S. D. M. COLLEGE OF ENGINEERING AND TECHNOLOGY

Department of Computer Science and Engineering

Academic Year: 2018-19

Class: 5th Semester — CIE Marks: 50

Course Title: Database Management Systems Laboratory — Course Code: 15UCSL506

Course Instructors: Prof. Anand D. Vaidya, Prof. Prathap Kumar MK — Hours/week: 3 Hrs

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Pre-Exercise

Telephone directory maintenance system (Ref: Infosys Campus Connect PF module)

Deadline: 23rd Aug 2018

1. Draw ER Diagram and convert same to relation Model.
2. Consider the Insurance database given below.

PERSON (driver – id #: String, name: string, address: string)

CAR (regno: string, model: string, year: int)

ACCIDENT (report-number: int, accd-date: date, location: string)

OWNS (driver-id #:string, Regno:string)

PARTICIPATED (driver-id: string, Regno:string, report-number:int, damage amount:int)

(i) Create the above tables by properly specifying the primary keys and the foreign keys.

(ii) Enter at least five tuples for each relation.

(iii) Demonstrate how you

a. Update the damage amount to 25000 for the car with a specific Regno in the ACCIDENT table with report number 12.

b. Add a new accident to the database.

(iv) Find the total number of people who owned cars that were involved in accidents in 2008.

(v) Find the number of accidents in which cars belonging to a specific model were involved.

vi) Find number of cars involved in each accident.

vii) Find total damage amount of each accident.

viii) List the report no ,which has max damage amount.

ix) list the car regno, which has maximum damage amount in a specific accident.

x) List the number of times each time every driver has met with an accident.

xi) List the cars that have not met with accident.

xii) List the number of times the same combination driver_id and car reg_no has met with accidents.

xiii) List day-wise number of accidents in the year 2012.

xiv) List the number of times the car has met with accidents along with total damage amount and average damage amount.

xv) List the driver name and address who have met with accident who are not the owners of the car.

3. Consider the following relations for an order processing database application in a company:

CUSTOMER (cust #: int , cname: string, city: string)

ORDER (order #: int, odate: date, cust #: int, ord-Amt: int)

ORDER – ITEM (order #: int, item #: int, qty: int)

ITEM (item # : int, unit price: int)

SHIPMENT (order #: int, warehouse#: int, ship-date: date)

WAREHOUSE (warehouse #: int, city: string)

(i) Create the above tables by properly specifying the primary keys and the foreign keys.

(ii) Enter at least five tuples for each relation.

(iii) Produce a listing: CUSTNAME, #oforders, AVG_ORDER_AMT, where the middle column is the total numbers of orders by the customer and the last column is the average order amount for that customer.

(iv) List the order# for orders that were shipped from *all* the warehouses that the company has in a specific city.

(v) Demonstrate the deletion of an item from the ITEM table and demonstrate a method of handling the rows in the ORDER_ITEM table that contain this particular item.

(vi) List the order no, which have max item present.

(vii) List the warehouse#, which involve/s maximum orders.

(viii) List the day-wise total order amount in the year 2012.

(ix) List the customer name that has placed orders amounting maximum sum.

(x) List the item# which was never bought in the year 2011.

(xi) List the city that has minimum orders for a particular item.

(xii) List the customer_id, CName and city name whose city is same as that of the city in which warehouses are situated.

(xiii) List the customer_id, Customer name and address of those customers that are non-residents of the cities of any of the warehouses of the company.

(xiv) List the customer_id, CName and city name that have placed atleast one order, whose city is same as that of the city in which warehouse/s are situated.

(xv) List the customer_id, Customer name and address of customers that have placed atleast one order that are non-residents of the cities of any of the warehouses of the company.

4. Consider the following database of student enrollment in courses & books adopted for each course:

STUDENT (regno: string, name: string, major: string, bdate:date)

COURSE (course #:int, cname:string, dept:string)

ENROLL (regno:string, course#:int, sem:int, marks:int)

BOOK _ ADOPTION (course# :int, sem:int, book-ISBN:int)

TEXT (book-ISBN:int, book-title:string, publisher:string, author:string)

(i) Create the above tables by properly specifying the primary keys and the foreign keys.

(ii) Enter at least five tuples for each relation.

(iii) Demonstrate how you add a new text book to the database and make this book be adopted by some department.

(iv) Produce a list of text books (include Course #, Book-ISBN, Book-title) in the alphabetical order for courses offered by the 'CS' department that use more than two books.

