**Database Design**

**Telecommunication Database Management System**

**Abstract :**

Creating and maintaining a centralized database which would be used to store a huge amount of data across service providers and would store Customer data and the services they have subscribed to. The analysis of this data would help user with a consolidated view of bills for these services and would provide a better insight of the expenditure for these services for previous months.

**Entities:**

Our project deals with generating bills for all the telecommunication services used by the customer. We have identified the following entity types. An identifier is also suggested for each entity, together with selected important attributes:

* **CUSTOMER**

Customer is the general representation for all the telecommunication users. Customer\_ID

Is the primary key for this entity and it contains CustomerName. It also contains additional information such as PhoneNumber, Email, Address , DateOfBirth.

* **REGISTRATIONINFO**

RegistrationInfo stores the relation between Customer and ServiceProvider . Registration\_ID is the primary key for this entity and it contain foreign keys such as Customer\_ID and SP\_ID which are the primary keys in the Customer and ServiceProvider entities respectively. It also has other registration details such as Registration\_Date.

* **SERVICE\_PROVIDER**

Service\_Provider is the general representation for all the provider providing different types of telecommunication services . SP\_ID is the primary key and it also has other information about the ServiceProvider such as SP\_Name and also the service type information such as Has\_Wifi, Has\_TV, Has\_Mobile . ContactNo of the service provider is also included.

* **PLAN**

Plan gives details of various telecommunication plans provided by the ServiceProvider.

Plan\_ID is the primary key of a plan. It also includes details of the plan which would be required to bill the customer as per his selected plan. The details included in plan are PlanType, PlanPrice, Cycle, PlanName, PlanDesc. Also plan includes the foreign key SP\_ID to link the plan with its ServiceProvider.

* **ASSET**

Asset is supplied ServiceProvider. Asset contains primary key Asset\_ID and also other details about the asset such as AssetName, AssetDesc, AssetModel, AssetSerial, AssetPrice. All the details are not null except AssetDesc as it can be null.

* **ORDER**

Order contains details about the Service provider and also asset such that which service provider is supplying a particular asset. Primary key of Order is UniqueID and it also contains ServiceProviderID and AssetID and Price.

* **CUST\_ORDER\_MAPPING**

Cust\_Order\_Mapping maps the customer with the order entity which provides the asset details ordered by a customer of the products assets provided by the ServiceProvider. OrderID is the primary key CustomerOrderMapping also contains other details such as OrderDesc and OrderDate and OrderAmount and also it contain foreign keys such as CustomerID from the customer entity and UniqueID from the Order entity.

* **WIFI**

Wifi contains the wifi plan details considering ExtraCharges as per speed, usage. WPlanID is the Primary key of wifi entity and it includes other Wifi plan related information such as Usage, Speed, ExtraCharges.

* **TV**

TV contains the TV plan details . TPlanID is the primary key of the TV entity and other information in TV includes PlanName, TV\_Services.

* **MOBILE**

Mobile includes the mobile plan details which would assist in billing the customers as per the telecommunication plan they are using. MPlanID is the primary key and other details included are DataSpeed, Calling and SMS.

* **CUSTOMER\_PLAN**

Customer\_Plan includes the details which would assist to generate the billing information for a particular customer depending on the plan the customer selects and also it provides the start and end date of the the customer plan. CustomerPlanID is the primary key and it also includes StartDate, EndDate, and Duration. It also includes Foreign keys such as CustomerID and PlanID.

* **BILLING\_INFO**

Billing\_Info has all the specific billing information for a customer as per the plan selected.

TransactionID is the primary key . Foreign key is CustomerPlanID and OrderID. BillingInfo also has details such as Duration, Month, TotalAmount, YearlyEstimate which would help in the bill generation for a particular customer as per his telecommunication plan.

**Entity Relationship Diagram**

