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= πstd\_id(Registration)

1. Transmit X to site1.
2. 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

1. 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.

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')

            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)

btn = Button(root,text="Semi-Join",font=("Arial",10),command=semijoin)

btn.grid(column=50,row=30)

root['bg'] = '#CBC3E3'

root.mainloop()

Screenshots:





