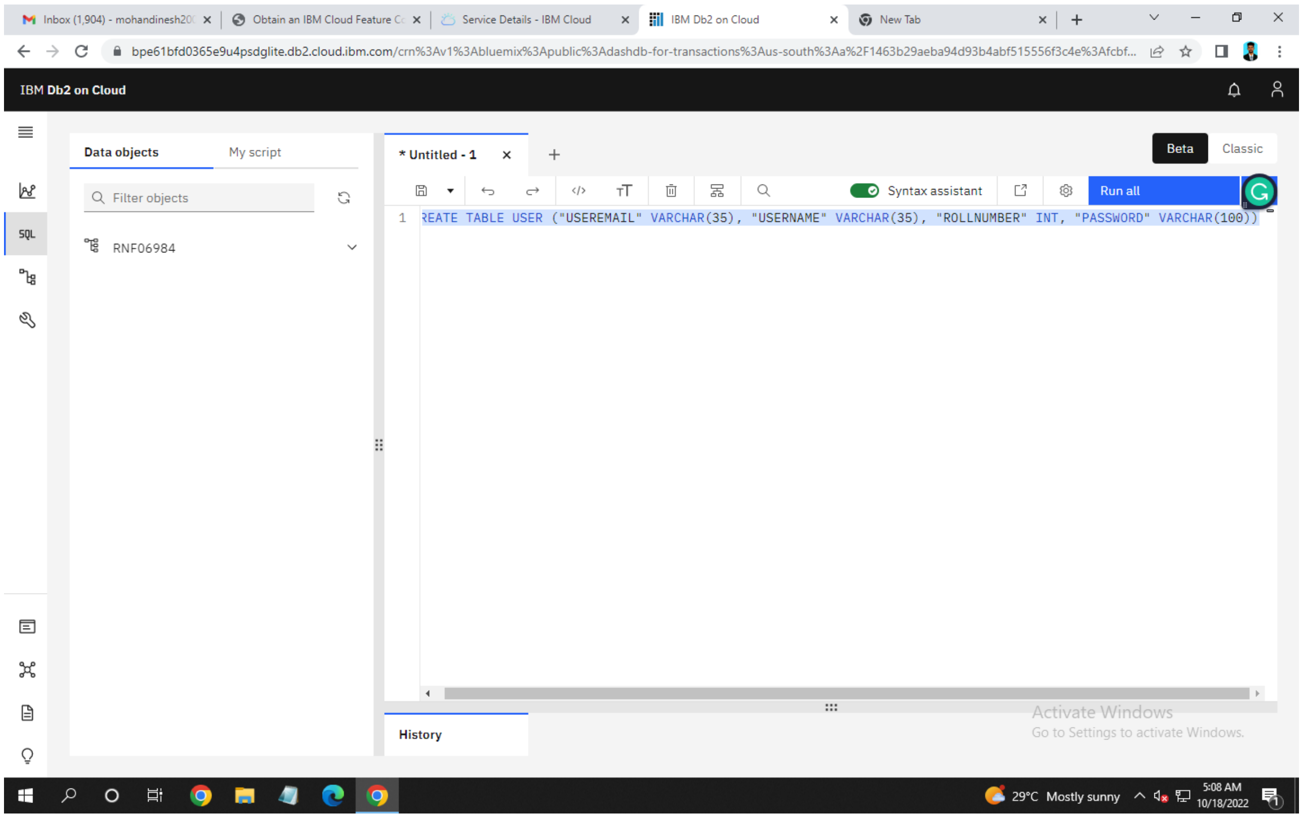
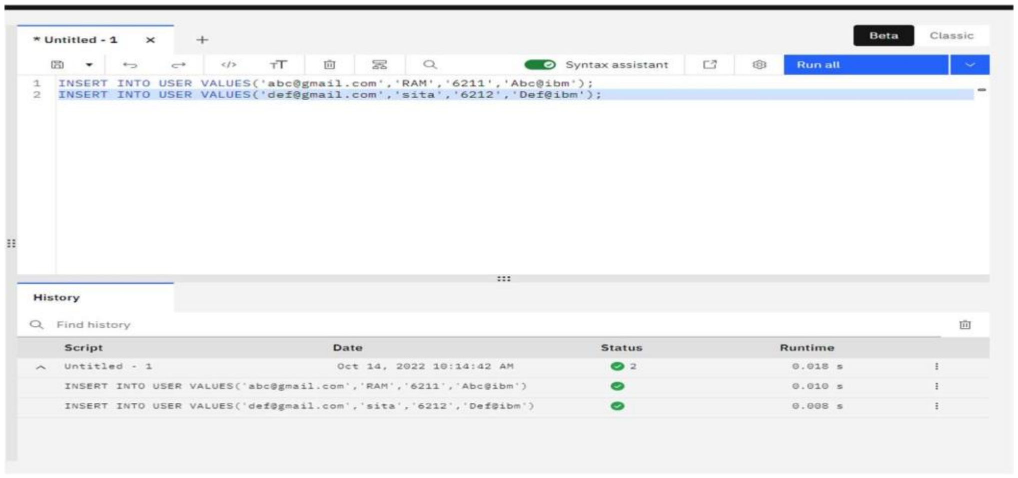
1. Create User table with user with email , username, roll number, password.



```
REATE TABLE USER ("USEREMAIL" VARCHAR(35), "USERNAME" VARCHAR(35), "ROLLNUMBER" INT, "PASSWORD" VARCHAR(100))
```

2. Perform UPDATE, DELETE Queries with User table

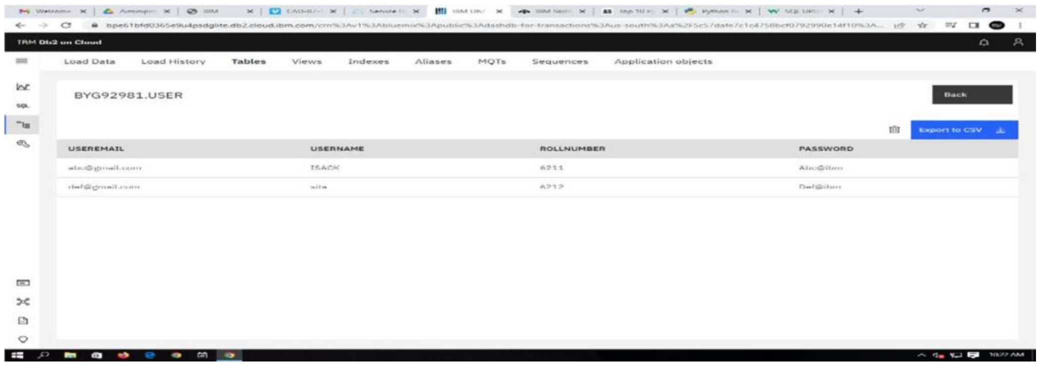


```
INSERT INTO USER VALUES('abc@gmail.com','RAM','6211','Abc@ibm');
INSERT INTO USER VALUES('def@gmail.com','sita','6212','Def@ibm');
```

History

Script	Date	Status	Runtime
Untitled - 1	Oct 14, 2022 10:14:42 AM	✓ 2	0.018 s
INSERT INTO USER VALUES('abc@gmail.com','RAM','6211','Abc@ibm')		✓	0.010 s
INSERT INTO USER VALUES('def@gmail.com','sita','6212','Def@ibm')		✓	0.008 s

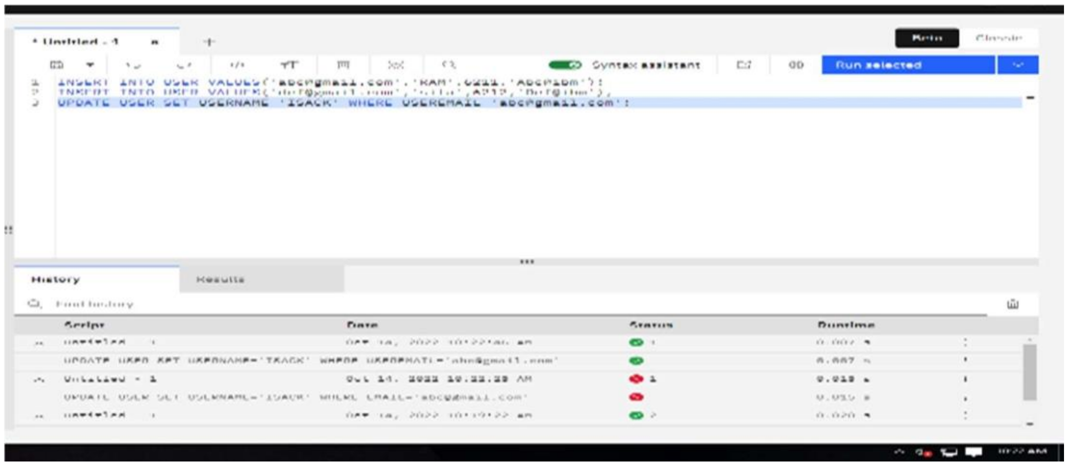
Table View:



BYG92981.USER

USEREMAIL	USERNAME	ROLLNUMBER	PASSWORD
abc@gmail.com	ISACK	6211	Abc@ibm
def@gmail.com	sita	6212	Def@ibm

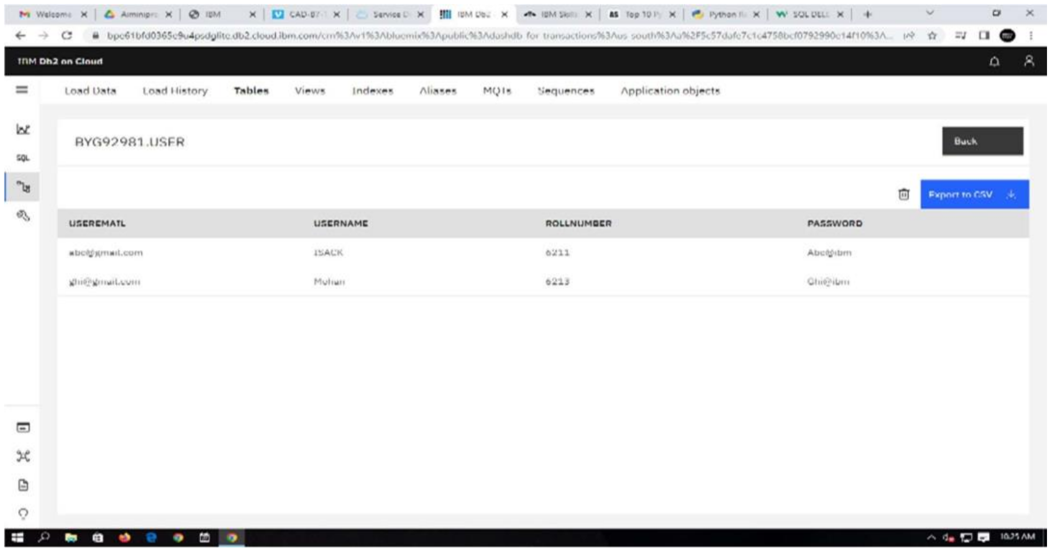
UPDATE:



```
INSERT INTO USER VALUES('abc@gmail.com','RAM',6211,'Abc@ibm');
INSERT INTO USER VALUES('def@gmail.com','sita',6212,'Def@ibm');
UPDATE USER SET USERNAME='ISACK' WHERE USEREMAIL='abc@gmail.com';
```

Script	Date	Status	Runtime
Untitled - 1	Oct 14, 2022 10:22:[illegible] AM	✓ 1	0.007 s
UPDATE USER SET USERNAME='ISACK' WHERE USEREMAIL='abc@gmail.com'		✓	0.007 s
Untitled - 1	Oct 14, 2022 10:22:20 AM	✗ 1	0.019 s
UPDATE USER SET USERNAME='ISACK' WHERE EMAIL='abc@gmail.com'		✗	0.019 s
Untitled - 1	Oct 14, 2022 10:19:22 AM	✓ 2	0.020 s

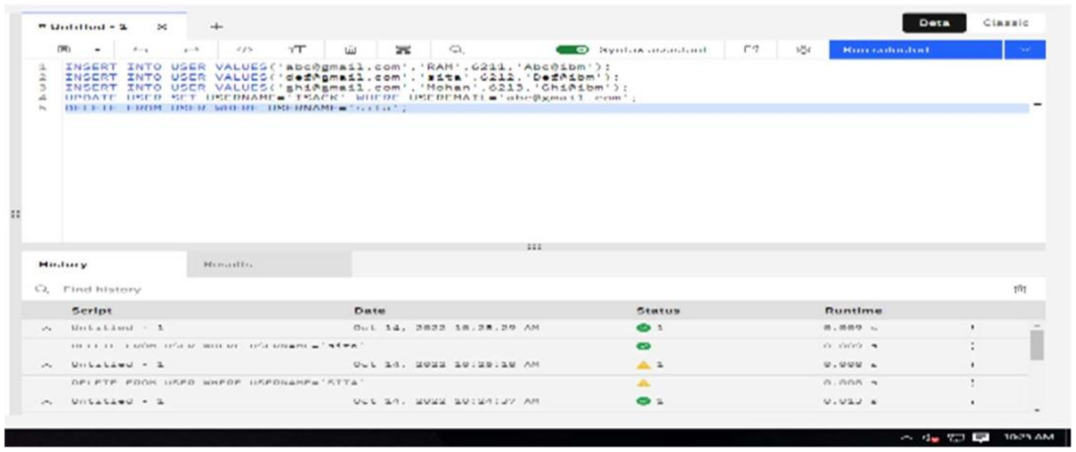
Table View:



BYG92981.USER

USEREMAIL	USERNAME	ROLLNUMBER	PASSWORD
abc@gmail.com	ISACK	6211	Abc@ibm
ghi@gmail.com	Mohan	6213	Ghi@ibm

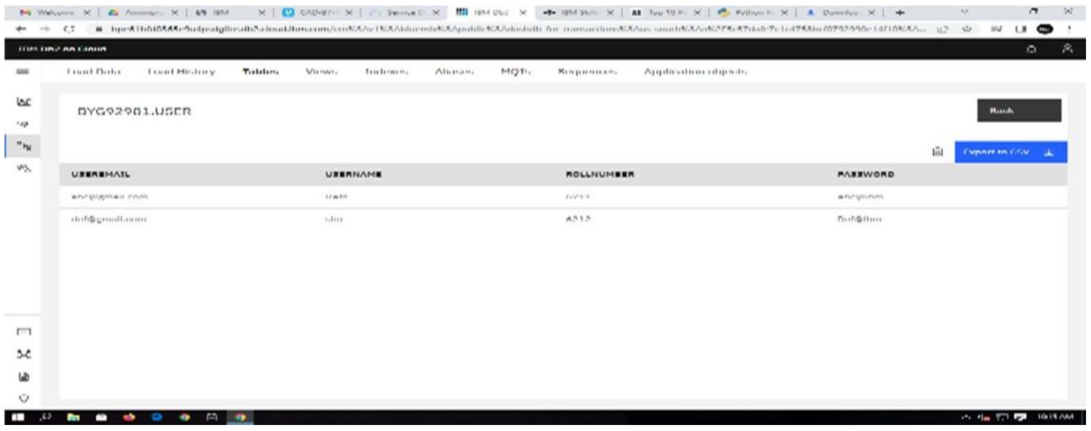
DELETE:



```
INSERT INTO USER VALUES('abc@gmail.com','RAM',6211,'Abc@ibm');
INSERT INTO USER VALUES('def@gmail.com','sita',6212,'Def@ibm');
INSERT INTO USER VALUES('ghi@gmail.com','Mohan',6213,'Ghi@ibm');
UPDATE USER SET USERNAME='JACK' WHERE USEREMAIL='abc@gmail.com';
DELETE FROM USER WHERE USERNAME='sita';
```

Script	Date	Status	Runtime
Untitled - 1	Oct 14, 2022 10:28:29 AM	● 1	0.009 s
DELETE FROM USER WHERE USERNAME='sita'		●	0.002 s
Untitled - 1	Oct 14, 2022 10:25:18 AM	⚠ 1	0.008 s
DELETE FROM USER WHERE USERNAME='SITA'		⚠	0.005 s
Untitled - 1	Oct 14, 2022 10:24:27 AM	● 1	0.013 s

TABLE View:



DYG92981.USER

USEREMAIL	USERNAME	ROLLNUMBER	PASSWORD
abc@gmail.com	JACK	6211	abc@ibm
def@gmail.com	sita	6212	Def@ibm

3. Connect python with db2.

   Solution:

```
import ibm_db conn = ibm_db.connect("DATABASE=bludb;HOSTNAME=6667d8e9-9d4d-4ccb-ba32-21d
a3bb5aafc.c1ogj3sd0tgtu0lqde00.databases.appdomain.cloud;PORT=30376;SECURITY=SSL;SS
LS erverCertificate=DigiCertGl obalRootCA.crt;PROTOCOL=TCPIP;UID= rnf06984
;PWD=" VWqiPBgxELVtAn32
",",")
```

