```
import sqlite3

# establish connection
conn = sqlite3.connect ('demo.db')

#used to excute SQL commands
cursor = conn.cursor()

# create 'Users' table
cursor.execute('''CREATE TABLE IF NOT EXISTS Users  (
                    user_id INTEGER PRIMARY KEY,
                    username TEXT UNIQUE,
                    email TEXT UNIQUE,
                    password TEXT,
                    created_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP
                    )''')

# create 'UserActivities' table
cursor.execute('''CREATE TABLE IF NOT EXISTS UserActivities (
                   activity_id INTEGER PRIMARY KEY,
                   user_id INTEGER,
                   activity TEXT,
                   activity_time TIMESTAMP DEFAULT CURRENT_TIMESTAMP ,
                   FOREIGN KEY (user_id) REFERENCES User(user_id)
                  )''')

# create 'UserConnections" table
cursor.execute('''CREATE TABLE IF NOT EXISTS UserConnections (
                   connection_id INTEGER PRIMARY KEY,
                   user1_id INTEGER,
                   user2_id INTEGER,
                   conncetion_time TIMESTAMP DEFAULT CURRENT_TIMESTAMP ,
                   FOREIGN KEY (user1_id) REFERENCES Users(user_id) ,
                   FOREIGN KEY (user2_id) REFERENCES Users(user_id)
                 )''')

# create indexes for data retrivival
cursor. execute ("CREATE INDEX IF NOT EXISTS idx_user_id ON UserActivities(user_id)")
cursor.execute("CREATE INDEX IF NOT EXISTS idx_user1_user2 ON UserConnections(user1_id, user2_id)")

# commit (save) changes
conn.commit()

# add (insert) data into User table
cursor.execute("INSERT INTO Users (username, email, password) VALUES (?,?,?)", ('alice', 'alice@example.c
cursor.execute("INSERT INTO Users (username, email, password) VALUES (?,?,?)", ('bob', 'bobexample.com','

# add (insert) data into UserActivities table
cursor.execute("INSERT INTO UserActivities (user_id, activity) VALUES (?,?)", (1,'Logged in'))
cursor.execute("INSERT INTO UserActivities (user_id, activity) VALUES (?,?)", (2, 'Posted a comment'))
 # commit (save) changes
conn.commit ()

#query and print date from the users table
print("Users:")
cursor.execute("SELECT * FROM Users")
```

```
for row in cursor.fetchall():
    print(row)

#query and print data from the UserActivities table
print("\nUser Connections:")
cursor.excute("SELECT * FROM UserConnections")
for row in cursor.fetchahll():

      print(row)
# close the datebase connections
conn.close()
```

```
---------------------------------------------------------------------------
IntegrityError                            Traceback (most recent call last)
<ipython-input-12-bfcd25b0fca1> in <cell line: 45>()
     43
     44 # add (insert) data into User table
---> 45 cursor.execute("INSERT INTO Users (username, email, password) VALUES (?,?,?)", ('alice',
'alice@example.com', 'password123'))
     46 cursor.execute("INSERT INTO Users (username, email, password) VALUES (?,?,?)", ('bob',
'bobexample.com','secret123'))
     47

IntegrityError: UNIQUE constraint failed: Users.email
```

Next steps: Explain error