RDBMS-Hands On

Assignment 1

Create the tables necessary and solve the following set of queries according to given schema:

Write the SQL commands to create a database schema for the following relational schema:

## CUSTOMER (CUST\_ID, CUST\_NAME, ANNUAL\_REVENUE, CUST\_TYPE)

CUST\_ID must be between 100 and 10,000 ANNUAL\_REVENUE defaults to $20,000

CUST\_TYPE must be manufacturer, wholesaler, or retailer

## Data for CUSTOMER table

|  |  |  |  |
| --- | --- | --- | --- |
| **CUST\_ID** | **CUST\_NAME** | **ANNUAL\_REVENUE** | **CUST\_TYPE** |
| 100 | Revathi | 1000000 | manufacturer |
| 101 | Richa | 1800000 | wholesaler |
| 102 | Rishi | 1000000 | retailer |
| 103 | Rijesh | 4000000 | wholesaler |
| 104 | Kalyan | 4800000 | Wholesaler |
| 311 | Karthik | 5500000 | retailer |

**SHIPMENT (SHIPMENT\_#, CUST\_ID, WEIGHT, TRUCK\_#, DESTINATION, SHIP\_DATE**)

Foreign Key: CUST\_ID REFERENCES CUSTOMER, on deletion cascade Foreign Key: TRUCK\_# REFERENCES TRUCK, on deletion set to null Foreign Key: DESTINATION REFERENCES CITY, on deletion set to null WEIGHT must be under 1000 and defaults to 10

## Data for SHIPMENT table

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SHIPMENT\_#** | **CUST\_ID** | **WEIGHT** | **TRUCK\_#** | **DESTINATION** | **SHIP\_DATE** |
| 100 | 100 | 500 | 100 | London | Null |
| 101 | 101 | 100 | 102 | Paris | Null |
| 102 | 101 | 300 | 103 | London | Null |
| 103 | 101 | 10 | 102 | Panama City | 12-Dec-03 |
| 104 | 101 | 20 | 101 | Los Angeles | Null |
| 105 | 102 | 200 | 102 | Rome | Null |
| 106 | 100 | 50 | 101 | Sioux City | 18-Sep-03 |
| 107 | 104 | 500 | 100 | Manhattan | Null |
| 108 | 103 | 50 | 103 | San Francisco | Null |
| 109 | 104 | 25 | 101 | San Francisco | Null |
| 110 | 102 | 200 | 103 | London | 11-Oct-98 |
| 111 | 103 | 100 | 101 | London | 09-Sep-99 |
| 112 | 104 | 500 | 100 | London | 18-Jun-88 |
| 113 | 104 | 200 | 100 | London | 11-Oct-98 |
| 114 | 104 | 50 | 103 | Manhattan | 29-May-03 |
| 115 | 100 | 75 | 103 | Los Angeles | 17-Sep-02 |
| 116 | 101 | 55 | 102 | Baltimore | 01ul-02 |
| 117 | 103 | 45 | 101 | Paris | Null |
| 118 | 103 | 45 | 100 | Rome | Null |
| 119 | 103 | 45 | 102 | Los Angeles | Null |
| 120 | 104 | 45 | 102 | London | Null |
| 121 | 100 | 150 | 102 | Sioux City | Null |
| 122 | 101 | 500 | 102 | Manhattan | Null |
| 123 | 102 | 250 | 102 | San Francisco | 31-Jul-02 |
| 124 | 311 | 0.5 | 102 | Denver | Null |
| 125 | 311 | 100 | 102 | St. Louis | Null |

**TRUCK (TRUCK\_#, DRIVER\_NAME)**

**Data for TRUCK table**

|  |  |
| --- | --- |
| **TRUCK\_#** | **DRIVER\_NAME** |
| 100 | Jensen |
| 101 | Sasi |
| 102 | Hrithik |
| 103 | Jake Stinson |

**CITY (CITY\_NAME, POPULATION)**

**Data for CITY table**

|  |  |
| --- | --- |
| **CITY\_NAME** | **POPULATION** |
| London | 100000000 |
| Paris | 120000000 |
| Rome | 200000000 |
| Panama City | 1230000000 |
| San Francisco | 20000000 |
| Sioux City | 5000000000 |
| Manhattan | 10000000 |
| Los Angeles | 7000 |
| Baltimore | 2000 |
| Denver | 1000 |
| St. Louis | 5000 |

Perform the following queries:

* 1. What are the names of customers who have sent packages (shipments) to Sioux City? -100 –Revathi
  2. To what destinations have companies with revenue less than $1 million sent packages?

Should return 0 rows.

* 1. What are the names and populations of cities that have received shipments weighing over 100 pounds? Join shipment and city table
  2. Who are the customers having over $5 million in annual revenue who have sent shipments weighing less than 1 pound? Join customer and shipment table
  3. Who are the customers having over $5 million in annual revenue who have sent shipments weighing less than 1 pound or have sent a shipment to San Francisco?
  4. Who are the drivers who have delivered shipments for customers with annual revenue over $20 million to cities with populations over 1 million?
  5. List the cities that have received shipments from customers having over $15 million in annual revenue.
  6. List the names of drivers who have delivered shipments weighing over 100 pounds.
  7. List the name and annual revenue of customers who have sent shipments weighing over 100 pounds.
  8. List the name and annual revenue of customers whose shipments have been delivered by truck driver Jensen.
  9. List customers who had shipments delivered by every truck. (use NOT Exists)
  10. List cities that have received shipments from every customer. (use NOT Exists)
  11. List drivers who have delivered shipments to every city. (use NOT Exists)
  12. Customers who are manufacturers or have sent a package to St. Louis.
  13. Cities of population over 1 million which have received a 100-pound package from customer 311.
  14. Trucks driven by Jake Stinson which have never delivered a shipment to Denver.
  15. Customers with annual revenue over $10 million which have sent packages under 1 pound to cities with population less than 10,000.
  16. Create views for each of the following:
      1. Customers with annual revenue under $1 million.
      2. Customers with annual revenue between $1 million and $5 million.
      3. Customers with annual revenue over $5 million.
  17. Use these views to answer the following queries:
      1. Which drivers have taken shipments to Los Angeles for customers with revenue over $5 million?
      2. What are the populations of cities which have received shipments from customers with revenue between $1 million and $5 million?
      3. Which drivers have taken shipments to cities for customers with revenue under

$1 million, and what are the populations of those cities?

Assignment 2

Create a schema for Employee Leave Management System. Below are the assumptions

Employee can avail below number of leaves excluding the Holiday List per year

5 Sick Leave

5 Personal Leave

10 Vacation Leave

2 Flexi Holidays

Employee cannot apply leave on days which are on the Holiday list of the year or Weekends (Saturday and Sunday)

Holiday list for the year will have 8 common holidays and 2 flexi holidays for everyone. Employee cannot apply more than 2 flexi holidays.

When employee applies for a leave request, it should be approved by his/her Manager. Once approved by manager, applicable number of leaves should be deducted from respective Leave balances.

Employee’s Leave balances should be encahsed on the basis of their Pay/Day.

We should be able to perform the below queries

1. Who is the employee who has the max leave balance for the year?
2. List the Available leave balances for a given employee.
3. Employee who has not availed any leave.
4. List the department of employees in descending order of their cumulative leave balances.
5. List the employees who have taken leaves during the Month of December.
6. List the Months along with the cumulative number of leaves applied in descending order of leaves applied by employees of a specific department.

Write a procedure to find out the encashment eligible for an employee based on their Pay/Day.