INTRODUCTION TO GCP DATABASE

- Database as a service (DBaaS) was first introduced by AWS, GCP introduced as DBaaS in 2015
- A Cloud Database, is a typical database which can run on top of the virtual platform in a managed way and access the database as Platform as a service
- DBaaS can run without requiring the setup of physical hardware, the installation of software or the need to configure the database
- DBaaS offers multiple benefits like Developer Agility, IT Productivity, Application Reliability & Performance, Application Security and so on
- Few databases on GCP
  - Cloud SQL
  - Cloud Bigtable
  - Cloud Spanner
  - Cloud Memory store
  - FireBase

GOOGLE CLOUD SQL

- Cloud SQL is a fully-managed relational database service on the Google Cloud Platform
- Cloud SQL offers features like automated backups, data replication, and disaster recovery to ensure high availability and flexibility
- Facilitates horizontal and vertical scaling
- Integrate with Compute Engine, App Engine, BigQuery, and Kubernetes, also with external applications
- Cloud SQL supports three types of RDBMS
  - MySQL
  - PostgreSQL
  - MSSQL

GOOGLE CLOUD BIGTABLE

- It is a fully managed **NoSQL** Google Cloud database service that is designed for large operational workloads
- Cloud Bigtable acts as a storage engine which grows GB to PB scale for low latency applications as well as high throughput data processing and analytics
- Cloud Bigtable includes features for
  - high availability
  - high throughput
  - zero-downtime configuration changes
- Cloud Bigtable can easily be integrated with Big Data tools like Hadoop, dataflow, dataproc etc
- It is the same database powering many Google services, like Search, Analytics, Maps, and Gmail