

LAB2-2 boto3 with Python

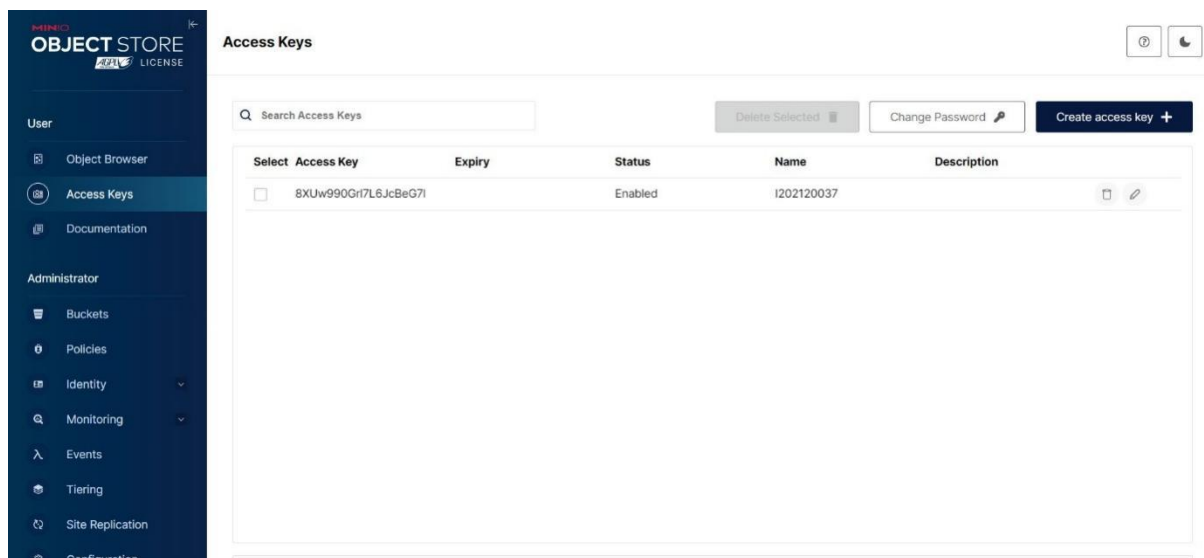
本次实验过程中使用了一下配置：

- Python 3.12
- Vscode
- minIO Server

第一步： 使用以下指令安装 Boto3 和 Python

```
$ git clone https://github.com/boto/boto3.git  
$ cd boto3  
$ py -m pip install -r requirements.txt  
$ py -m pip install -e
```

第二步： 进入 minIO server 创建并保存好 AccessKey 和 SecretKey



第三步：创建 test.py，利用其测试服务端和客户端的连接。其中要把代码段中的 access_key 和 secret_key 修改成与上一步生成的一致。连接成功建立时程序会打印出服务端里的所有桶的名字，如下图所示：

```
C:\Users\pings\Desktop>py -u "C:\Users\pings\Desktop\BigData\python\test.py"
Existing buckets:
    mytest
```

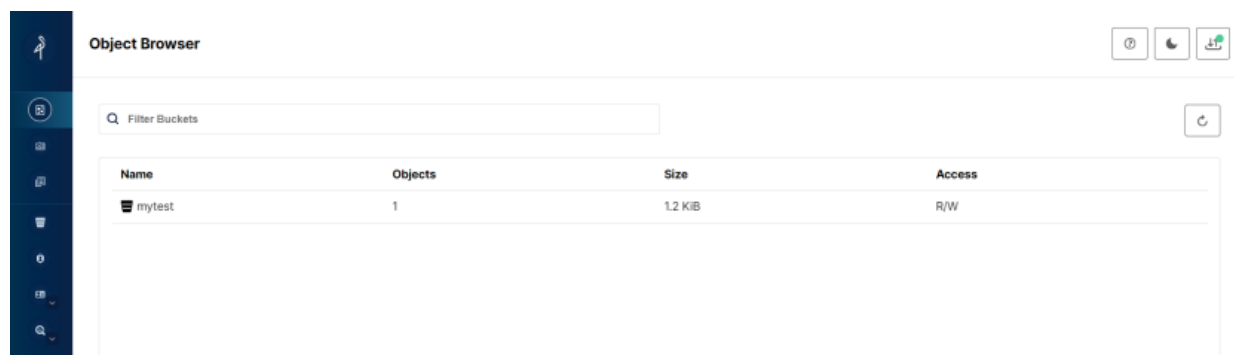
第四步：使用 python 代码对 minIO Server 里的桶和对象进行增删改读操作。

