

Assignment Number	3
Assignment Date	22 september 2022
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Maximum marks	2 MARKS

QUESTIONS:

1. Flask-api-main
2. Flask-blog-with-db-main
3. Flask-with-ibm-cloud-object-storage-main
4. Flask-with-ibm-db2-main

Solution:

1. Flask-api-main

```
from flask import Flask, request

app = Flask(__name__)

food_items = { "1": "rice",
               "2": "beans",
               "3": "yam",
               "4": "plantain",
               "5": "potatoes",
               "6": "wheat"
             }

@app.route("/api")
def index():
    return "Hello form Flask API Server"

@app.route('/data', methods = ['POST', 'GET'])
def api():
    if request.method == 'GET':
        return food_items

    if request.method == 'POST':
```

```

    data = request.json
    food_items.update(data)
    return "Data is inserted"

@app.route("/data/<id>", methods=["PUT"])
def update(id):
    data = request.form['item']
    food_items[str(id)]=data
    return "Data updated"

@app.route("/data/<id>", methods=["DELETE"])
def delete(id):
    food_items.pop(str(id))
    return "Data Deleted"

```

## 2.Flask-blog-with-db-main

- post.html

```

<title>Posts</title>

<h2>Create New Blog Post:</h2>
<form action='/posts' method='POST'>
    Title: <br>
    <input type='text' name='title' id='title' class="form-control">
    <br>
    Author: <br>
    <input type='text' name='author' id='author' class="form-control">
    <br>
    Post: <br>
    <input type='text' name='content' id='content' class="form-control">
    <br>
    <input type='submit' value='Post' class="btn btn-success col-sm-3">
</form>
<hr>

<h2>{{ post.title }}</h2>

```

```
<h3>By: {{ post.author }}</h3>
```

```
<h3>By: N/A</h3>
```

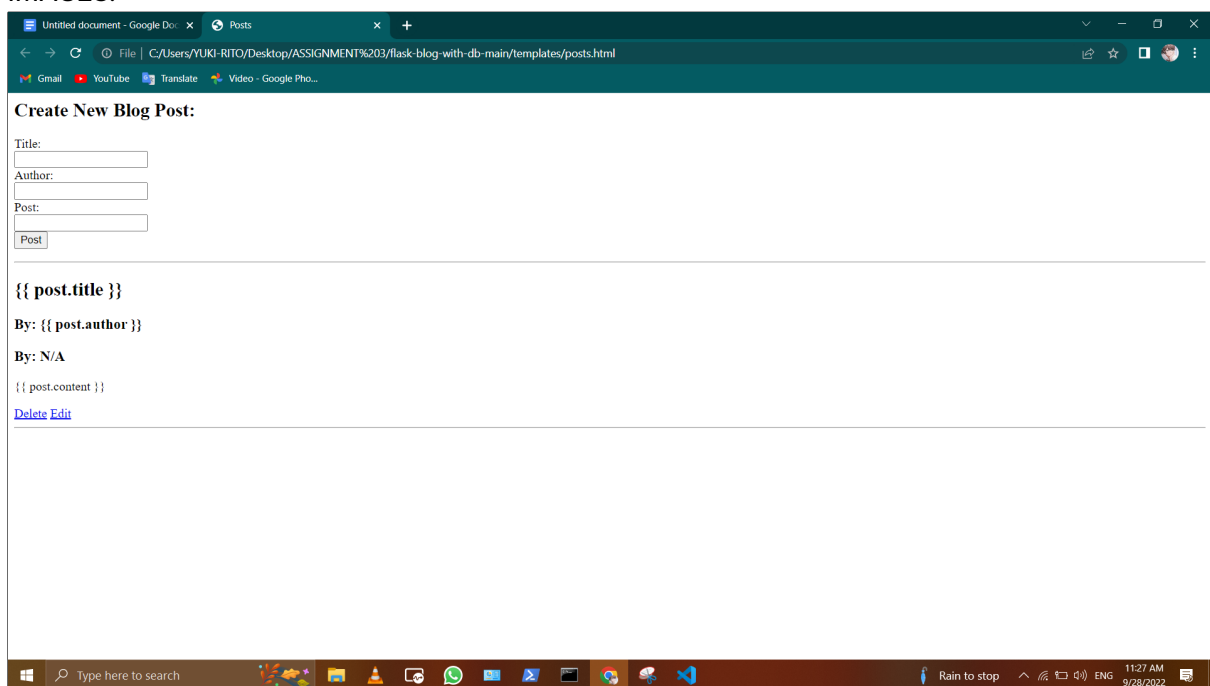
```
<p>{{ post.content }}</p>
```

```
<a href='/posts/delete/{{post.id}}'>Delete</a>
```

```
<a href='/posts/edit/{{post.id}}'>Edit</a>
```

```
<hr>
```

## IMAGES:



- Index.html

```
<title>Home</title>
```

```
<h1>Home Page</h1>
```

```
<hr>
```

```
<h2>{YUKI RITO}</h2>
```

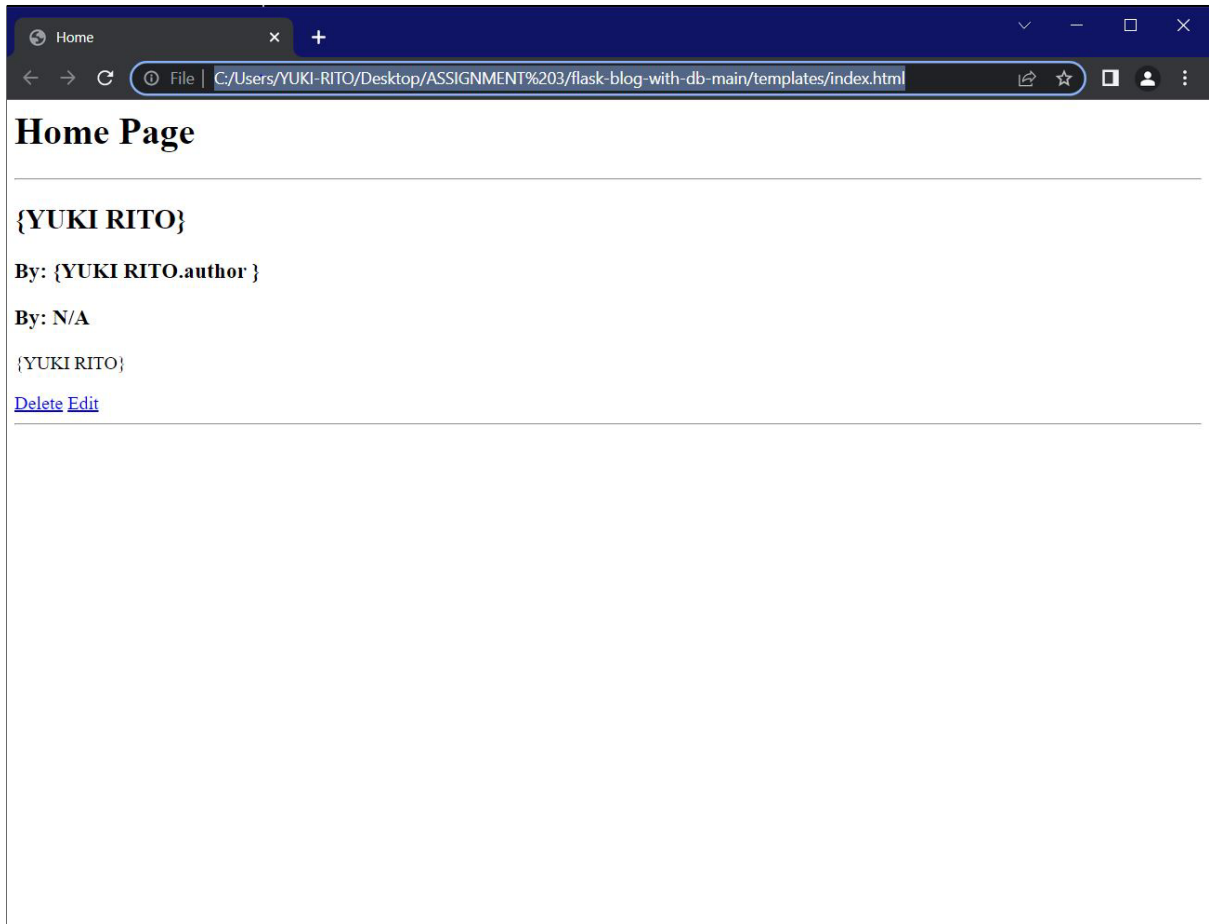
```
<h3>By: {YUKI RITO.author }</h3>
```

```
<h3>By: N/A</h3>
```

```
<p>{YUKI RITO}</p>
```

```
<a href='/posts/delete/{{post.id}}'>Delete</a>
<a href='/posts/edit/{{post.id}}'>Edit</a>
<hr>
```

IMAGE:



- EDIT.html

```
<title>Edit Post</title>

<h1>YUKI RITO</h1>

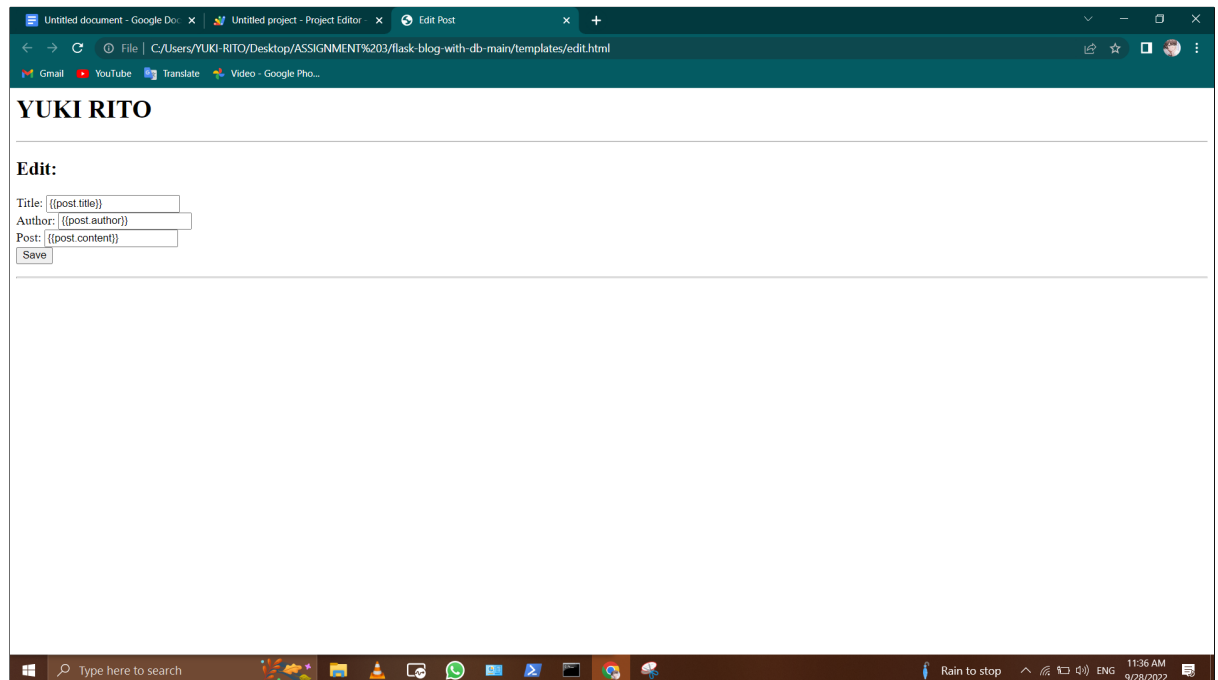
<hr>
<h2>Edit:</h2>
<form action='/posts/edit/{{post.id}}' method='POST'>
  Title: <input type='text' name='title' id='title' value="{{post.title}}">
  <br>
  Author: <input type='text' name='author' id='author' value="{{post.author}}">
```

```

<br>
Post: <input type='text' name='content' id='content' value="{{post.content}}">
<br>
<input type='submit' value='Save'>
</form>
<hr>

