IT3031 - Database Systems and Data Driven Applications

BSc (Hons) in IT Data Science

Faculty of Computing

Sri Lanka Institute of Information Technology

Practical 1 – Relational Model

1. Use the following relational database schema for recording the information shown below. Primary keys are underlined.

   Employee (EmpNo: varchar(20), fname:char(20), lname:char(20), address:varchar(40),salary:integer, DeptNo:varchar(20))

   Department (DeptNo:varchar(20),DeptName:char(20),Location:varchar(20))

   Project (ProjNo:char(5), Project_Name:varchar(20), DeptNo:varchar(20))

   Works_On(EmpNo:integer, ProjNo:char(5),DateWorked:date,Hours:number(2))

2. Insert the following data.

   EMPLOYEE

EmpNo	fname	lname	address	salary	DeptNo
Emp01	John	Scott	Mysore	45000	003
Emp02	James	Smith	Bangalore	50000	005
Emp03	Edward	Hedge	Bangalore	65000	002
Emp04	Santhosh	Kumar	Delhi	80000	002
Emp05	Veena	M	Mumbai	45000	004

   DEPARTMENT

DeptNo	DeptName	Location
001	Accounts	Bangalore
002	IT	Mumbai
003	ECE	Mumbai
004	ISE	Mumbai
005	CSE	Delhi

PROJECT

ProjNo	Project_Name	DeptNo
P01	IOT	005
P02	Cloud	005
P03	BankMgmt	004
P04	Sensors	003
P05	BigData	002

WORKS_ON

EmpNo	ProjNo	DateWorked	Hours
Emp02	P03	02-OCT-2018	4
Emp01	P02	22-JAN-2014	13
Emp02	P02	19-JUN-2020	15
Emp02	P01	11-JUN-2020	10
Emp01	P04	08-FEB-2009	6
EMP02	~~P01~~ P04	18-OCT-2018	18
Emp01	P05	02-SEP-2011	7

3. Answer the queries given below, using the tables in your database.

   a. Retrieve the name and address of all employees who work for the 'IT' department.
   b. Retrieve the salary of every employee and all distinct salary values.
   c. Retrieve the names of all employees in department 005 who work more than 10 hours per week on the P01 project.
   d. Retrieve a list of employees and the projects they are working on, ordered by department and, within each department, ordered alphabetically by last name, then first name.
   e. Show the resulting salaries of every employee working on the 'IOT' project is given a 10 percent raise.