1. 列出所有桶

```
CA: Command Prompt - py -u "C:\Users\pings\Desktop\BigData\pyth...
Microsoft Windows [Version 10.0.19045.4170]
(c) Microsoft Corporation. All rights reserved.

C:\Users\pings>py -u "C:\Users\pings\Desktop\BigData\python\CRUD.py"
1. Create Bucket
2. Read Bucket(List Bucket)
3. Update Object in Bucket
4. Delete Bucket
5. Upload Object
6. Download Object
7. Copy Object
8. Delete Object
0. Exit
Please KeyIn 0~8: 2

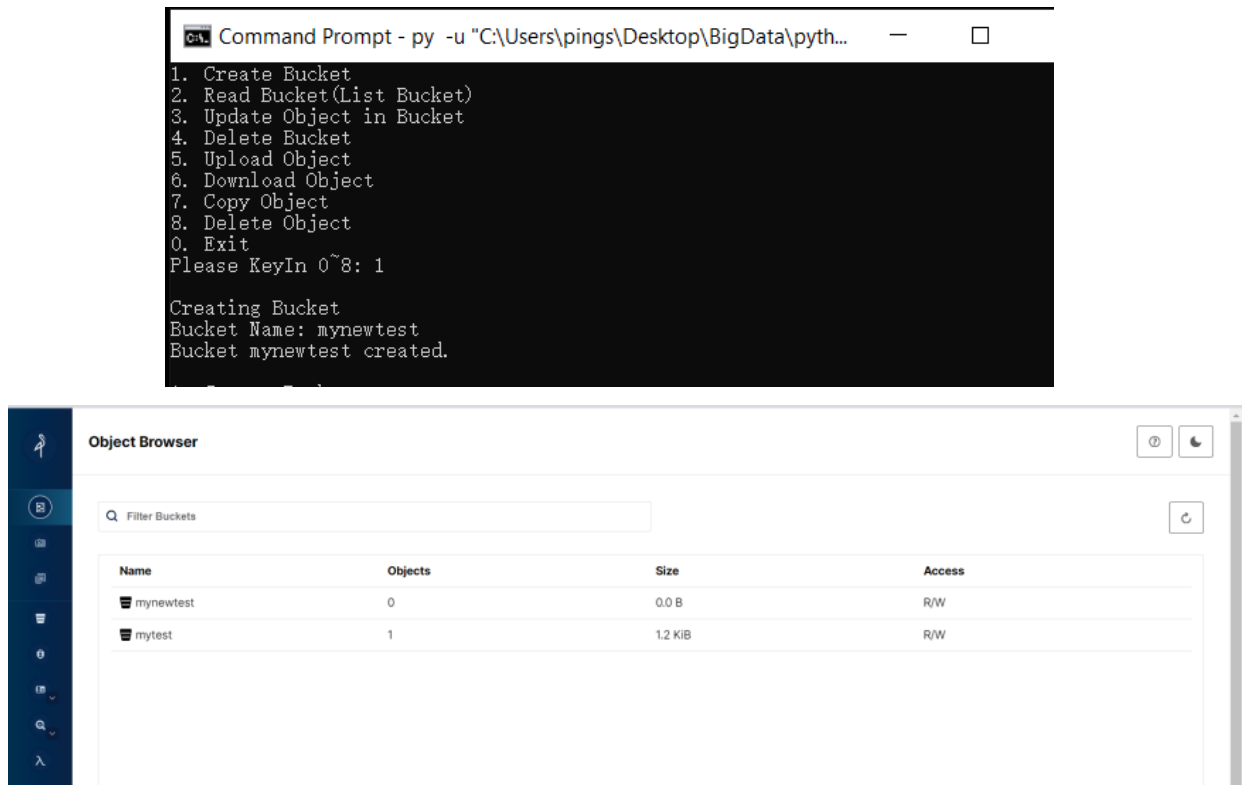
Listing Bucket
Bucket List:
mytest
```