```

IMAGE:



- Base.html

```

<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <meta http-equiv="X-UA-Compatible" content="ie=edge">
  <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/css/bootstrap.min.css"
rel="stylesheet" integrity="sha384-
EVSTQN3/azprG1Anm3QDgpJLIm9Nao0Yz1ztcQTWfSpd3yD65VohhpuuCOmLASjC"
crossorigin="anonymous">
  <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/js/bootstrap.bundle.min.js"
integrity="sha384-
MrcW6ZMFYlzcLA8Nl+NtUVF0sA7MsXsP1UyJoMp4YLEuNSfAP+JcXn/tWtIaxVXM"

```

```

crossorigin="anonymous"></script>
    <!-- <link rel="stylesheet" href="{{ url_for('static', filename='css/main.css') }}" -->
</head>
<body>

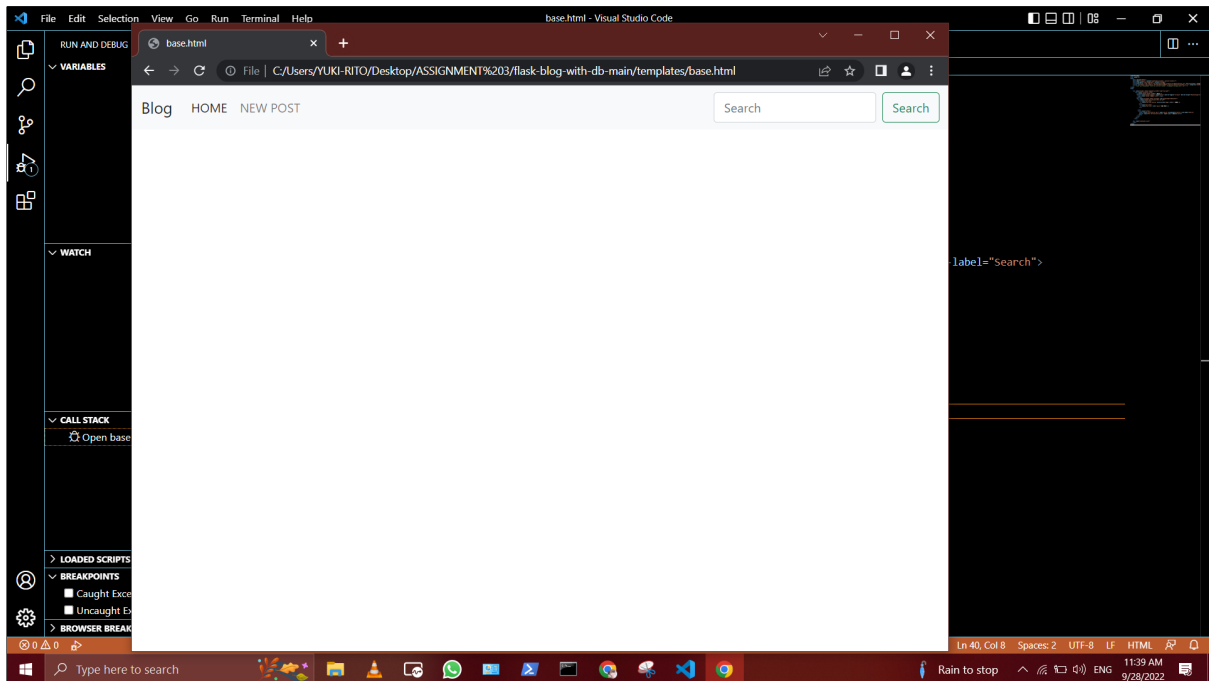
    <nav class="navbar navbar-expand-lg navbar-light bg-light">
        <div class="container-fluid">
            <a class="navbar-brand" href="/">Blog</a>
            <button class="navbar-toggler" type="button" data-bs-toggle="collapse" data-bs-
target="#navbarSupportedContent" aria-controls="navbarSupportedContent" aria-
expanded="false" aria-label="Toggle navigation">
                <span class="navbar-toggler-icon"></span>
            </button>
            <div class="collapse navbar-collapse" id="navbarSupportedContent">
                <ul class="navbar-nav me-auto mb-2 mb-lg-0">
                    <li class="nav-item">
                        <a class="nav-link active" aria-current="page" href="/">HOME</a>
                    </li>
                    <li class="nav-item">
                        <a class="nav-link" href="/posts">NEW POST</a>
                    </li>

                </ul>
                <form class="d-flex">
                    <input class="form-control me-2" type="search" placeholder="Search" aria-
label="Search">
                    <button class="btn btn-outline-success" type="submit">Search</button>
                </form>
            </div>
        </div>
    </nav>

    <div class="container py-5">
    </div>
</body>
</html>

```

IMAGE:



- App.py

```
from flask import Flask, render_template, request, redirect
from flask_sqlalchemy import SQLAlchemy
from datetime import datetime

app = Flask(__name__)
app.config['SQLALCHEMY_DATABASE_URI'] = 'sqlite:///posts.db'
db = SQLAlchemy(app)

class BlogPost(db.Model):
    id = db.Column(db.Integer, primary_key=True)
    title = db.Column(db.String(100), nullable=False)
    content = db.Column(db.Text, nullable=False)
    author = db.Column(db.String(20), nullable=False, default='N/A')
    date_posted = db.Column(db.DateTime, nullable=False, default=datetime.utcnow)

    def __repr__(self):
        return 'Blog post ' + str(self.id)

@app.route('/')
def index():
    all_posts = BlogPost.query.order_by(BlogPost.date_posted).all()
    return render_template('index.html', posts=all_posts)

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

```

if request.method == 'POST':
    post_title = request.form['title']
    post_content = request.form['content']
    post_author = request.form['author']
    new_post = BlogPost(title=post_title, content=post_content, author=post_author)
    db.session.add(new_post)
    db.session.commit()
    return redirect('/posts')
else:
    all_posts = BlogPost.query.order_by(BlogPost.date_posted).all()
    return render_template('posts.html', posts=all_posts)

@app.route('/posts/delete/<int:id>')
def delete(id):
    post = BlogPost.query.get_or_404(id)
    db.session.delete(post)
    db.session.commit()
    return redirect('/posts')

@app.route('/posts/edit/<int:id>', methods=['GET', 'POST'])
def edit(id):

    post = BlogPost.query.get_or_404(id)

    if request.method == 'POST':
        post.title = request.form['title']
        post.author = request.form['author']
        post.content = request.form['content']
        db.session.commit()
        return redirect('/posts')
    else:
        return render_template('edit.html', post=post)

if __name__ == "__main__":
    app.run(debug=True)

```

### 3.Flask-with-ibm-cloud-object-storage-main

- App.py

```

from flask import Flask, redirect, url_for, render_template, request

```



```

import ibm_boto3
from ibm_botocore.client import Config, ClientError

COS_ENDPOINT="https://s3.jp-tok.cloud-object-storage.appdomain.cloud"
COS_API_KEY_ID=" "
COS_INSTANCE_CRN=""

# Create resource https://s3.ap.cloud-object-storage.appdomain.cloud
cos = ibm_boto3.resource("s3",
    ibm_api_key_id=COS_API_KEY_ID,
    ibm_service_instance_id=COS_INSTANCE_CRN,
    config=Config(signature_version="oauth"),
    endpoint_url=COS_ENDPOINT
)

app=Flask(__name__)

def get_item(bucket_name, item_name):
    print("Retrieving item from bucket: {0}, key: {1}".format(bucket_name, item_name))
    try:
        file = cos.Object(bucket_name, item_name).get()

        print("File Contents: {0}".format(file["Body"].read()))
    except ClientError as be:
        print("CLIENT ERROR: {0}\n".format(be))
    except Exception as e:
        print("Unable to retrieve file contents: {0}".format(e))

def get_bucket_contents(bucket_name):
    print("Retrieving bucket contents from: {0}".format(bucket_name))
    try:
        files = cos.Bucket(bucket_name).objects.all()
        files_names = []
        for file in files:
            files_names.append(file.key)
            print("Item: {0} ({1} bytes)".format(file.key, file.size))
        return files_names

```

```

except ClientError as be:
    print("CLIENT ERROR: {0}\n".format(be))
except Exception as e:
    print("Unable to retrieve bucket contents: {0}".format(e))

def delete_item(bucket_name, object_name):
    try:
        cos.delete_object(Bucket=bucket_name, Key=object_name)
        print("Item: {0} deleted!\n".format(object_name))
    except ClientError as be:
        print("CLIENT ERROR: {0}\n".format(be))
    except Exception as e:
        print("Unable to delete object: {0}".format(e))

def multi_part_upload(bucket_name, item_name, file_path):
    try:
        print("Starting file transfer for {0} to bucket: {1}\n".format(item_name, bucket_name))
        # set 5 MB chunks
        part_size = 1024 * 1024 * 5

        # set threshold to 15 MB
        file_threshold = 1024 * 1024 * 15

        # set the transfer threshold and chunk size
        transfer_config = ibm_boto3.s3.transfer.TransferConfig(
            multipart_threshold=file_threshold,
            multipart_chunksize=part_size
        )

        # the upload_fileobj method will automatically execute a multi-part upload
        # in 5 MB chunks for all files over 15 MB
        with open(file_path, "rb") as file_data:
            cos.Object(bucket_name, item_name).upload_fileobj(
                Fileobj=file_data,
                Config=transfer_config
            )

        print("Transfer for {0} Complete!\n".format(item_name))
    except ClientError as be:

```

```

        print("CLIENT ERROR: {0}\n".format(be))
    except Exception as e:
        print("Unable to complete multi-part upload: {0}".format(e))

@app.route('/')
def index():
    files = get_bucket_contents('flaskapp123')
    return render_template('index.html', files = files)

@app.route('/deletefile', methods = ['GET', 'POST'])
def deletefile():
    if request.method == 'POST':
        bucket=request.form['bucket']
        name_file=request.form['filename']

        delete_item(bucket,name_file)
        return 'file deleted successfully'

    if request.method == 'GET':
        return render_template('delete.html')

@app.route('/uploader', methods = ['GET', 'POST'])
def upload():
    if request.method == 'POST':
        bucket=request.form['bucket']
        name_file=request.form['filename']
        f = request.files['file']
        multi_part_upload(bucket,name_file,f.filename)
        return 'file uploaded successfully <a href="/">GO to Home</a>'

    if request.method == 'GET':
        return render_template('upload.html')

if __name__ == '__main__':
    app.run(host='0.0.0.0',port=8080,debug=True)

```

- DELETE.html

