**Components of System Design**

Components of a system can be divided as:

* Logical Entities
* Tangible Entities

**Logical Entities**

All the systems are built up on **data**. So to store the data we use database.

**Database** is a technology that is used to store data so it can be used by users for processing.

User needs to interact with data in the database. The applications that we build act as a logical entity which provides access to users for interacting with data in database.

For an application to interact with database, we need another logical entity known as **Communication Protocols** (ex: TCP/HTTP/IP, etc.) by which components of the system can interact with each other.

Similarly, applications or services communicate with each other at software level via **Requests** like API/ RPCs, etc.

There are several systems which need a **presentation layer** like websites, mobile apps, etc. But there are certain system that **may not** need any presentation layer example, Logging System whose sole purpose is just to collect the logs.

All these components run on some computer or **instances** that maybe provided by **Cloud** Provided. So these instances come under Infrastructure requirements which are provided by Cloud Providers like AWS, GCP, Azure.

**Tangible Entities**

For each logical entity we have multiple options:

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| **Logical Entity** | **Tangible Entities** |
| Data | Text, Images, Videos, etc. |
| Database | MongoDB, MySql, PosgreSql, etc. |
| Applications | Java, .NET, Golang, Python, React, etc. |
| Cache | Memcache, Redis, etc. |
| Message Queues | Kafka, Rabbit MQ, etc. |
| Infrastructure | AWS, GCP, Azure |
| Communication | APIs, RPCs, Messages |