SVKM'S NMIMS, School of Technology Management & Engineering | Navi-Mumbai

MBA-Tech (A.Y. 2020-21)

Assignment

(Unit 4)

Q1. Consider the following schema:

Suppliers (sid: integer, sname: string, address: string)
Parts (pid: integer, pname: string, color: string)
Catalog (sid: integer, pid: integer, cost: real)
The key fields are underlined, and the domain of each field is listed after the field name. Therefore, Sid is the key for Suppliers, pid is the key for Parts, and sid and pid together form the key for Catalog. The Catalog relation lists the prices
charged for parts by Suppliers.
Write the following queries in SQL
l. Find the names of suppliers who supply some red part.
2. Find the sids of suppliers who supply some red or green part.
3. Find the sids Of suppliers who supply some red part or are at 221 Packer Street.

Q2. Explain below relational algebra operations with example:

a. Union

b. Aggregate functions

c. Full outer join

Q3. Explain generalization, specialization with suitable example.

Q4. Explain all the relational algebra set operations.

Q5. Explain the following relational algebra operations with examples

(i) Generalized Projection and Selection

(ii) Natural join

(iii) Rename

Q6. Person (driver-id, name, address)

Car (model-no, year, color)

Accident (report-number. date, location)

Owns (driver-id, driver name, license, issuing-date not null)

Participated (driver-id, license, report-number, damage, amount)

Write the Relational Algebra Query:

a. Organization wants to see only driver id and amount from participated

schema. Create the view for this scenario

b. Retrieve the driver's name, address whose driver id is 10403

c. Retrieve the driver's name and license issuing date using left outer join.

Q7. Solve below queries using tables given below:

Student (StdNo, StdFirstName, StdLastName,StdCity,Stdstate,StdZip, StdGPA)

Faculty (FacNo, FacFirstName, FacLastName, FacCity, FacState, FacDept, FacDesignation, FacSalary)

Offering (OfferNo, CourseNo, OffTerm, OffYear, FacNo)

Course (CourseNo, CourseDescription, CourseCredits)

Solve below queries using relational algebra:

l. Find Out faculty number and faculty first name of faculties who conduct course with course number 101 offered in terrn 'FALL'.

2. Find out course number and course description having credits more than 3.

Q8. For given relation, solve below queries.

Employee (Empno (primary key), Ename, Eaddress, Ephone_no, Manager _ no (foreign key referring to Empno), Salary, Deptno)

Department (Deptno (primary key), Dname, Dlocation_id)

Location (Dlocation_id, Dlocation_Name)

Project (Project_no, Project_title, Project cost)

Works_on (Empno, Project_no, no of hours _ worked)

(Assumption: One employee works on more than one project)

Project_belongs to (Project _no, Deptno)

Solve queries using Relational Algebra

1. Write a query to find Empno, Ename of employees having salary more than 20000.

2. Count number of projects that belong to each department.

3. Find Department details located at location id 1,2 or 3.

4. Find Project_no, Project_title for all projects.