```
<html>
  <body>

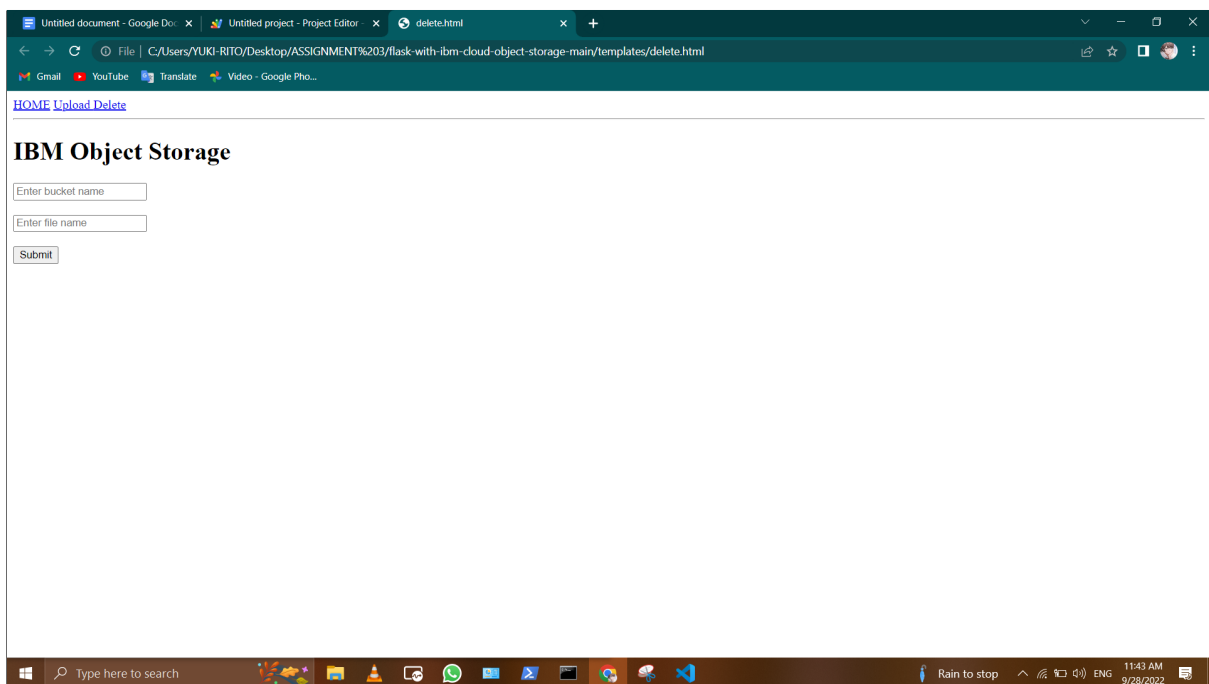
    <a href="/">HOME</a>
    <a href="/uploader">Upload </a>
    <a href="/deletefile">Delete </a>
    <br><hr>

<h1>IBM Object Storage</h1>

    <form action = "/deletefile" method = "POST" >

      <input type = "text" placeholder="Enter bucket name" name = "bucket" />
      <br>
      <br>
      <input type = "text" placeholder="Enter file name" name = "filename" />
      <br>
      <br>
      <input type = "submit"/>
    </form>
  </body>
</html>
```

IMAGE:



- INDEX.HTML

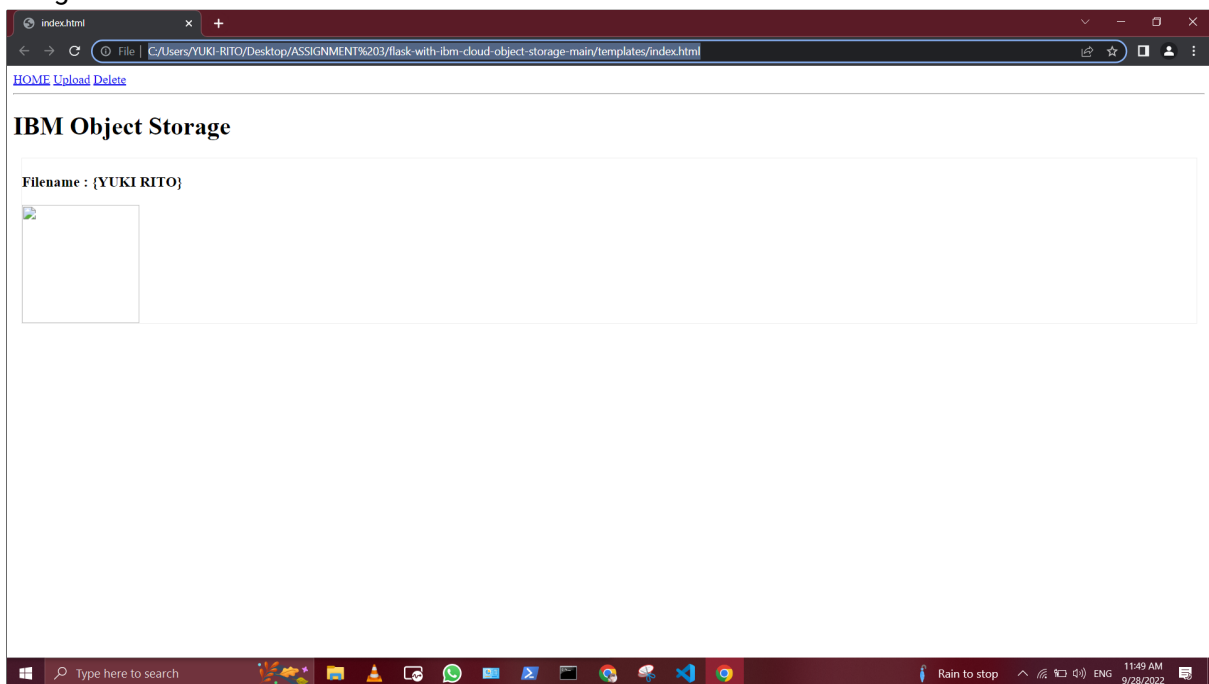
```
<a href="/">HOME</a>
<a href="/uploader">Upload</a>
<a href="/deletefile">Delete</a>
<br><hr>
<h1>IBM Object Storage</h1>

