1)Create user table with user with email, user name, roll number, password:

```
From flask import Flask
From flask_mail import Mail, Message

App = Flask(__name__)
Mail= Mail(app)

App.config['MAIL_SERVER']='smtp.gmail.com'
App.config['MAIL_PORT'] = 465
App.config['MAIL_USERNAME'] = 'yourId@gmail.com'
App.config['MAIL_PASSWORD'] = '*****'
App.config['MAIL_USE_TLS'] = False
App.config['MAIL_USE_SSL'] = True
Mail = Mail(app)

@app.route("/")
Def index():
Msg = Message('Hello', sender = 'yourId@gmail.com', recipients = ['someone1@gmail.com'])
Msg.body = "Hello Flask message sent from Flask-Mail"
Mail.send(msg)
  Return "Sent"

If __name__ == '__main__':
App.run(debug = True)
```

2)PERFORME UPDATE & DELETE QUERIES WITH USER TABLE:

```
From flask import Flask,render_template,request,redirect
From models import db,userModel

App = Flask(__name__)

App.config[‘SQLALCHEMY_DATABASE_URI’] = ‘sqlite:///data.db’
App.config[‘SQLALCHEMY_TRACK_MODIFICATIONS’] = False
Db.init_app(app)

//Update user

App.route(‘/data/<int:id>/update’,methods = [‘GET’,’POST’])
Def update(id):
   Employee = UserModel.query.filter_by(User_id=id).first()
   If request.method == ‘POST’:
      If user:
Db.session.delete(user)
Db.session.commit()
         Name = request.form[‘name’]
         Age = request.form[‘age’]
         Position = request.form[‘position’]
User = UseeModel(Usee_id=id, name=name, age=age, position = position)
Db.session.add(User)
Db.session.commit()
         Return redirect(f’/data/{id}’)
      Return f”Userwith id = {id} Does nit exist”

   Return render_template(‘update.html’, User= User)
```

```
// DELETE USER
@app.route('/data/<int:id>/delete', methods=['GET','POST'])
Def delete(id):
USER= UserModel.query.filter_by(User_id=id).first()
   If request.method == 'POST':
      If User:
Db.session.delete(User)
Db.session.commit()
         Return redirect('/data')
      Abort(404)

   Return render_template('delete.flask')

App.run(host='localhost', port=5000)
```

3) CONNECT PYTHON CODE TO db2:

```
db2id = { // service credential dictionary here //}
api = "/dbapi/v3"
host = db2id['https_url']+api
userinfo = {"userid":db2id['username'],"password":db2id['password']}
service = '/auth/tokens'
r = requests.post(host+service,json=userinfo)
access_token = r.json()['token']
auth_header = {"Authorization": "Bearer "+access_token}
```

3)CREATE A FLASK REGISTRATION & LOG IN PAGE, Welcome pagr:

```
From flask import Flask, render_template, request, redirect, url_for, session

From flask_mysqldb import MySQL

Import MySQLdb.cursors

Import re



App = Flask(__name__)



App.secret_key = ‘your secret key’



App.config[‘MYSQL_HOST’] = ‘localhost’

App.config[‘MYSQL_USER’] = ‘root’

App.config[‘MYSQL_PASSWORD’] = ‘your password’

App.config[‘MYSQL_DB’] = ‘geeklogin’
```

```
Mysql = MySQL(app)


@app.route('/')

@app.route('/login', methods =['GET', 'POST'])

Def login():

Msg = ''

   If request.method == 'POST' and 'username' in request.form and 'password' in request.form:

      Username = request.form['username']

      Password = request.form['password']

      Cursor = mysql.connection.cursor(MySQLdb.cursors.DictCursor)

Cursor.execute('SELECT * FROM accounts WHERE username = % s AND password = % s',
(username, password, ))

      Account = cursor.fetchone()

      If account:

         Session['loggedin'] = True

         Session['id'] = account['id']
```

```
        Session['username'] = account['username']
Msg = 'Logged in successfully !'
        Return render_template('index.html', msg = msg)
      Else:
Msg = 'Incorrect username / password !'
   Return render_template('login.html', msg = msg)

@app.route('/logout')
Def logout():
Session.pop('loggedin', None)
Session.pop('id', None)
Session.pop('username', None)
   Return redirect(url_for('login'))

@app.route('/register', methods =['GET', 'POST'])
```

```
Def register():

Msg = ''

    If request.method == 'POST' and 'username' in request.form and 'password' in request.form and
'email' in request.form :

        Username = request.form['username']

        Password = request.form['password']

        Email = request.form['email']

        Cursor = mysql.connection.cursor(MySQLdb.cursors.DictCursor)

Cursor.execute('SELECT * FROM accounts WHERE username = % s', (username, ))

        Account = cursor.fetchone()

        If account:

Msg = 'Account already exists !'

Elif not re.match(r'[^@]+@[^@]+\.[^@]+', email):

Msg = 'Invalid email address !'

Elif not re.match(r'[A-Za-z0-9]+', username):

Msg = 'Username must contain only characters and numbers !'
```

Elif not username or not password or not email:

Msg = ‘Please fill out the form !’

Else:

Cursor.execute(‘INSERT INTO accounts VALUES (NULL, % s, % s, % s)’, (username, password, email,))

Mysql.connection.commit()

Msg = ‘You have successfully registered !’

Elifrequest.method == ‘POST’:

Msg = ‘Please fill out the form !’

Return render_template(‘register.html’, msg = msg)