**Workshop 7**

### Topic:

Data Warehouse & Data Mining

1. **Data Warehouse Model/Scripts for Summary Views:**

The data warehouse for the travel agency can be designed using a star schema, with fact tables such as Booking, Customer, Payment, and Destination, and dimension tables such as Time, Travel Package, and Traveler Information. The schema can be implemented using SQL scripts and can be optimized for reporting and analysis purposes.

1. **Metadata:**

Metadata can be established to provide information about the data warehouse schema, tables, columns, and relationships. It can also include information about data sources, data transformations, and business rules applied during the ETL process. Metadata can be documented using a metadata repository or a data dictionary.

1. **Sample Reports:**

Some sample reports that can be generated from the data warehouse to support marketing decision making are:

* Revenue analysis by destination, travel package, and time
* Customer segmentation based on demographics and travel behavior
* Sales performance by agent, region, and product
* Top-selling products and destinations
* Market share analysis by competitor and region

1. **Marketing-Related Questions:**

Data mining activities can help answer several marketing-related questions such as:

Which destinations and travel packages are popular among customers?

What factors influence customer buying behavior?

What are the trends in customer preferences and behaviors over time?

How does the agency's marketing and sales efforts affect customer acquisition and retention?

How can the agency improve customer experience and loyalty?

1. **Recommendations for Future Data Collection:**

To enhance the data warehouse and support better decision-making, the travel agency should consider collecting additional data such as:

* Customer feedback and ratings on travel packages and destinations
* Social media data to understand customer sentiment and engagement
* Web analytics data to analyze customer behavior on the agency's website
* Competitive intelligence data to monitor industry trends and benchmark against competitors
* Customer service data to measure satisfaction levels and identify areas for improvement.