<!doctype html>
<html>
  <body>

    <div style="border: 1px solid #EFEFEF;margin:10px;">
      <h3>Filename : {YUKI RITO} </h3>
      </td>
    </div>

  </body>
</html>
```

Image:



- UPLOAD .HTML

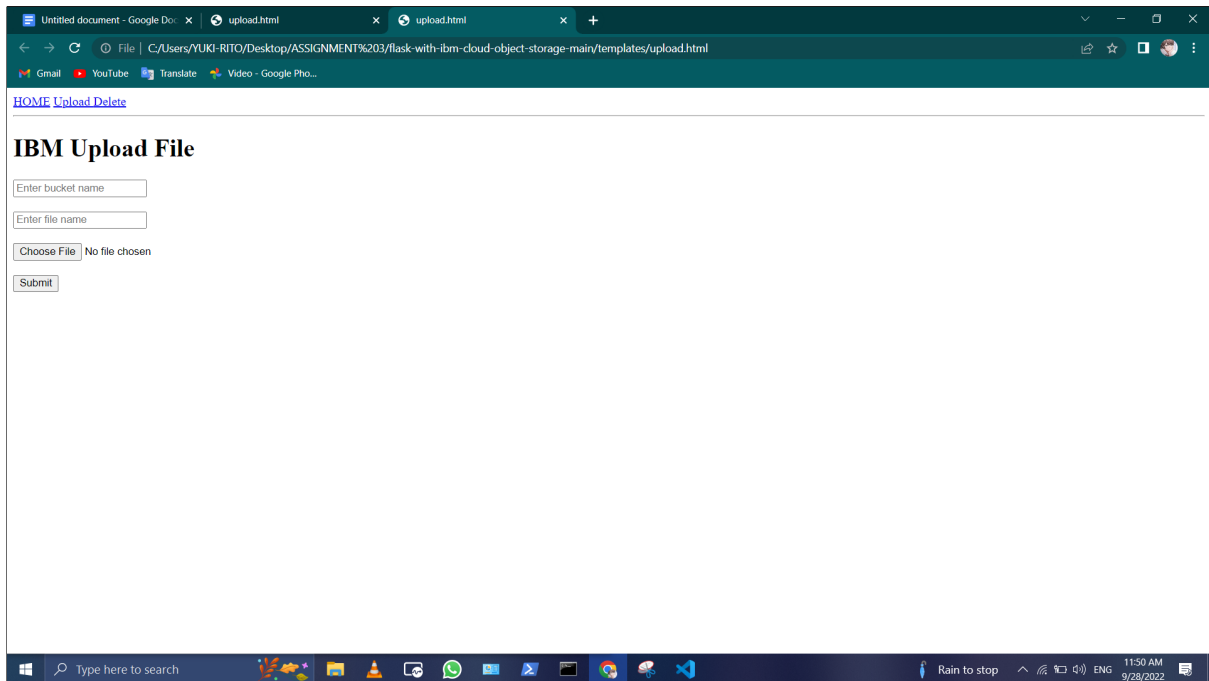
```
<html>
  <body>

  <a href="/">HOME</a>
  <a href="/uploader">Upload </a>
  <a href="/deletefile">Delete </a>
  <br><hr>

  <h1>IBM Upload File</h1>

  <form action = "/uploader" method = "POST"
    enctype = "multipart/form-data">
    <input type = "text" placeholder="Enter bucket name" name = "bucket" />
    <br>
    <br>
    <input type = "text" placeholder="Enter file name" name = "filename" />
    <br>
    <br>
    <input type = "file" name = "file" />
    <br>
    <br>
    <input type = "submit"/>
  </form>
</body>
</html>
```

IMAGE:



#### 4. Flask-with-ibm-db2-main

- APP.py

```
from turtle import st
from flask import Flask, render_template, request, redirect, url_for, session
from markupsafe import escape

import ibm_db
conn = ibm_db.connect("DATABASE=<databasename>;HOSTNAME=<your-hostname>;PORT=<portnumber>;SECURITY=SSL;SSLServerCertificate=DigiCertGlobalRootCA.crt;UID=<username>;PWD=<password>","")

app = Flask(__name__)

@app.route('/')
def home():
    return render_template('home.html')

@app.route('/addstudent')
def new_student():
    return render_template('add_student.html')

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

```

def addrec():
    if request.method == 'POST':

        name = request.form['name']
        address = request.form['address']
        city = request.form['city']
        pin = request.form['pin']

        sql = "SELECT * FROM students WHERE name =?"
        stmt = ibm_db.prepare(conn, sql)
        ibm_db.bind_param(stmt,1,name)
        ibm_db.execute(stmt)
        account = ibm_db.fetch_assoc(stmt)

        if account:
            return render_template('list.html', msg="You are already a member, please login using your
details")
        else:
            insert_sql = "INSERT INTO students VALUES (?,?,,?)"
            prep_stmt = ibm_db.prepare(conn, insert_sql)
            ibm_db.bind_param(prepare_stmt, 1, name)
            ibm_db.bind_param(prepare_stmt, 2, address)
            ibm_db.bind_param(prepare_stmt, 3, city)
            ibm_db.bind_param(prepare_stmt, 4, pin)
            ibm_db.execute(prepare_stmt)

            return render_template('home.html', msg="Student Data saved successfully..")

@app.route('/list')
def list():
    students = []
    sql = "SELECT * FROM Students"
    stmt = ibm_db.exec_immediate(conn, sql)
    dictionary = ibm_db.fetch_both(stmt)
    while dictionary != False:
        # print ("The Name is : ", dictionary)
        students.append(dictionary)
        dictionary = ibm_db.fetch_both(stmt)

    if students:
        return render_template("list.html", students = students)