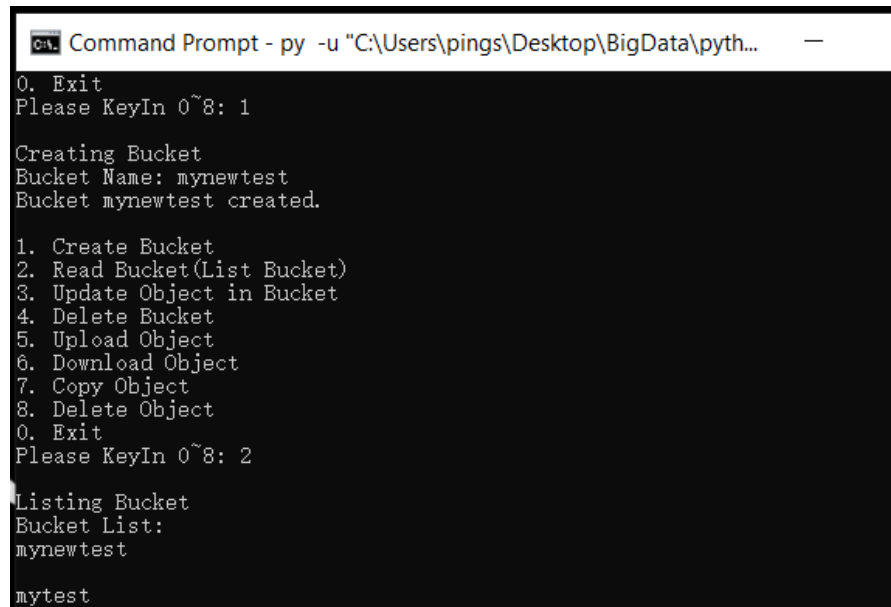
The screenshot shows the minIO Object Browser web interface. On the left is a dark sidebar with navigation icons. The main area has a search bar labeled 'Filter Buckets' and a refresh button. Below is a table with the following data:

Name	Objects	Size	Access
mytest	1	1.2 KiB	R/W

2. 增添新桶:mynewtest



3. 再次列出所有桶



4. 上传 test.txt 文件到 mytest

The screenshot shows a Command Prompt window titled "Command Prompt - py -u \"C:\Users\pings\Desktop\BigData\python\CRUD.py\"". The prompt displays a menu of operations: 1. Create Bucket, 2. Read Bucket(List Bucket), 3. Update Object in Bucket, 4. Delete Bucket, 5. Upload Object, 6. Download Object, 7. Copy Object, 8. Delete Object, 0. Exit. The user enters '5'. The output shows: "Uploading New Object to Bucket", "Bucket Name: mytest", "Object Key: test.txt", "File Path: C:\Users\pings\Desktop\test.txt", and "Object 'test.txt' from 'C:\Users\pings\Desktop\test.txt' uploaded to bucket 'mytest'".

