VIT

UNIVERSITY

(Estd. u/s 3 of UGC Act 1956)

Vellore - 632 014, Tamil Nadu, India

School of Information Technology and Engineering

ITA417 - Database Management Systems Lab

Course: MCA

Duration: Jan 2013 – May 2013

CYCLE – I

I. Create the following tables

Company Database

Employee (SSN, Name (fname, Minit, Lname), Sex, Address, salary, DOB, Department, designation, SupervisorSSN)

Department (Number, Name, ManagerSSN, Manager_DOB, Location)

Dependent (Name, DOB, Sex, Relationship, Employee SSN)

Project (Number, Name, Location, Controlling Department, Budget)

Works_on (SSN, Project Num, Hours)

a. Make the underlined columns as primary key.

b. Insert at least 10 rows to each table.
(Apply Interactive insertion. Check Entity Integrity Constraint and key Constraint.)

c. Query the Db to display
   1. The employee details.
   2. Name and DOB of dependent table.

3. Employee names whose name start with “S”.
4. Employee names who work for department no 5.
5. Dependent names who are females and related to Employee no 15678.
6. Project names which are in a particular location.
7. Employee names who do not have a supervisor
8. Department details which has a manager.
9. A project name whose location is “Tidal Park” or department is 6.
10. Employees who were born during 1970s.
11. Employee names who salary is in the range 12000 to 30000.
12. Project numbers for which some employees are working.
13. Employee numbers who work for project nos 1, 3, and 45.
14. Maximum salary withdrawn by an employee.
15. Number of dependents for an employee.
16. Total salary amount sanctioned in department no 4.
17. Number of projects for any SSN.

II. Alter the tables to

1. Add required foreign keys.
2. Insert values to see the referential integrity constraints.
3. Make name of Project as Unique and sex of employee as not null.
4. Add age as a new column to the employee table.
5. Increase the size of project name.
6. Make salary of employee to accept real values.
7. Decrease the size of department name.

III. Create the following assertions in the above tables (make the respective tables empty, perform the following assertions and then insert the values.)

1. Department number should be in the range 1000 to 2000.
2. Relationship of the dependents to an employee should be only Spouse, Son, Daughter, Parent.
3. Name of the project doesn’t exceed 4 characters.

IV. Queries on SQL * PLUS functions.

1. Calculate the age and assign to the corresponding column.
2. Print the year 12 years later than an employee's birth year.
3. Print the month of births of all employees.
4. Print the Project names in Upper case
5. Print department names with left padded stars.
6. Print the first five characters of employee first names.
7. Print the length of longest department name.
8. Print System date in the format 27th June 2006.
9. Replace the a's present in employee names with 'e'.
10. Display the next occurrence of Friday to the dob of an employee

CYCLE – II

V. Nested Queries (Execute the following queries after assigning necessary primary key and foreign key)

1. List the project number, controlling department number and manager Name, address.
2. List the name and address of all employees who work for MCA Department.
3. List the project numbers that involve an employee whose last name is "Smith"
4. Retrieve the Names of the employees whose salary is greater than the salary of all employees in department no 5.
5. Retrieve the employee name who has a dependent with same first Name and same sex as the employee.
6. Retrieve the name of each employee who works on all projects Controlled by department number 5.
7. Retrieve the employee names who have no dependents.
8. List the managers who have at least one dependent.

9. Retrieve the employee names who have at least two dependents.
10. Retrieve the project number, project name and the number of Employees working on that project.
11. Retrieve the project number, name and number of employees for which more than two employees are working.
12. Retrieve the department number and number of employees for which more than five employees are working with salary > 40000.
13. Find the employee names who are working for the projects owned by the department which is making the highest revenue from sponsored projects.

VI. Miscellaneous

1. Create an empty table empl with same structure as employee table.
2. Create a table dp with same contents as dependent table.
3. Create a table with status department name, no of employees, total Salary. Insert values into this table from existing tables.
4. Delete the employees of “R&D” department.
5. Give a hike of 3% in the salary for all the employees of “R&D”.
6. Create a view for Q.3
7. Create a view with employee name, project name and project hours.
8. Update a project name in the view in Q.7.
9. Display the structure of the Dependent table.
10. Drop the unique constraint added for the Employee table.
11. Write a query to show the constraints(plus column) created on the table already existing.
12. Write a query to show the procedures, functions, triggers already created.
13. Write a query to show all the details about constraints.
14. Write a query to see the body of a procedure or function.
15. Write a query to see the body of trigger.