```



```

@app.route('/delete/<name>')
def delete(name):
    sql = f"SELECT * FROM Students WHERE name='{escape(name)}'"
    print(sql)
    stmt = ibm_db.exec_immediate(conn, sql)
    student = ibm_db.fetch_row(stmt)
    print ("The Name is : ", student)
    if student:
        sql = f"DELETE FROM Students WHERE name='{escape(name)}'"
        print(sql)
        stmt = ibm_db.exec_immediate(conn, sql)

    students = []
    sql = "SELECT * FROM Students"
    stmt = ibm_db.exec_immediate(conn, sql)
    dictionary = ibm_db.fetch_both(stmt)
    while dictionary != False:
        students.append(dictionary)
        dictionary = ibm_db.fetch_both(stmt)
    if students:
        return render_template("list.html", students = students, msg="Delete successfully")

# # while student != False:
# #     print ("The Name is : ", student)

# print(student)
return "success..."

# @app.route('/posts/edit/<int:id>', methods=['GET', 'POST'])
# def edit(id):

#     post = BlogPost.query.get_or_404(id)

#     if request.method == 'POST':
#         post.title = request.form['title']
#         post.author = request.form['author']
#         post.content = request.form['content']
#         db.session.commit()
#         return redirect('/posts')
#     else:

```

```
# return render_template('edit.html', post=post)
```

- ADD\_STUDENT .HTML

```
<a href="/">HOME</a>
<a href="/addstudent">Add New Student</a>
<a href="/list">List Student</a>
<hr>

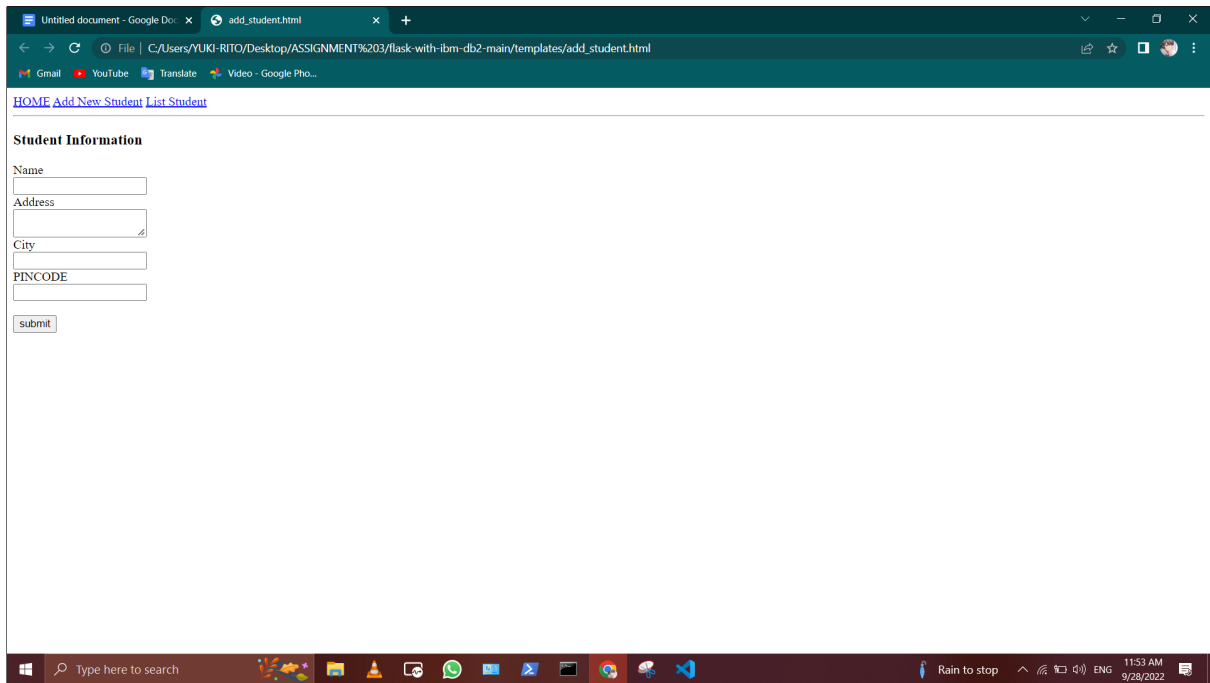
<form action = "{{ url_for('addrec') }}" method = "POST">
  <h3>Student Information</h3>
  Name<br>
  <input type = "text" name="name" /></br>

  Address<br>
  <textarea name="address" ></textarea><br>

  City<br>
  <input type = "text" name="city" /><br>

  PINCODE<br>
  <input type = "text" name="pin" /><br><br>
  <input type = "submit" value = "submit" /><br>
</form>
```