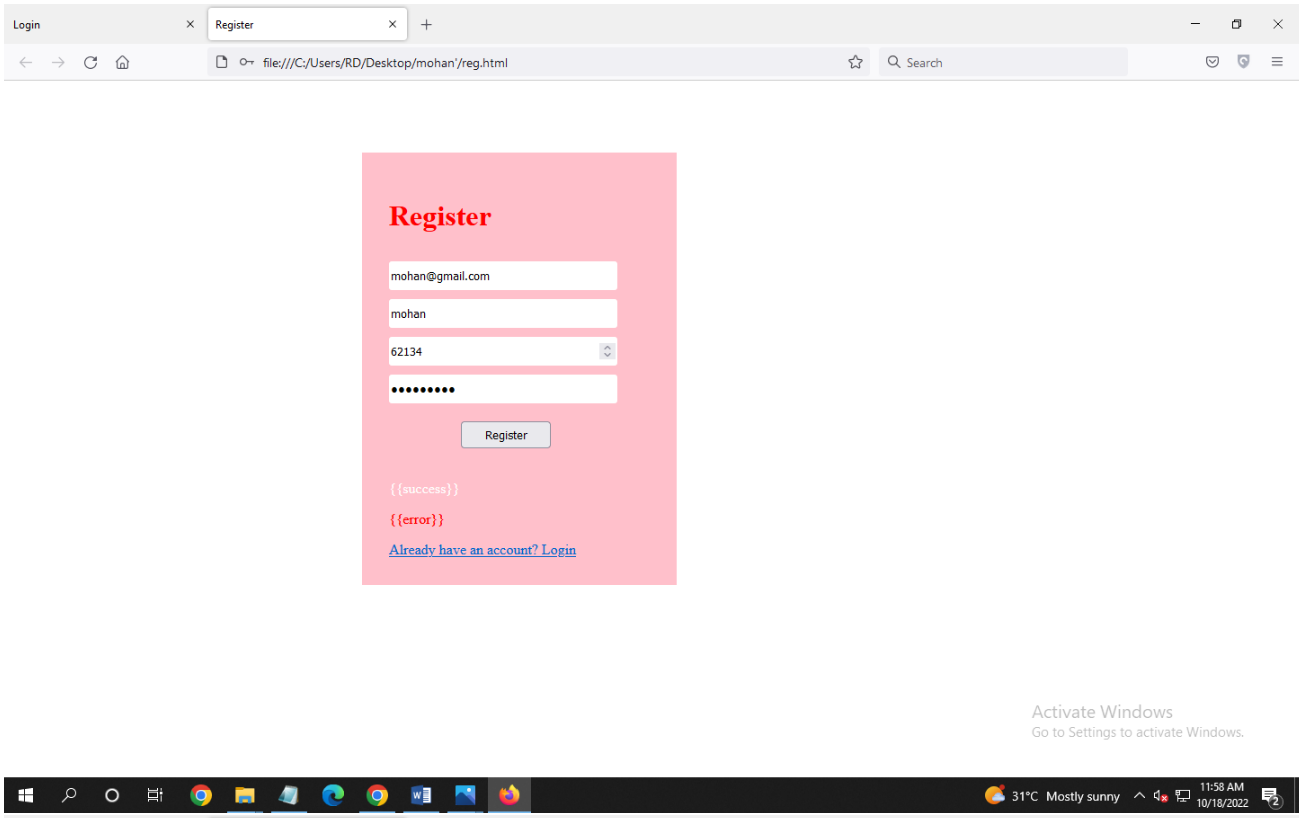
4. Create a flask app with the registration page. Login page and the welcome page. By default load the registration page once the user enters all the fields, store the data in database and navigate to login page. Authenticate user username and password. If the user is valid so the welcome page.

