**Assignment 1**

Q1. What are Microservices?

* Microservices are approaches that are used to create small services each running for its own purpose.
* These are independent services and has their own database.
* Microservices make it easier to develop, test, and deploy isolated parts of the application.

Q2. Challenges with Monolithic oriented architecture.

* Monolithic oriented architecture is less reliable as changes made in one module will impact the entire application as all the modules in this architecture share a common database.
* Applications become too large and complex to completely understand.
* Redeployment of the whole application is required on every update.
* The changes made in the application is often not easily understood and hence the cost of testing increases.
* This architecture has also barrier to adopting new technologies as changes in frameworks or languages will affect the whole application resulting into increasing the loss of both cost and time.

Q3. Three advantages and disadvantages of Microservices.

* Advantages:

1. No need to rewrite the whole application again in case of adding any new features. Just add it as Microservice and plug them into the existing application.
2. As each microservices is concerned only with itself so easy understanding and maintaining the application is possible.
3. No need to redeploy the whole application on every update, deploying only the needed code will do.

* Disadvantages:

1. Though microservices are independent of each other but still they rely on each other for communicating and for this to make happen a communication channel needs to framed.
2. Different services will have their own logging mechanisms resulting GBs of distributed unstructured data.
3. Distributed logic with distributed data increases the effort of finding the root cause if something goes wrong in the entire application.