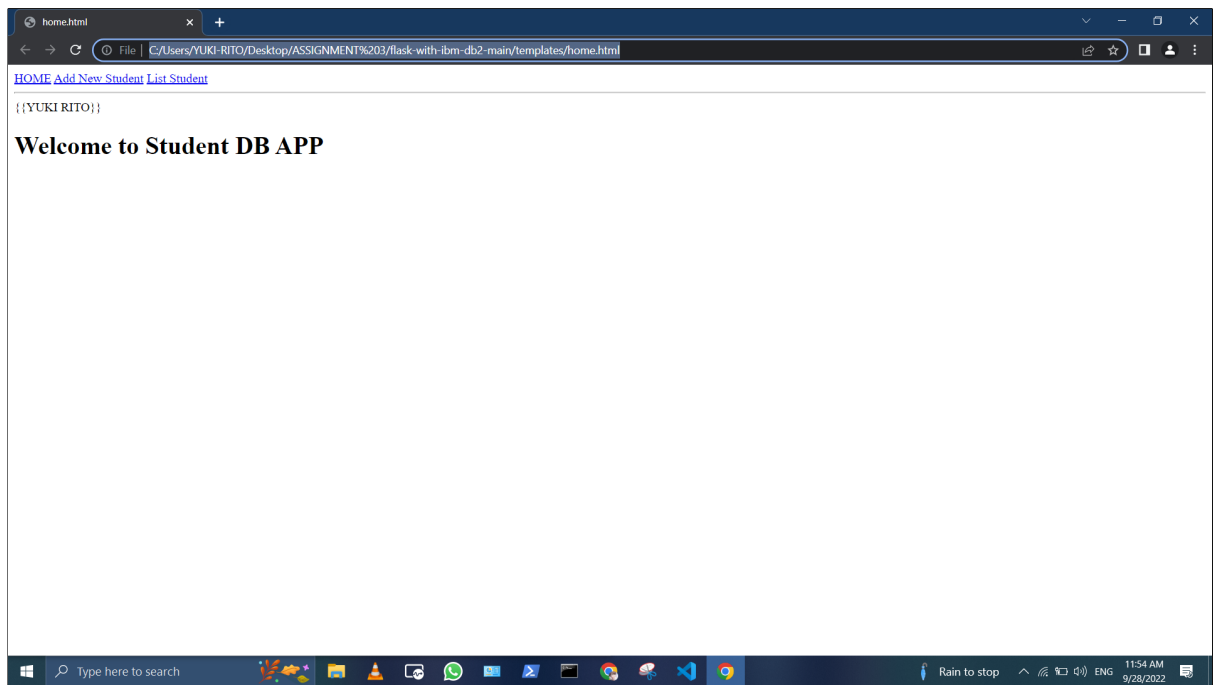
IMAGE:



- HOME.HTML

- 
- `<a href="/">HOME</a>`
- `<a href="/addstudent">Add New Student</a>`
- `<a href="/list">List Student</a>`
- `<hr>`
- 
- `{{YUKI RITO}}`
- 
- `<h1>Welcome to Student DB APP</h1>`

IMAGE:



- List.html

```
<!doctype html>
<html>
  <body>

    <a href="/">HOME</a>
    <a href="/addstudent">Add New Student</a>
    <a href="/list">List Student</a>
    <br><hr>

    {DATA ENTRY}

    <table border = 1>
      <thead>
        <td>Name</td>
        <td>Address</td>
        <td>city</td>
        <td>Pincode</td>
        <td></td>
      </thead>

      <tr>
        <td>YUKI RITO</td>
        <td>ANAICUT</td>
```

```

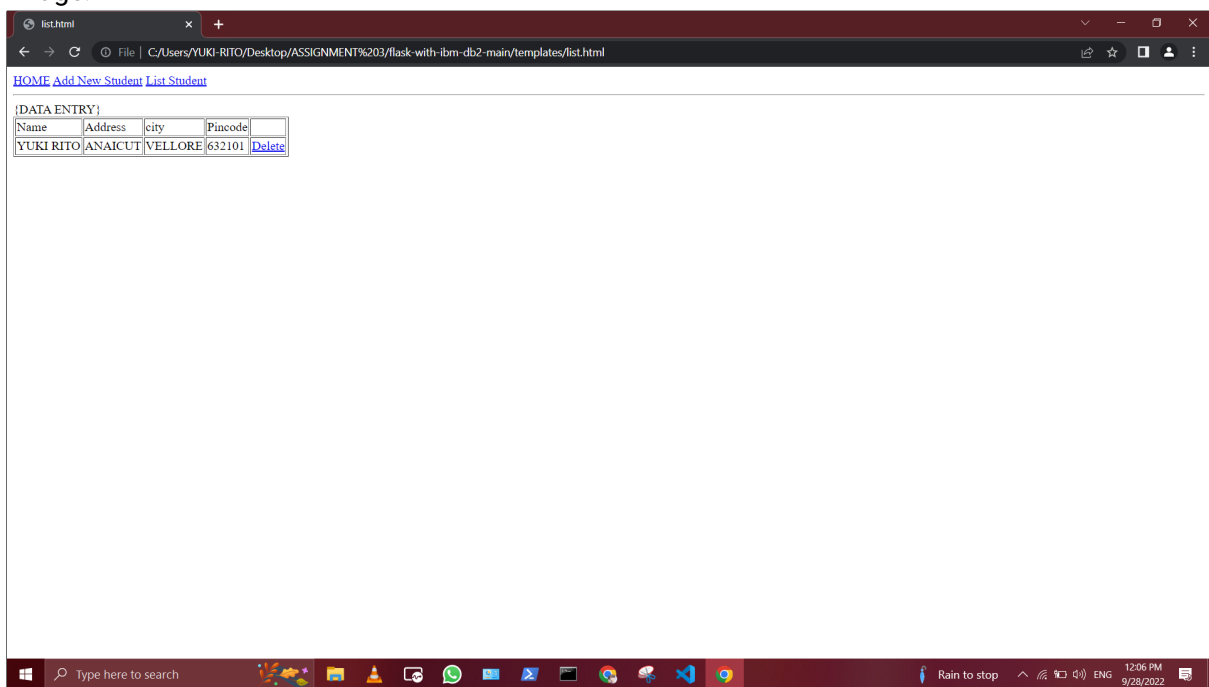
        <td>VELLORE</td>
        <td>632101</td>
        <td><a href="/delete/{{row['NAME']}}">Delete</a></td>
    </tr>

</table>

</body>
</html>

```

Image:



- RESULT.html

```

<!doctype html>
<html>
    <body>

        <h2><a href = "/">Back to home page</a></h2>
    </body>
</html>

```

IMAGE:

