National Institute of Technology Calicut

Department of Computer Science and Engineering

CS3095D DATABASE MANAGEMENT SYSTEMS LABORATORY

S5/S7 B.Tech. - Monsoon Semester 2022

End Semester Examination [25/11/22]

Part C- SET A
[Relational Algebra]

(Max. Marks: 6, Time: 45 minutes)

(Note: (i) Please note that you can use the PPT and syntaxes file uploaded to eduserver. (ii) After tables creation display the data and take screenshots (Alt+print-Screen) and also for every answer take screenshot to make it convenient for evaluation.)

Create a database with the following table.

Hobbies_info table with the following schema:

Name *Varchar(20), Primary key*	Hobby *Varchar(20)* (only one hobby)

Each row (x,y) indicates x's hobby is y.

To make it suitable for the queries below please ensure the following in the table.

- At-least two students have 'Painting' hobby.
- Atleast two students has same hobby.
- There exists atleast one hobby x such that x is not a hobby to more than one student.
- There exists atleast one student whose hobby is 'Programming'.

Based on the above database find the following using the RA tool:

1. Find the students whose hobby is 'Painting'. (0.5 Mark)

2. Find the hobbies other than student x's hobby. (Consider 'x' as any one student present in the table created.) (1 Mark)

3. Apply cross product on Hobbies_info and Hobbies_info. (0.75 Mark)

4. Find the hobbies which are hobbies to not more than 1 student. (1.5 Marks)

5. Find the pairs (x, y) $such\ that\ x \in name, y \in Name$ and hobby of x is same as hobby of y. (1.5 Marks).

6. Find the students whose hobby is either 'Coding' or 'Painting'. (0.75 Mark)