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

The attributes of Television are listed below:

1. Television transmitters /\* that sends the signals through air \*/
2. Television receivers /\* that capture the signals and turns it back into picture and sound \*/
3. Television camera /\* that turns a picture and sound into a signal \*/
4. Remote control /\* sending out infrared waves that are picked up by the television \*/
5. Displaying units
6. Sound units
7. Sensors /\* To receive signals from Remote control \*/

These attributes of television is required to function the working of television. So the user need not to be seen these functioning part of television because manufacturer of that television knew it wasn’t important for user to know , that where the manufacturer or programmer can apply the concept of Abstraction , Where Abstraction is the process of just displaying to the user the necessary or relevant features while masking the background operation of a task. This way, things are easy for the user. Here we can use abstraction process to hide the signals conversion to black & white to display colour image as output , working of transmission and receiving the signals part and in process of changing the channels and working of changing the threshold of volume and control payback speed and so and so and so forth.

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

In Hospital, we havePatient, Doctors, Nurses, Appointments, Medicines, ambulance so and so and so forth as sub-entities of Hospital these sub-entities form the entire one organization or entity as functioning hospital.

Here we can apply the concept of encapsulation, where it aprocess of wrapping code and data together into a single unit. Where hospital as a single unit can wrap it’s sub-entities as a whole. where it can provide us as programmer the control over the data also by this process we can achieve data hiding ,which is again patient report are confidentially in order to secure the data we use this features , the also make tester easy to test the code.

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

In Traffic Signal , there are difference type of signals which are:

1.Red

2.Orange

3.Green

Here we apply concept of Polymorphism, where it is the ability of an object to take on different forms, we can create “signal” as the object then create difference type of signals in Red, Orange and Green . hence got the ability of a message to be displayed in more than one form. Which make to function Traffic Signals in one form or other.

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

In Broad Band Connections, they got main server unit or centre (service provider) and consumer (user).

Here we can apply the usage of inheritance, which is the procedure in which one class inherits the attributes and methods of another class. The class whose properties and methods are inherited is known as the Parent class and the class that inherits the properties from the parents class is the child class. So this main Server unit or centre which is also service provider act as parent class and consumer /user can acts as child class,also child class can have access only if parent class permit to use, that’s how Broad Band connection facilities works in real life between user or provider.

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

Static attributes are

* 1. Camera
  2. Sim tray
  3. Battery
  4. Chargering cable
  5. Screen protector
  6. Mobile’s body.
  7. Hearphone jack
  8. Microphone

Dyamic attributes:

* + 1. Memory
    2. Wifi unit
    3. Processor
    4. Sim module
    5. GPS unit
    6. Display
    7. Bluetooth module