Solution:

```
app.py from flask import Flask, render_template, request, redirect, url_for,
session

import ibm_db
import bcrypt conn
=
ibm_db.connect("DATABASE=bludb;HOSTNAME=;PORT=;SECURITY=SSL;SSLServerCertific
ate=DigiCer tGlobalRootCA.crt;UID=;PWD=","","") # url_for('static', filename='style.css')

app = Flask(_name_)
app.secret_key = 'C21FGSBAPOK43K5VSIDFB2'

@app.route("/",methods=['GET'])
def home():
    if 'email' not in session:
      return redirect(url_for('login'))
    return render_template('home.html',name='Home')

@app.route("/register",methods=['GET','POST'])
def register(): if request.method ==
  'POST': email = request.form['email']
  username = request.form['username']
  rollNo = request.form['rollNo']
    password = request.form['password']

    if not email or not username or not rollNo or not password:
      return render_template('register.html',error='Please fill all fields')

    hash=bcrypt.hashpw(password.encode('utf-8'),bcrypt.gensalt())

    query = "SELECT * FROM USER WHERE email=? OR
    rollNo=?" stmt = ibm_db.prepare(conn, query)
    ibm_db.bind_param(stmt,1,email)
    ibm_db.bind_param(stmt,2,rollNo) ibm_db.execute(stmt)
    isUser = ibm_db.fetch_assoc(stmt)

    if not isUser:
      insert_sql = "INSERT INTO User(username,email,PASSWORD,rollNo) VALUES
      (?,?,?,?)" prep_stmt = ibm_db.prepare(conn, insert_sql)
      ibm_db.bind_param(prep_stmt, 1, username) ibm_db.bind_param(prep_stmt, 2,
      email) ibm_db.bind_param(prep_stmt, 3, hash) ibm_db.bind_param(prep_stmt, 4,
      rollNo) ibm_db.execute(prep_stmt)
      return render_template('register.html',success="You can login")
    else: return render_template('register.html',error='Invalid
  Credentials') return render_template('register.html',name='Home')
```

```
@app.route("/login",methods=['GET','POST'])
def login():
    if request.method == 'POST':
      email = request.form['email']
      password = request.form['password']

      if not email or not password:
        return render_template('login.html',error='Please fill all fields')
      query = "SELECT * FROM USER WHERE
      email=?" stmt = ibm_db.prepare(conn, query)
      ibm_db.bind_param(stmt,1,email)
      ibm_db.execute(stmt) isUser =
      ibm_db.fetch_assoc(stmt)
      print(isUser,password)
      if not isUser:
        return render_template('login.html',error='Invalid Credentials')

      isPasswordMatch = bcrypt.checkpw(password.encode('utf-
      8'),isUser['PASSWORD'].encode('utf-
8'))

      if not isPasswordMatch:
        return render_template('login.html',error='Invalid Credentials')

      session['email'] = isUser['EMAIL']
      return redirect(url_for('home'))

    return render_template('login.html',name='Home')
@app.route('/logout') def
logout():
    session.pop('email', None)
    return redirect(url_for('login'))
```

OUTPUT:



Login

Register

file:///C:/Users/RD/Desktop/mohan'/reg.html

Register

mohan@gmail.com

mohan

62134

•••••••••

Register

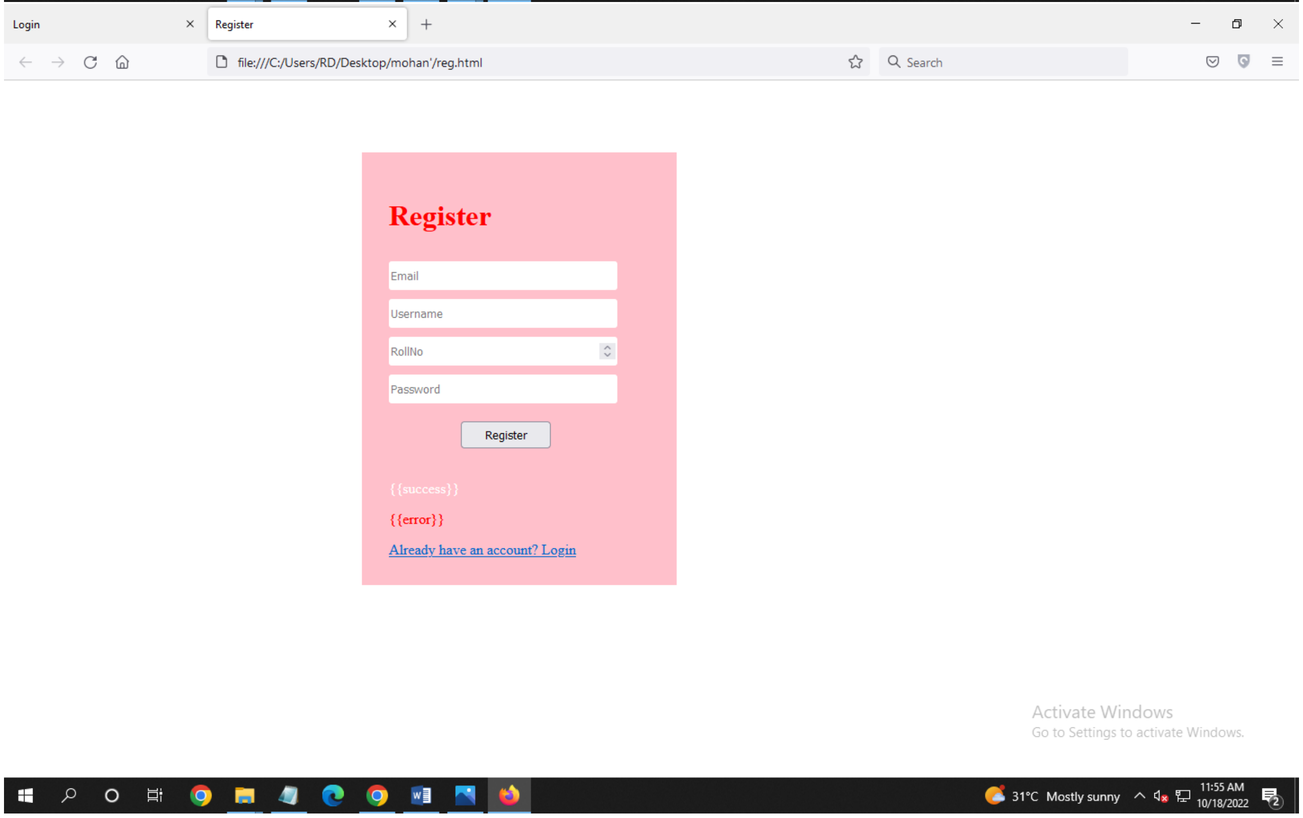
{{success}}

{{error}}

Already have an account? Login

Activate Windows
Go to Settings to activate Windows.

