

# **SIT103 – Database and Information Retrieval**

## **2017- Trimester 1- Assignment 2**

**Due Date: Week 11 – 28<sup>th</sup> Sunday May 2017**

### **Company ABC - Background**

Your client, The ABC Company, asks you to create a small database to keep the information of employees, departments, projects and dependants.

Refer the data tables in the page 2 and write answers or perform actions for following questions.

1. Identify primary keys, foreign keys, NULL and other constraints exist with the tables. Document the identified constraints.
2. Create all the tables with identified constraints on Oracle. (e.g. primary keys, foreign keys, NULL and other)
3. Insert all the given values. You are feel free to insert new values to the tables.
4. Write following queries on the tables.
  - a. Print employee's first name, last name, address and department number.
  - b. Print employee full name and department and employee's supervisors full name.
  - c. Print employee information who works for project 3. (i.e. ProductZ).
  - d. Print the employee and the number of dependant for an employee.
  - e. Print information about employees working more than one project.
  - f. Find the manager who earns the highest salary.
  - g. Print for all the employees number of hours in total they have worked in the projects.
  - h. Print project information of the projects which are managed by department 5 (i.e. research).
  - i. Print the total number of projects controlled by the different departments and the manager of the project. (department manager is the project manager)
  - j. Identify and print information about employees who have children less than 15 years old.
  - k. Print details of managers who have worked more than 20 years of the company
  - l. Create your own query. It must include a nested query. Submit the following:
    - i. question your query is answering
    - ii. the SQL query
    - iii. The mark for this question will depend on the complexity of the query.
    - iv. Higher marks will be given for queries that are more complex and/or innovative.
    - v. If you do not provide a description of what question the query is answering, you will get zero for this query.

## Submission

Submit a copy of your queries, electronically on the course portal, on or before the due date. You must submit the syntax of the queries themselves, and a screen shot of the outputs. Submit only 1 PDF file including queries and their screen shots.

### Table Descriptions for ABC Company Employee- Department Tables and Data

#### EMPLOYEE

Fname	Minit	Lname	Ssn	Bdate	Address	Sex	Salary	Super_ssn	Dno
John	B	Smith	123456789	1965-01-09	731 Fondren, Houston, TX	M	30000	333445555	5
Franklin	T	Wong	333445555	1955-12-08	638 Voss, Houston, TX	M	40000	888665555	5
Alicia	J	Zelaya	999887777	1968-01-19	3321 Castle, Spring, TX	F	25000	987654321	4
Jennifer	S	Wallace	987654321	1941-06-20	291 Berry, Bellaire, TX	F	43000	888665555	4
Ramesh	K	Narayan	666884444	1962-09-15	975 Fire Oak, Humble, TX	M	38000	333445555	5
Joyce	A	English	453453453	1972-07-31	5631 Rice, Houston, TX	F	25000	333445555	5
Ahmad	V	Jabbar	987987987	1969-03-29	980 Dallas, Houston, TX	M	25000	987654321	4
James	E	Borg	888665555	1937-11-10	450 Stone, Houston, TX	M	55000	NULL	1

#### DEPARTMENT

Dname	Dnumber	Mgr_ssn	Mgr_start_date
Research	5	333445555	1988-05-22
Administration	4	987654321	1995-01-01
Headquarters	1	888665555	1981-06-19

#### DEPT\_LOCATIONS

Dnumber	Dlocation
1	Houston
4	Stafford
5	Bellaire
5	Sugarland
5	Houston

#### WORKS\_ON

Essn	Pno	Hours
123456789	1	32.5
123456789	2	7.5
666884444	3	40.0
453453453	1	20.0
453453453	2	20.0
333445555	2	10.0
333445555	3	10.0
333445555	10	10.0
333445555	20	10.0
999887777	30	30.0
999887777	10	10.0
987987987	10	35.0
987987987	30	5.0
987654321	30	20.0
987654321	20	15.0
888665555	20	NULL

#### PROJECT

Pname	Pnumber	Plocation	Dnum
ProductX	1	Bellaire	5
ProductY	2	Sugarland	5
ProductZ	3	Houston	5
Computerization	10	Stafford	4
Reorganization	20	Houston	1
Newbenefits	30	Stafford	4

#### DEPENDENT

Essn	Dependent_name	Sex	Bdate	Relationship
333445555	Alice	F	1986-04-05	Daughter
333445555	Theodore	M	1983-10-25	Son
333445555	Joy	F	1958-05-03	Spouse
987654321	Abner	M	1942-02-28	Spouse
123456789	Michael	M	1988-01-04	Son
123456789	Alice	F	1988-12-30	Daughter
123456789	Elizabeth	F	1967-05-05	Spouse