

GUJARAT TECHNOLOGICAL UNIVERSITY

Master of Computer Applications (Integrated) Year IV – (Semester-VII) (w.e.f. July 2016) Indicative Practical List

Subject Name: Data Warehousing

Subject Code: 4470622

Q.1	Create Dimension tables as follows : PRODUCT(Product key, Product name, subcategory, category, product line, department) STORE(store key, store name, territory, region) TIME(time key, day, month, quarter, year) Note: Product line can be group of related product manufactured by single company. E.g. Makeup product line includes eye shadow, lipsticks, eyeliner, blush, powder etc. Create Fact table as follow: SALESFACT(Product key, Time key, Store key, fixed cost, variable cost, indirect sales, direct sales, profit margin) Write Data Warehouse SQL query: - Display total sales of all products for past five years in all stores. - List total sales for all stores, products by products between years 2015 and 2010. - List total sales for all stores, products by products between years 2015 and 2000 only for those products with reduced sales. - List total sales for “Alpha store” between years 2014 and 2015 for all products. - Show indirect sales for all stores of last two years of Indian Territory. - List profit margin for “Lakme” store for Indian Territory with region wise for previous month. - Show total sales across all products at increasing level of geography dimension from territory to region for year 2014 and 2015. - List top 10 stores name in Asia for automobile product last year whose profit margin is high. - Count total number of stores available in North region of Asia territory. - Count total number of stores and total sales for east region for Indian Territory in descending order. - List product category along with subcategory for “Beta” store between years 2015 to 2010 region wise and territory wise. - Give product category by store by date - List all products store wise and date wise in descending order. - Give total product category for last two months for “Beta” store. - List count of all stores quarter wise and product wise. - List department of product for year 2015 for Asia territory in north region. - List all products along with its sub category for all stores in 2012 year. - Show direct sales and indirect sales month wise, region wise. - Show lowest margin sales for each month for all stores, product wise. - Give year wise total sales of each product line.
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Q.2	Create Dimension tables as follows : PRODUCT(Product key, Product name, product code, product line , brand) CUSTOMER(customer key, customer name, customer code, gender, address, state, zip) TIME(time key, day, week number, month, quarter, year) SALESPERSON(salesperson key, salesperson name, gender, territory name, region name) Note: gender can be “ male” or “female”. Create Fact table as follow: ORDERFACT(Product key, Time key, customer key, salesperson key, sales order cost, actual cost, margin cost, sales unit) Write Data Warehouse SQL query: - Give total sales for customer number “12” during first week of December 2015 for product Widget-1. - Give total sales for customer number “20” during first three weeks of 2015 for product Widget-2. - Give total sales for all customers in south region for first two quarters for year 2013 for product category “Automobile” - List all customers who order product “Widget-1” of “Jockey” brand last month. - Count all female customers whose sales unit is maximum. - Show last two weeks details of salesperson that has maximum profit margin. - List all male customers statewise for year 2014 and 2015. - Which customer made order for at least five products with different product line ? - Which customer made largest order for year 2015? - Show total number of products sold per product line for all brands. - Give weekly sales for year 2015.
Q.3	Create Dimension tables as follows : COURSE(course key, course name, department) SEMESTER(semester key, semester name, year) STUDENT(student key, student name, area key, major, status, university) INSTRUCTOR(instructor key, department, instructor name) AREA (area key, city, state, country) Note: major student is ‘yes’ or ‘no’ Status of student can be part time student or full time student. Create Fact table as follow: UNIV(student key, course key, semester key, instructor key, count, average grade) Write Data Warehouse SQL query: - List average grade of computer science course for GU university students. - List department wise course key. - Count total number of students for MBA course university wise, city wise. - Show average grade of students for MCA course last year. - Give top 5 average grade students who study Information Technology course for all university in Gujarat state of India. - Count total number of students for all university, course wise, area wise, state wise. - Give average grade of students for all courses between year 2014 and 2015. - Give instructor name that is in IT department for more than five years.
Q.4	Create Dimension tables as follows : DOCTOR(doctor key, doctor name, city, phone number, gender, experience years, expertise) PATIENT(patient key, patient name, phone number, gender, treatment, address, age) TIME(time key, day, month, quarter, year)

	Note: gender can be “male” or “female” only. Create Fact table as follow: CLINIC (doctor key, patient key, time key, charge, count) Write Data Warehouse SQL query: - Count total number of patient who appoint for “Monday” , “June -2016”. - Show charge of doctor on each day, each month, year wise. - List all doctors who take low charge for “Diabetic” treatment. - List citywise doctors, who has highest experienced for all treatments. - List all female doctors who have “cancer” expertise for year 2015 to 2010. - Count total number of doctors’ monthwise, quarter wise and yearwise. - List average charge the doctor takes on “Sunday” to treat children of below 10 years.
Q.5	Create Dimension tables as follows : CUSTOMER(customer key, customer name, age, gender, city, region, state) FURNITURE(furniture key, furniture type, category, material) TIME(time key, day, month, quarter, year) Note: Furniture type can be chair, table, cabinet etc.. Furniture category can be kitchen, living room, office room, etc. Furniture material can be wood, marble, glass, lime, plastic, steel, etc.,. Create Fact table as follow: SALES(customer key, furniture key, time key, quantity, discount, income) Write Data Warehouse SQL query: - Find discount for each furniture type for month “July” and year 2016. - Show average income of sales for “kitchen” material category last year. - Find average income and discount for each city monthwise and year wise. - Determine top 5 most sold material during the month of “November”. - Count total quantity sold for year between 2015 and 2010. - List name of customer with its gender who order steel material for his office room last quarter. - Count total number of customers who got maximum discount last month for all furniture type.

Reference text book:

- “Data Warehousing Fundamentals”, a comprehensive guide for IT professionals by Paulraj Ponniah, Wiley India Edition.
- <https://docs.oracle.com/database/121/DWHSG/E41670-08.pdf>
- Jiawei Han, Micheline Kamber, Jain Pei, “Data Mining: Concepts and Techniques”, Elsevier, 3rd Edition, 2011