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COMP810 – Data Warehousing and Big Data

Lab Exercise - Week 8

Data Warehouse Exercise

Task 1

A consortium of banks wants to develop a data warehouse for effective decision-making about their loan schemes. The banks provide loans to customers for various purposes, like, House Building Loan, Car Loan, Educational Loan, Personal Loan, etc. The whole country is categorized into a number of regions, namely, North, South, East and West. Each region consists of a set of states. Loan is disbursed to customers at interest rates that change from time to time. Also, at any given point of time, the different types of loans have different rates. The data warehouse should record an entry for each disbursement of loan to customer.

With respect to the above business scenario, answer the following questions. Clearly state any reasonable assumptions you make.

Design a star schema (in Microsoft Visio) for the data warehouse that clearly identifies the fact table(s), dimensional table(s), their attributes and measures along with the primary key and foreign key relationships. Also transform this designed star schema into ORACLE by creating all dimension and fact tables.

Task 2

Real estate agency

Let us consider the case of a real estate agency whose database is composed by the following tables:

OWNER (IDOwner, Name, Surname, Address, City, Phone)

ESTATE (IDEstate, IDOwner, Category, Area, City, Province, Rooms, Bedrooms, Garage, Meters)

CUSTOMER (IDCust, Name, Surname, Budget, Address, City, Phone)

AGENT (IDAgent, Name, Surname, Office, Address, City, Phone)

AGENDA (IDAgent, Data, Hour, IDEstate, ClientName)

VISIT (IDEstate, IDAgent, IDCust, Date, Duration)

SALE (IDEstate, IDAgent, IDCust, Date, AgreedPrice, Status)

RENT (IDEstate, IDAgent, IDCust, Date, Price, Status, Time)

Questions:

1. What facts and dimensions do you consider in above database tables?

2. Design a Star Schema (in Microsoft Visio) for the data warehouse based on facts and dimensions you considered in question 1. Also transform this designed star schema into ORACLE by creating all dimension and fact tables.