(v) List any department that has *all* its adopted books published by a specific publisher.

(vi) List the regno and name of the students who have enrolled for maximum number of courses.

(vii) List the text books which have not been adopted by any of the course.

(viii) List the book-ISBNs which have been adopted by both Datastructures and Algorithms.

(ix) List the Book-ISBN and title of book which have been adopted by both Datastructures and Algorithms.

(x) List the departments that have *all* its adopted books published by a specific publisher or departments that have adopted maximum number of books.

(xi) list the publisher in ascending alphabetical order along with descending alphabetical order of Book-ISBN,who have published minimum TWO books.

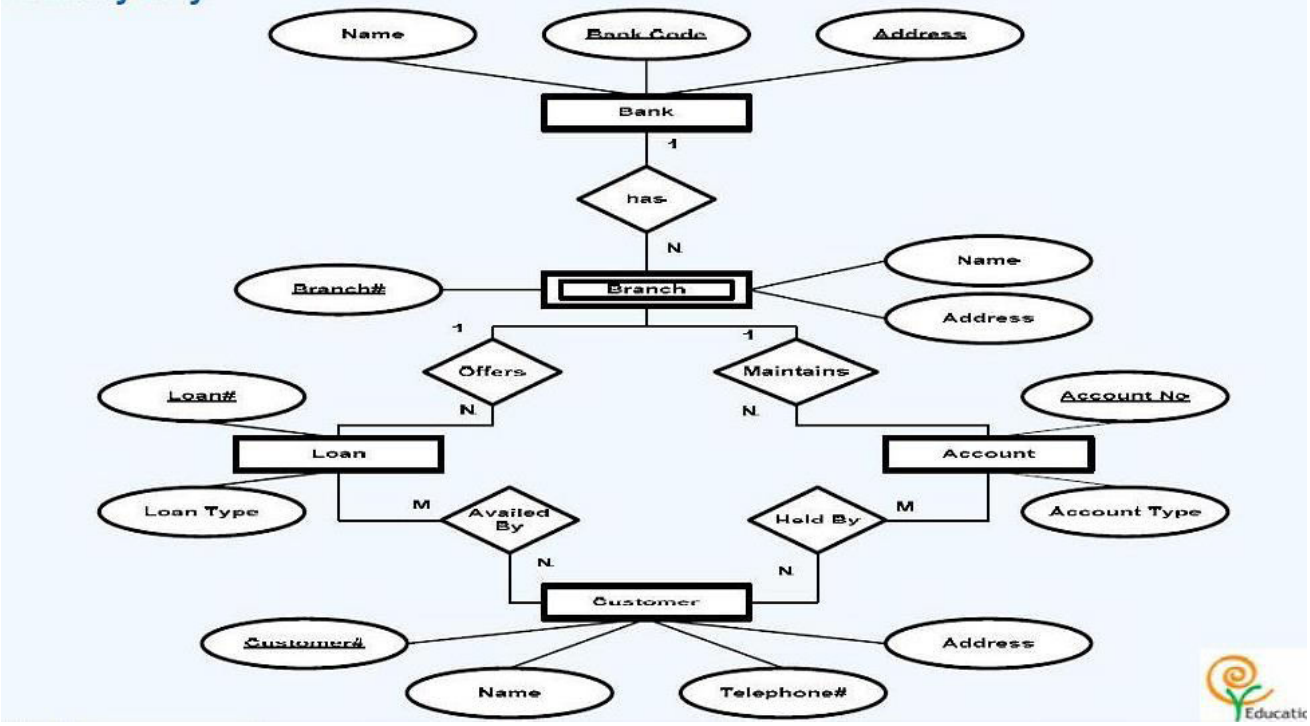
(xii) List depts which have minimum TEN enrollments for any course that have adopted at least TWO books.

(xiii) List the courses that have minimum enrollments with maximum books being adopted.

(xiv) List the Course No, Title of the book adopted and Author name if author has written more than ONE book.

5. Consider the following database for a banking enterprise:

Step 5: Draw complete E-R diagram with all attributes including Primary Key



(i) Create the above tables by properly specifying the primary keys and the foreign keys

(ii) Enter at least five tuples for each relation

(iii) Find all the customers who have at least two accounts at the Main branch.

(iv) Find all the customers who have an account at all the branches located in a specific city.

(v) Demonstrate how you delete tuples in ACCOUNT relation at every branch located in a specific city.