***Afzal Ahmed Assignment 1***

***IOT046458 Batch 2, Quarter 3***

***Class Time: 1:30 – 3:30***

**Microservices**

*Article written by Afzal Ahmed* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Microservices architecture is in reality a process of creating small, separate pieces of an application that are independent of each other. This property of microservices architecture is the foundation of the benefits it offers in comparison with traditional monolithic architecture. Monolithic software works as a single unit and developed in a single programming language using a single Tech Stack

**Microservices offer stability:**

Decomposition of the application into microservices reduces risk and offers stability over the long term. On the other hand, changes made to a monolithic application jeopardizes the whole system. Microservices have the advantage of isolating the services making them independent of each other which makes the whole system stable.

**Speeding up the release cycle:**

In corporate environment tech giants rely on rapid-fire technology change, microservices can enhancer application teams with greater speed and agility when it comes to development, deployment, and ongoing changes. Microservices enable companies to shorten the release cycle while monolithic architecture offers longer release cycles from months up to 2 or 3 years.

**Scalability:**

 Making the application into pieces or microservices increases the scalability of the application because you have the advantage of scaling the individual services.

The piece-like module or services are each individually scalable, which results in maximum use of computing resources.

**Flexibility:**

In microservices architecture you have the benefit or flexibility of employing a particular technology or any programming language for a specific application. This is unlike monolithic architecture where complete application is built with one language.

Co-existence of different languages, technologies, tiers etc. is the feature of microservices architecture.

**Team coordination:**

Another advantage of microservices is that it allows more than one teams to implement their changes independently. This gives many other plus points including technology flexibility and time for implementation.

Each microservice can be independently developed by different teams using the best tools and methodologies to build each module. This not only enhances agility but also reduces complexity in development and deployment of software applications.

**Disadvantages:**

Where there are many advantages, there are few disadvantages of microservices architecture also. For example, design complexity, in microservices architecture there are many solutions possible for each application, and if you don’t apply suitable solution than it becomes worse than monolithic architecture.

Microservices are distributed systems, which are operationally complex, means difficult to manage and troubleshoot. Security of hundreds of microservices in a large application is also another headache. Data sharing and communication complexities are problems also come with microservices architecture.