Below the Command Prompt is the "Object Browser" interface for the "mytest" bucket. The bucket was created on "Tue, Mar 26 2024 19:38:32 (GMT+8)" with "Access: PRIVATE" and contains "40.0 B - 2 Objects". The object list shows:

Name	Last Modified	Size
s.txt	Today, 17:42	20.0 B
test.txt	Today, 17:53	20.0 B

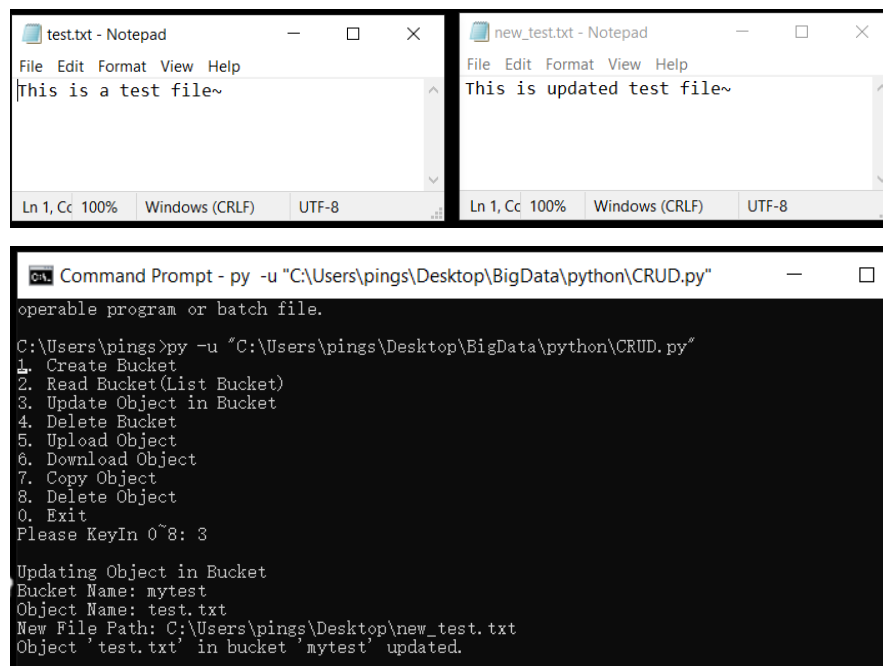
5. 将 mytest 桶中的 test.txt 拷贝到 mynewtest 桶中，并将其命名为 testc.txt

The screenshot shows the Command Prompt window with the same menu. The user enters '7'. The output shows: "Copying Object from Bucket to Bucket", "Source Bucket Name: mytest", "Source Object Key: test.txt", "Destination Bucket Name: mynewtest", "Destination Object Key: testc.txt", and "Object 'test.txt' copied from bucket 'mytest' to bucket 'mynewtest'".

