WALCHAND INSTITUTE OF TECHNOLOGY, SOLAPUR
INFORMATION TECHNOLOGY
2021-22 SEMESTER –I

Advanced Database System

Name: Alaikya S Yemul Roll No: 62

ASSIGNMENT NO: 4

Title: Implement Semi-join in distributed database

Theory :

Semi-Join matches the rows of two relations and then show the matching rows of the relation whose name is mentioned to the left side of ⋉ Semi Join operator.

Example :

At site1: Student(std_id,std_name)

At site2: Registration(std_id,course_id)

Steps of Semi-join :

1. Project Registration on std_id

   X= ΠstdΠ_id(Registration)

2. Transmit X to site1.
3. At site1 ,select those tuples of Student that have the same value for std_id as a tuple in

   πstd_id(REGISTRATION) by a join.

   Y=STUDENT⋉REGISTRATION=STUDENT⋈X

4. Send Y to site 2 and join with REGISTRATION.Now we get the complete result i.e the class list of all students on a particular course.

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Program Code :

```
import mysql.connector
import tkinter  as tk
from tkinter import *
def display():
    my_w = tk.Tk()
    my_w.title("Subject Table")
    my_w.geometry("600x200")
    my_connect = mysql.connector.connect(
        host="localhost",
        user="root",
        passwd="root",
        database="exammanagement"
    )
    my_conn = my_connect.cursor()
    my_conn.execute("SELECT * FROM subject")
    i=0
    for student in my_conn:
        for j in range(len(student)):
            e = Entry(my_w, width=25, fg='blue')
            e.grid(row=i, column=j)
            e.insert(END, student[j])
        i=i+1


    my_w1 = tk.Tk()
    my_w1.title("Department Table")
    my_w1.geometry("600x200")
    my_connect1 = mysql.connector.connect(
        host="localhost",
        user="root",
        passwd="root",
        database="exammanagement"
    )
    my_conn1 = my_connect1.cursor()
    my_conn1.execute("SELECT * FROM department")
    i=0
    for student in my_conn1:
        for j in range(len(student)):
            e = Entry(my_w1, width=25, fg='blue')
```

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```
            e.grid(row=i, column=j)
            e.insert(END, student[j])
        i=i+1

    my_w1.mainloop()
    my_w.mainloop()


def semijoin():
    my_w = tk.Tk()
    my_w.title("Subject Table")
    my_w.geometry("600x200")
    my_connect = mysql.connector.connect(
        host="localhost",
        user="root",
        passwd="root",
        database="exammanagement"
    )
    my_conn = my_connect.cursor()
    my_conn.execute("""SELECT   D.dept_id, D.dept_name FROM department D WHERE
EXISTS
                    (SELECT 1
                    FROM   subject S
                    WHERE  S.dept_id = D.dept_id)
                    ORDER BY D.dept_id;""")
    i=0
    for student in my_conn:
        for j in range(len(student)):
            e = Entry(my_w, width=50, fg='blue')
            e.grid(row=i, column=j)
            e.insert(END, student[j])
        i=i+1
    my_w.mainloop()

root = Tk()
root.title("Semi-Join")
root.geometry("400x200")
lbl = Label(root, text="Semi-Join", font=("Times New Roman Bold", 20))
lbl.grid(column=25, row=20)
btn = Button(root,text="Display tables",font=("Arial",10),command=display)
btn.grid(column=30,row=30)
```

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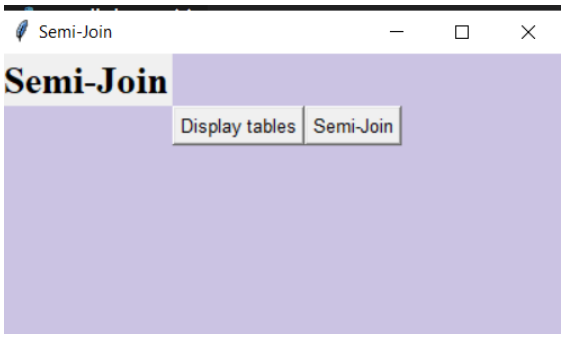
```
btn = Button(root,text="Semi-Join",font=("Arial",10),command=semijoin)
btn.grid(column=50,row=30)

root['bg'] = '#CBC3E3'
root.mainloop()
```

Screenshots:



Subject Table

CSE020401	Applied Mathematics-II	1	4
CSE020402	Theory of Computation	1	4
CSE020403	Microprocessor	1	4
CSE020404	Data Strucure	1	4
CSE020405	Computer Networks	1	4
CSE020406	Object Oriented Programmir	1	4
CSE020407	Environmental Science-II	1	4
CSE030601	Software Engineering	2	6
CSE030602	OOMD	2	6
CSE030603	Artificial Engineering	2	6
CSE030604	Data Science	2	6
CSE030605	Mobile Application Developr	2	6
CSE030606	Java Programming	2	6
CSE030607	Self Learning	2	6
ET030601	Antenna and WavePropogati	3	6
ET030602	Embedded System	3	6
ET030603	Electronic System Design	3	6
ET030604	Advanced Mobile Communi	3	6
ET030605	Elective-II	3	6
ET030606	Self Learning	3	6
IT030601	Software Engineering	2	6
IT030602	OOMD	2	6
IT030603	Artificial Engineering	2	6
IT030604	Data Science	2	6
IT030605	Mobile Application Developr	2	6
IT030606	Java Programming	2	6
IT030607	Self Learning	2	6

Department Table

1	CSE	Computer Science
2	IT	Information Technology
3	ENTC	Electrical and TeleCommuni
4	ELN	Electronics Engineering
5	CIVIL	Civil engineering
6	MECH	Mechanical Engineering
7	MTECH	Post Graduate

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