1. Given an entity named **Television,** identify its attributes, and explain how will you do Abstraction?

Attributes:

1. Screen
2. Body
3. Processor
4. IO ports
5. Connectivity modules (Wi-Fi, Bluetooth)
6. Remote system
7. Speaker
8. Memory unit
9. Ram

Here, some of the attributes I have listed of which processors, connectivity modules, speaker, memory unit and ram are the internals and complex implementations. They are hidden, only necessary attributes like screen, body, IO ports, remote system are exposed to external environment.

1. Given an entity named **Hospital,** explain Encapsulation with respect to it.

Encapsulation is a process of building of properties and behaviours

In Hospitals we have following attributes

1. Patients
2. Doctors
3. Nurses
4. Workers
5. Medical
6. ICU
7. Ambulance services

Here patients come from home in ambulance, then kept in ICU after that doctor will treat him and advice to take some medicines. So, there are so many systems encapsulated together through which patient must go.

1. Given an entity named **Traffic Signal,** explain Polymorphism with respect to it

Polymorphism means the condition of occurring in several different forms

Here, Traffic signal guides the public on road and helps in preventing accidents.

Like traffic signal we have Different systems listed below:

1. Sign boards in CitiusTech office: They guide employees to cafeteria, cabins, ways in cubicle, fire exit, restricted area, server room
2. Led Lights on Electronic devices: They notify end user when Battey is low, performance mode, fully charged, incoming call.

Above listed examples work similar to traffic signal i.e. they are in another form.

1. Given an entity named **BroadBandConnection,** explain inheritance with respect to it.

Inheritance is where a class reuses the implementation of another class or specifies new implementation.

Broadband system has its properties like high-speed data, downloading facility mac codes, data server

These properties are transferred to the different systems or we can say child systems like router, smartphones, tv connection through wired or wireless medium.

1. Given an entity named **MobilePhone,** identify its static & dynamic attributes

Static attributes:

1. Battery
2. Camera
3. Cell phone body
4. Usb cable
5. Sim tray
6. Screen protection

Dynamic attributes:

1. Display
2. Processor
3. Memory
4. Sim module
5. Cooling system
6. Wifi modem