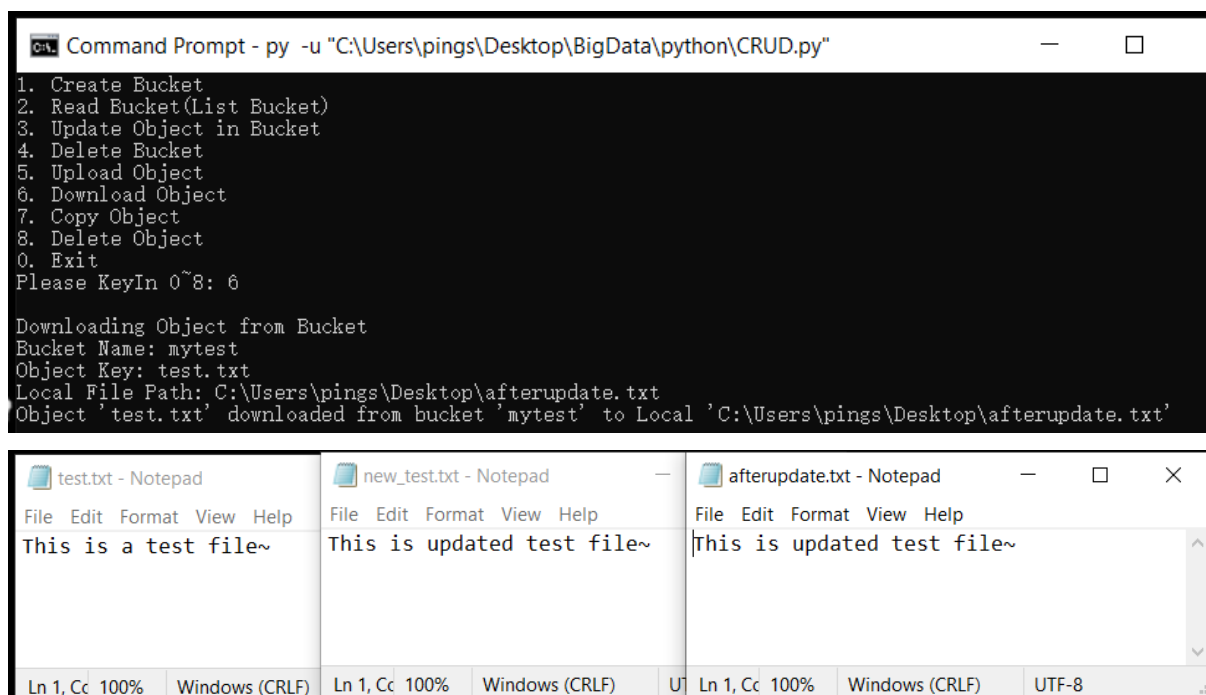
Below the Command Prompt is the "Object Browser" interface for the "mynewtest" bucket. The bucket was created on "Thu, Apr 04 2024 17:46:30 (GMT+8)" with "Access: PRIVATE". The object list shows:

Name	Last Modified	Size
testc.txt	Today, 17:56	20.0 B

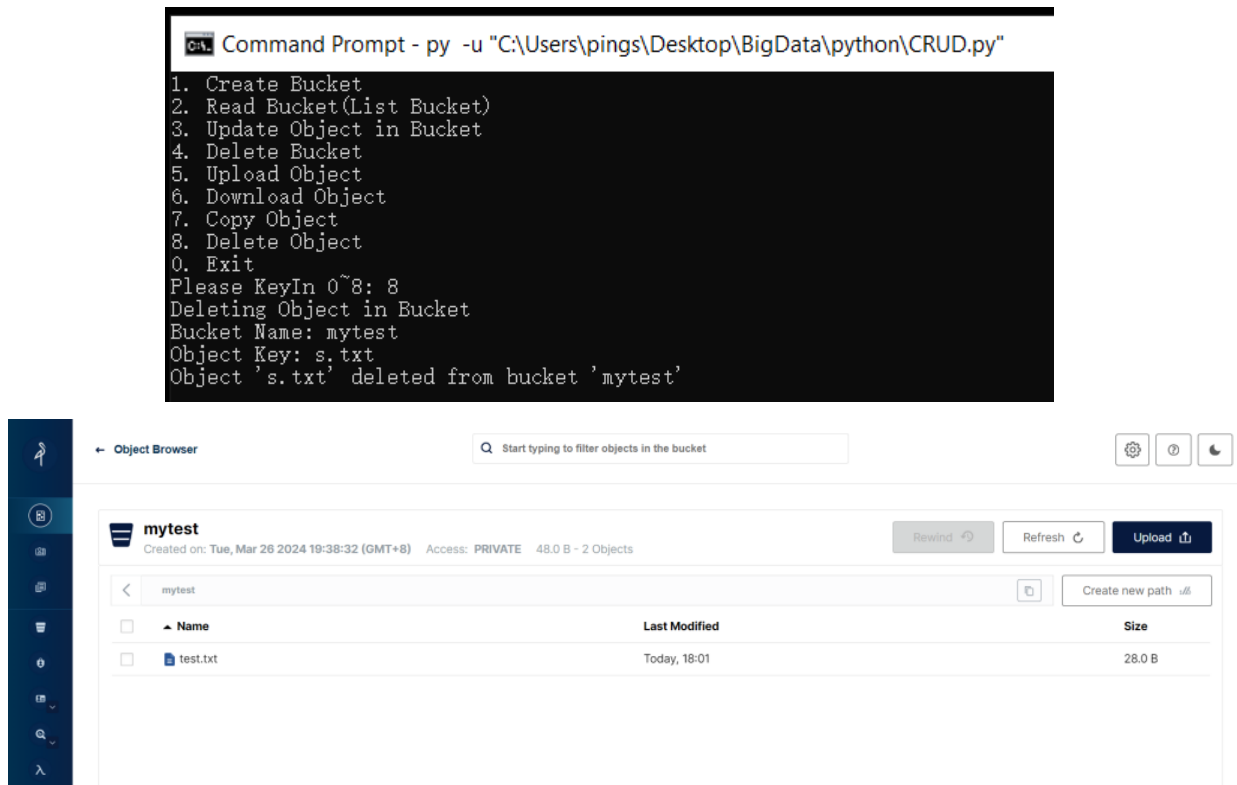
6. 将 mytest 桶中的 test.txt 文件的内容更新成 newtest.txt 文件中的内容
- 两个文本文件的内容