31°C Mostly sunny 11:58 AM 10/18/2022



Login

Register

file:///C:/Users/RD/Desktop/mohan'/reg.html

Register

Email

Username

RollNo

Password

Register

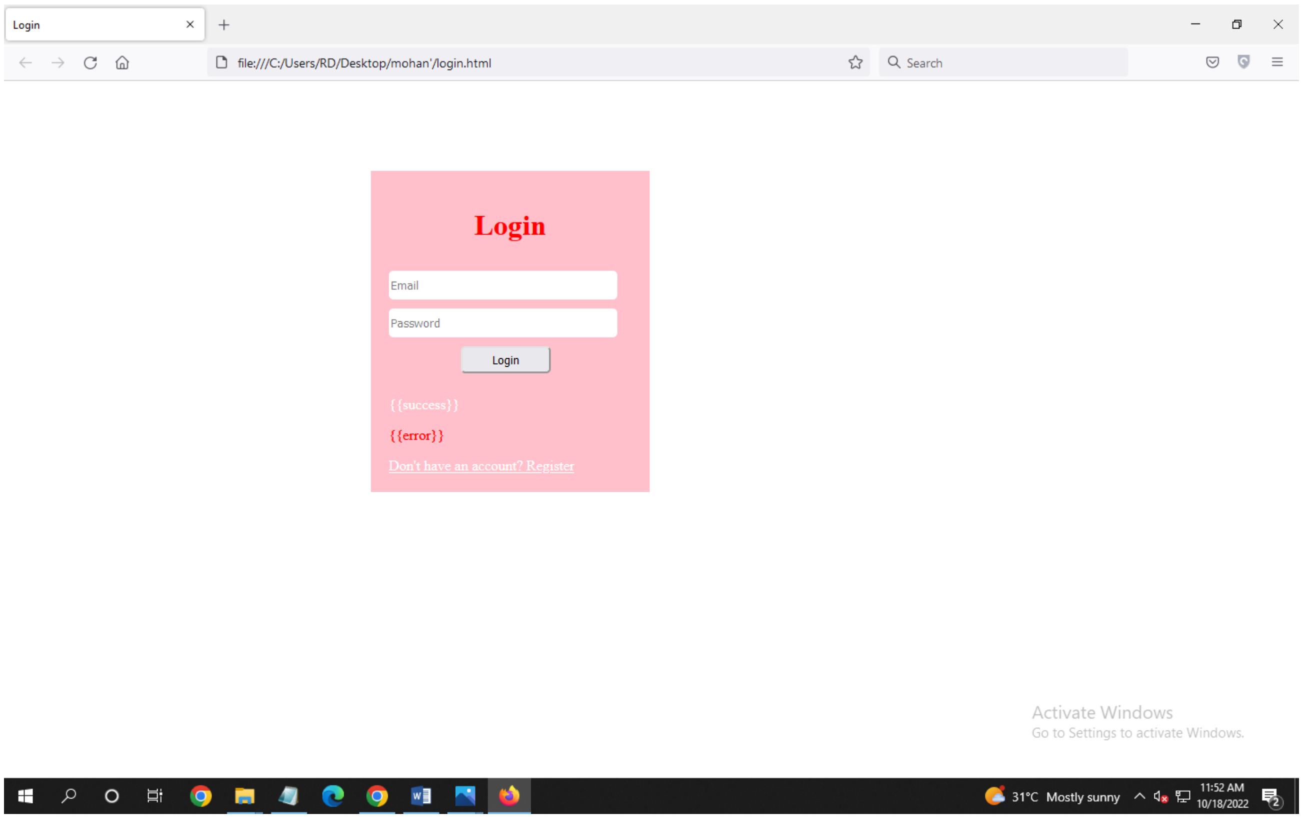
{{success}}

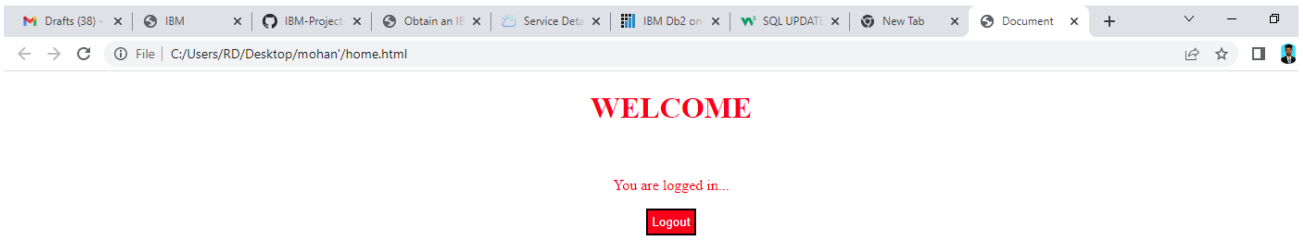
{{error}}

Already have an account? Login

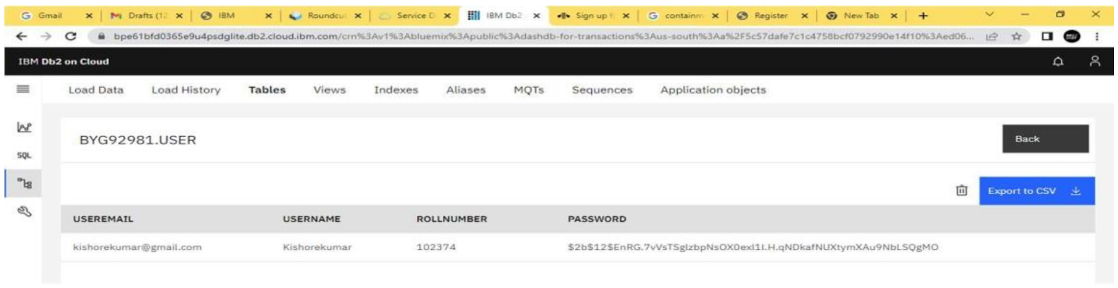
Activate Windows
Go to Settings to activate Windows.

31°C Mostly sunny 11:55 AM 10/18/2022


Login
file:///C:/Users/RD/Desktop/mohan'/login.html
Login
Email
Password
Login
{{success}}
{{error}}
Don't have an account? Register
Activate Windows
Go to Settings to activate Windows.
31°C Mostly sunny
11:52 AM
10/18/2022



Database:



BYG92981.USER

USEREMAIL	USERNAME	ROLLNUMBER	PASSWORD
kishorekumar@gmail.com	Kishorekumar	102374	$2b$12$EnRG.7vVsTSglzbpNsOX0exl1I.H.qNDkafNUXtymXAu9NbLSQgMO