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| Assignment Date | 3 OCTOBER 2022 |
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| Student Roll Number | 721219104036 |
| Maximum Marks | 2Marks |

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="erYOo-lq7dwN0LigQFZUw9ZhSjUSZPeUrZl8VaIOZwoC"

COS\_INSTANCE\_CRN="crn:v1:bluemix:public:cloud-object-storage:global:a/11d1eefda09948f1a3075e4fab8e60f6:712106a7-5039-4a5e-8c83-c72c3638249a::"

# 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 threadhold 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('flaskbucket')

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)

Upload.html

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta http-equiv="X-UA-Compatible" content="IE=edge">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

<title>Upload Files</title>

<link rel="stylesheet" href="{{url\_for('static',filename='css/style.css')}}">

</head>

<body>

<div class="section">

<div class="menu">

<ul class="menu-list">

<li><a href="{{url\_for('index')}}">Index</a></li>

<li><a href="{{url\_for('upload')}}">Upload</a></li>

<li><a href="{{url\_for('deletefile')}}">Delete</a></li>

</ul>

</div>

<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 class="file-inp" type="file" name="file" />

<br>

<br>

<input class="btn-submit" type="submit" />

</form>

</div>

</body>

</html>

Index.html

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta http-equiv="X-UA-Compatible" content="IE=edge">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

<title>Home</title>

<link rel="stylesheet" href="{{url\_for('static',filename='css/style.css')}}">

</head>

<body>

<div class="section">

<div class="menu">

<ul class="menu-list">

<li><a href="{{url\_for('index')}}">Index</a></li>

<li><a href="{{url\_for('upload')}}">Upload</a></li>

<li><a href="{{url\_for('deletefile')}}">Delete</a></li>

</ul>

</div>

<hr>

<h1>IBM Object Storage</h1>

<h2>{% for row in files %}</h2>

<div class="content">

<h3>Filename : {{row}} </h3>

<img src="https://bucket-03.s3.jp-tok.cloud-object-storage.appdomain.cloud/{{row}}" width="150px">

</div>

{% endfor %}

</div>

</body>

</html>

Delete.html

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta http-equiv="X-UA-Compatible" content="IE=edge">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

<title>Delete File</title>

<link rel="stylesheet" href="{{url\_for('static',filename='css/style.css')}}">

</head>

<body>

<div class="section">

<div class="menu">

<ul class="menu-list">

<li><a href="{{url\_for('index')}}">Index</a></li>

<li><a href="{{url\_for('upload')}}">Upload</a></li>

<li><a href="{{url\_for('deletefile')}}">Delete</a></li>

</ul>

</div>

<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 class="btn-submit" type="submit" />

</form>

</div>

</body>

</html>

Style.css

\* {

margin: 0;

padding: 0;

color: white;

font-family: Arial, Helvetica, sans-serif;

}

html {

width: 100%;

height: 100vh;

}

body {

width: 100%;

height: 100%;

background-color: rgb(8, 82, 124);

display: flex;

justify-content: center;

}

.section {

width: 30%;

height: fit-content;

display: flex;

flex-direction: column;

/\* border: 1px solid #fff; \*/

box-shadow: 2px 2px 1px 2px rgba(167, 167, 167, 0.644);

border-radius: 2rem;

border-left: 1px solid rgba(255, 255, 255, 0.3);

border-top: 1px solid rgba(255, 255, 255, 0.3);

align-items: center;

padding-bottom: 5rem;

margin-top: 5rem;

}

a {

text-decoration: none;

}

.menu {

margin-top: 2rem;

width: 100%;

height: 3rem;

display: flex;

align-items: center;

/\* background-color: bisque; \*/

justify-content: center;

border-bottom: 2px solid rgba(255, 255, 255, 0.555);

padding-bottom: 2rem;

}

.menu-list {

width: 100%;

list-style-type: none;

text-transform: uppercase;

display: flex;

}

.menu-list li {

width: 100%;

display: flex;

justify-content: space-around;

}

a {

box-shadow: 1px 1px 2px 2px rgba(167, 167, 167, 0.4);

padding: 1rem 1.4rem;

border-radius: 1rem;

}

h1 {

/\* padding-left: 2rem; \*/

margin-top: 1rem;

}

h2 {

margin-top: 1rem;

}

.content {

/\* margin-left: 2rem; \*/

margin-top: 2rem;

}

form {

/\* margin-left: 2rem; \*/

margin-top: 1rem;

}

input {

height: 2.6rem;

width: 18rem;

padding-left: .6rem;

border: none;

border-radius: .4rem;

color: #000;

}

.btn-submit {

width: 5rem;

padding: .2rem;

height: 2rem;

color: rgb(104, 104, 104);

text-transform: uppercase;

}

.file-inp {

width: 15rem;

height: 2rem;

border: none;

}

.btn-submit:hover {

color: #000;

}