7. 将更新后的 mytest 桶中的 test.txt 对象下载下来并将其命名为 afterupdate.txt 验证是否真的更新成功

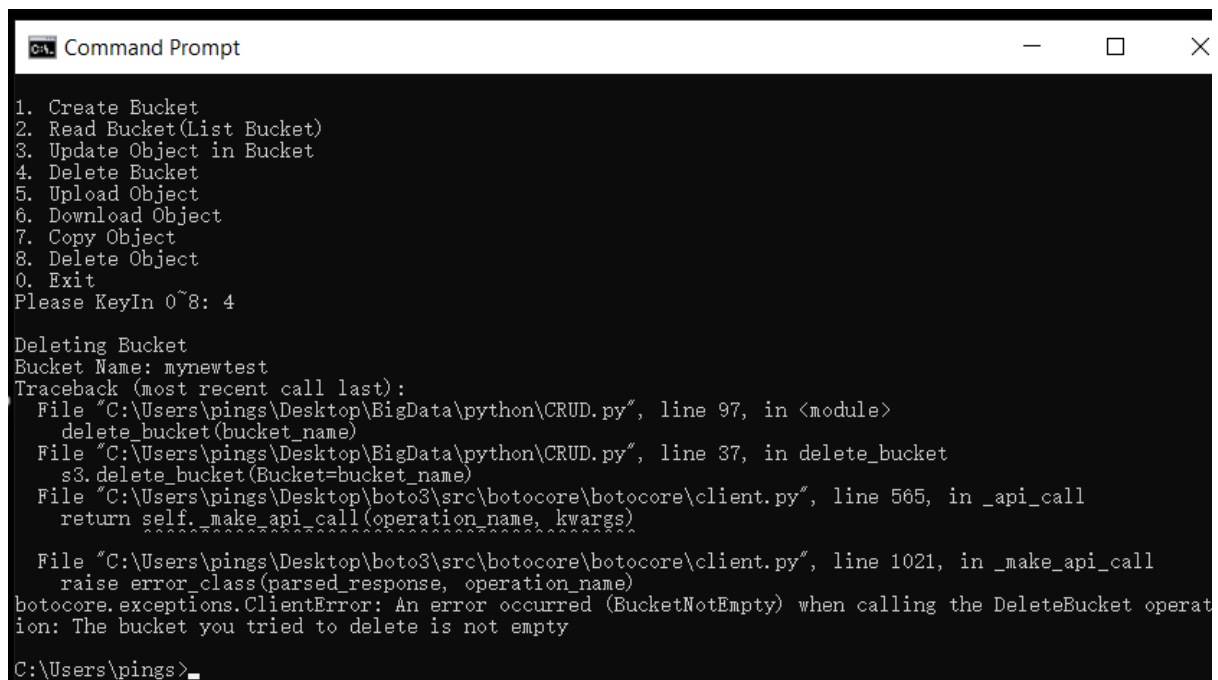


8. 对 mytest 桶中的 s.txt 对象进行删除



9. 最后将 mynewtest 桶删掉

第一次尝试的时候直接对桶进行删除，然后就收到了如下报错：



这是因为桶内还有 testc.txt

Object Browser

Name	Objects	Size	Access
mynewtest	1	20.0 B	R/W
mytest	1	28.0 B	R/W

接着，我把 mynewtest 桶内的 testc.txt 删掉

```
Command Prompt - py -u "C:\Users\pings\Desktop\BigData\python\CRUD.py"
1. Create Bucket
2. Read Bucket(List Bucket)
3. Update Object in Bucket
4. Delete Bucket
5. Upload Object
6. Download Object
7. Copy Object
8. Delete Object
0. Exit
Please KeyIn 0~8: 8
Deleting Object in Bucket
Bucket Name: mynewtest
Object Key: testc.txt
Object 'testc.txt' deleted from bucket 'mynewtest'
```

Object Browser

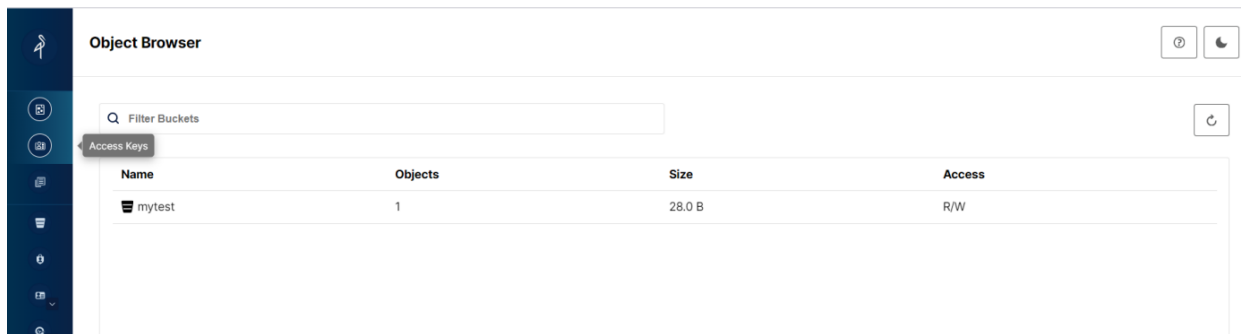
Name	Objects	Size	Access
mynewtest	0	0.0 B	R/W
mytest	1	28.0 B	R/W

然后再对 mynewtest 桶进行删除，就成功了

```
Command Prompt - py -u "C:\Users\pings\Desktop\BigData\python\CRUD.py
Please KeyIn 0~8: 8
Deleting Object in Bucket
Bucket Name: mynewtest
Object Key: testc.txt
Object 'testc.txt' deleted from bucket 'mynewtest'

1. Create Bucket
2. Read Bucket(List Bucket)
3. Update Object in Bucket
4. Delete Bucket
5. Upload Object
6. Download Object
7. Copy Object
8. Delete Object
0. Exit
Please KeyIn 0~8: 4

Deleting Bucket
Bucket Name: mynewtest
Bucket mynewtest deleted.
```



10. 最后选择 0 退出 CRUD.py

```
Command Prompt
4. Delete Bucket
5. Upload Object
6. Download Object
7. Copy Object
8. Delete Object
0. Exit
Please KeyIn 0~8: 4

Deleting Bucket
Bucket Name: mynewtest
Bucket mynewtest deleted.

1. Create Bucket
2. Read Bucket(List Bucket)
3. Update Object in Bucket
4. Delete Bucket
5. Upload Object
6. Download Object
7. Copy Object
8. Delete Object
0. Exit
Please KeyIn 0~8: 0
Thanks for using! See you Next Time!
```