feature is quit easier and faster.
* Microservices divide the modules which make easier for new hiring developer can write productive code in days or week.
* In microservices architecture, the new feature come to market day by day which is quit better for company and client too.
* Microservice architecture has modularization feature which is help in modernization of application.

DISADVANTAGE OF MICROSERVICES:

* Due to distributed deployment, testing can become complicated and difficult.
* As the number developer is increase the communication barrier is also effective problem.
* If the distributive system the one system is not working successfully the whole application is not working.
* In microservice the security is low because different function works on different system which is difficult to manage the security of application
* When number of services increases, integration and managing whole products can become complicated