

Database Lab Take Home Assignment - 3 (2 Questions, 100 Points)

Submission Dead Line: 7-Oct-2021 23:59 Hours

1. Create 6 tables with following specifications:

T1: Employee

Attributes:

ENAME	Alphabets with spaces
Middle Name	Alphabets - Optional
LName	Alphabets with spaces
SSN	Numbers [Primary Key]
BDate	Date
Address	Alphanumeric with spaces
Sex	M or F
Salary	Numeric
Super_SSN	Numeric
DNo	Numeric

T2: Department

Attributes:

DName	Alphabets
DNo	Numeric[Primary key]
Mgr_SSN	Numeric
Mgr_start_date	Date

T3: Dept. Locations

Attributes:

Dnumber	Numeric[Primary key]
DLocation	Alphabets[Unique]

T4: Project

Attributes:

Pname	Alphabets
Pnumber	Numeric[Primary key]
PLocation	Alphabets
Dnum	Numeric

T5: Works_on

Attributes:

ESSN Numeric[Primary Key]
Pnumber Numeric
Hours Numeric

T6: Dependent

Attributes:

ESSN Numeric [Primary key]
Dependent name Alphabets with spaces
Sex M or F
BDate Date
Relationship "Spouse" / "Child" / "Parent"

- I. Create a view that has the department name, manager name, and manager salary for every department
- II. Create a view that has the Employee Name, Supervisor name and employee salary for each employee who works in the "Research" Department.
- III. A view that has the Project name, controlling department name, Number of employees, and total hours worked per week on the project, for each project.
- IV. A view that has the project name, controlling department name, number of employees, and total hours worked per week on the project for each project with more than one employee working on it.

Evaluations Table:

Table constructions and Record insertions	10 Marks
10×4	40
Total	50

2. Consider following view Dept_Summary, defined on the COMPANY database in the following figure:

```
CREATE VIEW                DEPT_SUMMARY(D,C>Total_s, Average_s)
AS SELECT        Dno, COUNT(*), SUM(SALARY), AVG(SALARY)
FROM                EMPLOYEE
GROUP BY        Dno;
```

State which of the following queries and updates would be allowed, show what the corresponding query or update on the base relations would look like, and give its result when applied to the database of the Figure.

- I. SELECT * FROM DEPT_SUMMARY;
- II. SELECT D,C FROM DEPT_SUMMARY WHERE TOTAL_S > 100000;
- III. SELECT D,AVERAGE_S FROM DEPT_SUMMARY WHERE C > (SELECT C FROM DEPT_SUMMARY WHERE D=4);
- IV. UPDATE DEPT_SUMMARY SET D=3 WHERE D=4;
- V. DELETE FROM DEPT_SUMMARY WHERE C > 4;

Evaluations Table:

Table constructions and Record insertions	10 Marks
8×5	40
Total	50

Fig: Sample values for table.

EMPLOYEE

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

DEPARTMENT

Dname	Dnumber	Dmgr_ssn
Research	5	333445555
Administration	4	987654321
Headquarters	1	888665555

DEPT_LOCATIONS

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

WORKS_ON

Ssn	Pnumber	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