**Assignment-4 : Dataware house-1**

[**https://drive.google.com/file/d/1qDFtfq0ox7HN7JSrGxfCghlmuo6kzUjm/view**](https://drive.google.com/file/d/1qDFtfq0ox7HN7JSrGxfCghlmuo6kzUjm/view)

1. **Data Warehouse for IPL Cricket Tournament:**

* Fact Table: Match Fact (match\_id, team1\_id, team2\_id, winner\_team\_id, venue\_id, match\_date, match\_type, result, total\_runs, total\_wickets, total\_overs, player\_of\_the\_match)
* Dimension Tables:
  + Team Dimension (team\_id, team\_name, home\_city, team\_captain, coach\_name)
  + Venue Dimension (venue\_id, venue\_name, city, capacity)
  + Player Dimension (player\_id, player\_name, team\_id, role, batting\_hand, bowling\_skill)
  + Date Dimension (date\_id, match\_date, year, month, day)
* Primary Keys: match\_id for Match Fact table, team\_id for Team Dimension table, venue\_id for Venue Dimension table, player\_id for Player Dimension table, date\_id for Date Dimension table
* Foreign Keys:
  + Match Fact table references Team Dimension table (team1\_id, team2\_id, winner\_team\_id), Venue Dimension table (venue\_id), and Date Dimension table (match\_date)
  + Player Dimension table references Team Dimension table (team\_id)
* Star Schema Design

SQL queries for insightful business metrics:

* Top 10 players with most runs in a season
* Total number of matches played by each team in a season
* Number of matches won by a particular team against each opponent
* Average attendance per match for each venue
* Average number of wickets taken per match in a season

1. **Data Warehouse for Food delivery app like Swiggy, Zomato:**

* Fact Table: Order Fact (order\_id, customer\_id, restaurant\_id, delivery\_partner\_id, order\_date, order\_time, total\_amount, payment\_method, delivery\_address\_id)
* Dimension Tables:
  + Customer Dimension (customer\_id, customer\_name, phone\_number, email, city)
  + Restaurant Dimension (restaurant\_id, restaurant\_name, cuisine\_type, city)
  + Delivery Partner Dimension (delivery\_partner\_id, partner\_name, vehicle\_type)
  + Date Dimension (date\_id, order\_date, year, month, day)
  + Time Dimension (time\_id, order\_time, hour, minute, second)
  + Delivery Address Dimension (delivery\_address\_id, address, city, state, pincode)
* Primary Keys: order\_id for Order Fact table, customer\_id for Customer Dimension table, restaurant\_id for Restaurant Dimension table, delivery\_partner\_id for Delivery Partner Dimension table, date\_id for Date Dimension table, time\_id for Time Dimension table, delivery\_address\_id for Delivery Address Dimension table
* Foreign Keys:
  + Order Fact table references Customer Dimension table (customer\_id), Restaurant Dimension table (restaurant\_id), Delivery Partner Dimension table (delivery\_partner\_id), Date Dimension table (order\_date), Time Dimension table (order\_time), and Delivery Address Dimension table (delivery\_address\_id)
* Star Schema Design

SQL queries for insightful business metrics:

* Average order value by payment method
* Top 10 most ordered dishes across all restaurants
* Average time taken to deliver an order for each delivery partner
* Number of orders placed by customers in a particular city
* Total revenue generated by each restaurant in a particular city

1. **Data Warehouse for cab ride service like Uber, Lyft:**

* Fact Table: Ride Fact (ride\_id, rider\_id, driver\_id, pick\_up\_location\_id, drop\_location\_id, ride\_date, ride\_time, fare\_amount, ride\_distance, ride\_duration)
* Dimension Tables:
  + Rider Dimension (rider\_id, rider\_name, phone\_number, email, city)
  + Driver Dimension (driver\_id, driver\_name, phone\_number, email, city)
  + Location Dimension (location\_id, location\_name, city)
  + Date Dimension (date\_id, ride\_date
* Primary Keys: ride\_id for Ride Fact table, rider\_id for Rider Dimension table, driver\_id for Driver Dimension table, pick\_up\_location\_id and drop\_location\_id for Location Dimension table, date\_id for Date Dimension table, time\_id for Time Dimension table
* Foreign Keys:
  + Ride Fact table references Rider Dimension table (rider\_id), Driver Dimension table (driver\_id), Location Dimension table (pick\_up\_location\_id and drop\_location\_id), Date Dimension table (ride\_date), and Time Dimension table (ride\_time)
* Star Schema Design

SQL queries for insightful business metrics:

* Total number of rides completed by each driver
* Number of rides completed by each driver in a particular city
* Average fare per mile for each driver
* Average waiting time for a ride pickup at each location
* Total revenue generated by each rider in a particular city

1. **Data Warehouse for Restaurant table booking app like Dineout:**

* Fact Table: Booking Fact (booking\_id, restaurant\_id, customer\_id, booking\_date, booking\_time, number\_of\_guests, booking\_status)
* Dimension Tables:
  + Customer Dimension (customer\_id, customer\_name, phone\_number, email, city)
  + Restaurant Dimension (restaurant\_id, restaurant\_name, cuisine\_type, city)
  + Date Dimension (date\_id, booking\_date, year, month, day)
  + Time Dimension (time\_id, booking\_time, hour, minute, second)
* Primary Keys: booking\_id for Booking Fact table, restaurant\_id for Restaurant Dimension table, customer\_id for Customer Dimension table, date\_id for Date Dimension table, time\_id for Time Dimension table
* Foreign Keys:
  + Booking Fact table references Restaurant Dimension table (restaurant\_id), Customer Dimension table (customer\_id), Date Dimension table (booking\_date), and Time Dimension table (booking\_time)
* Star Schema Design

SQL queries for insightful business metrics:

* Number of bookings made by each customer in a particular city
* Percentage of bookings cancelled by customers
* Top 10 restaurants with the most number of bookings
* Average number of guests per booking for each restaurant
* Total revenue generated by each restaurant in a particular city

1. **Data Warehouse for Covid Vaccination Application:**

* Fact Table: Vaccination Fact (vaccination\_id, patient\_id, vaccine\_type, vaccination\_date, vaccination\_time, dose\_number)
* Dimension Tables:
  + Patient Dimension (patient\_id, patient\_name, phone\_number, email, city, age, gender)
  + Vaccine Dimension (vaccine\_type, manufacturer, dosage)
  + Date Dimension (date\_id, vaccination\_date, year, month, day)
  + Time Dimension (time\_id, vaccination\_time, hour, minute, second)
* Primary Keys: vaccination\_id for Vaccination Fact table, patient\_id for Patient Dimension table, vaccine\_type for Vaccine Dimension table, date\_id for Date Dimension table, time\_id for Time Dimension table
* Foreign Keys:
  + Vaccination Fact table references Patient Dimension table (patient\_id), Vaccine Dimension table (vaccine\_type), Date Dimension table (vaccination\_date), and Time Dimension table (vaccination\_time)
* Star Schema Design

SQL queries for insightful business metrics:

* Number of patients vaccinated in a particular city
* Top 5 most popular vaccine manufacturers
* Percentage of patients who received the first dose but not the second dose
* Total number of doses administered in a particular city
* Average age of patients who received a vaccine dose

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