

Assignment – 1
CSCI 5410 (Serverless Data Processing)
Problem #2: AWS S3 experiment

Purvisha Patel
(B00912611)

Faculty of Computer Science
Dalhousie University

Flowchart

The below flowchart shows the steps performed for creating an Amazon S3 bucket and to upload a html file to the bucket.

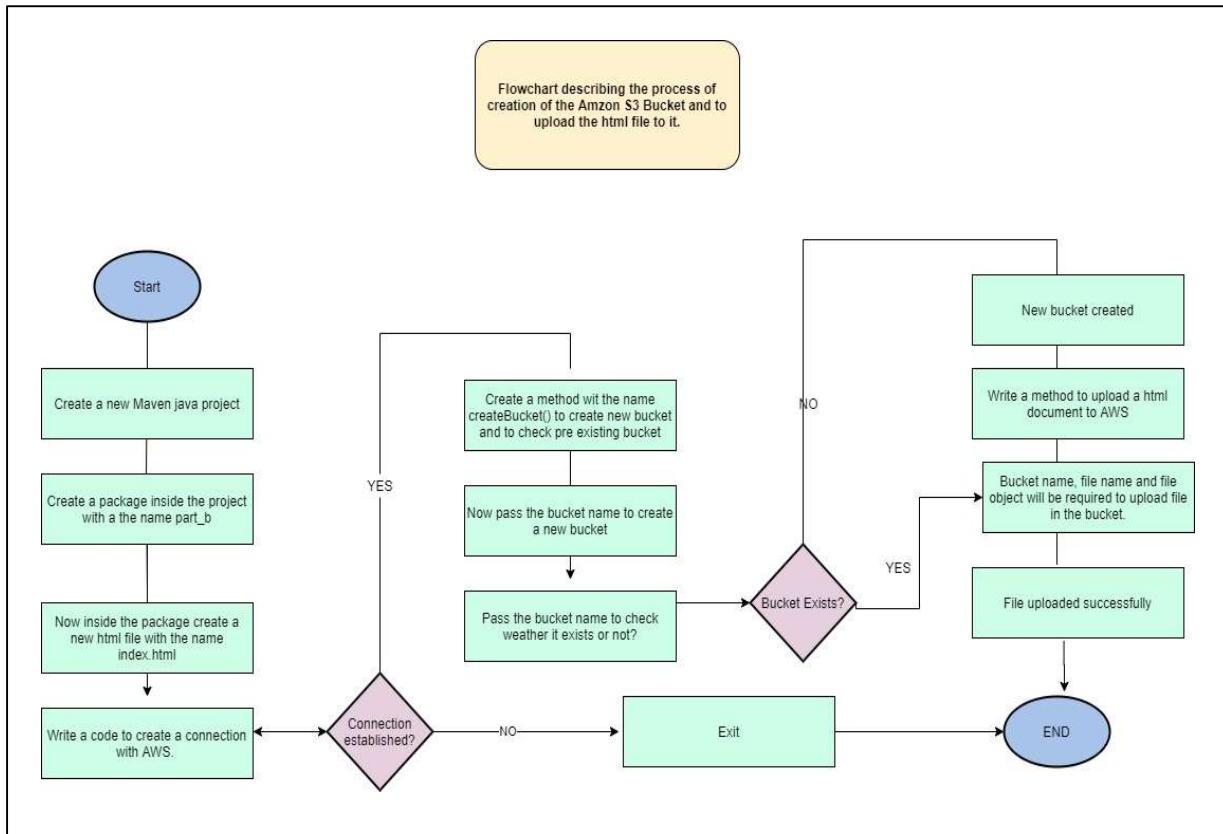


Figure 1:Flowchart

Overview on the AWS SDK

The Amazon Web Services Software Development Kit (AWS SDK) is a group of computer programmers for building libraries and applications that utilize AWS services. By providing Java developers with access to a number of common and well-known libraries, the AWS SDK for Java streamlines the procedure for using AWS Services. It also offers assistance with problems relating to the API lifecycle, such as credential management, retries, data marshalling, and serialization. For more effective development, the AWS SDK for Java now offers higher level abstractions. Users of browser-based programming have direct JavaScript access to AWS due to the AWS SDK (software development kit). The usage of Facebook, Google, or Amazon logins for user identification is made possible via web identity federation. Developers just need to download the relevant SDK in order to utilize the AWS SDK for JavaScript; additional software is not needed. However, an AWS account and access credentials are necessary to access the SDK environment.

Screenshots

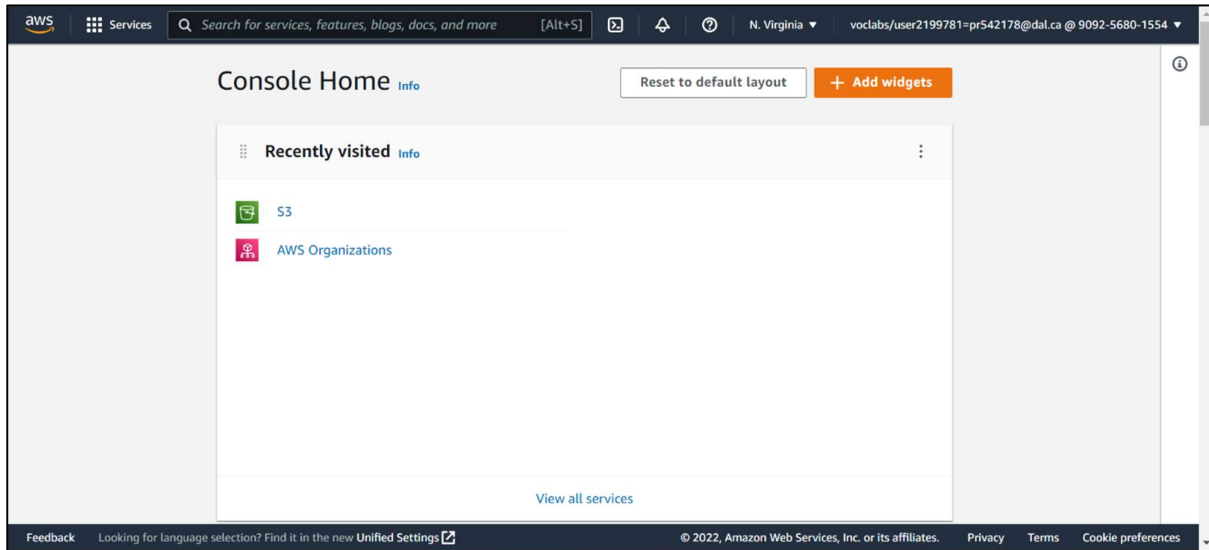


Figure 2: AWS Console Homepage

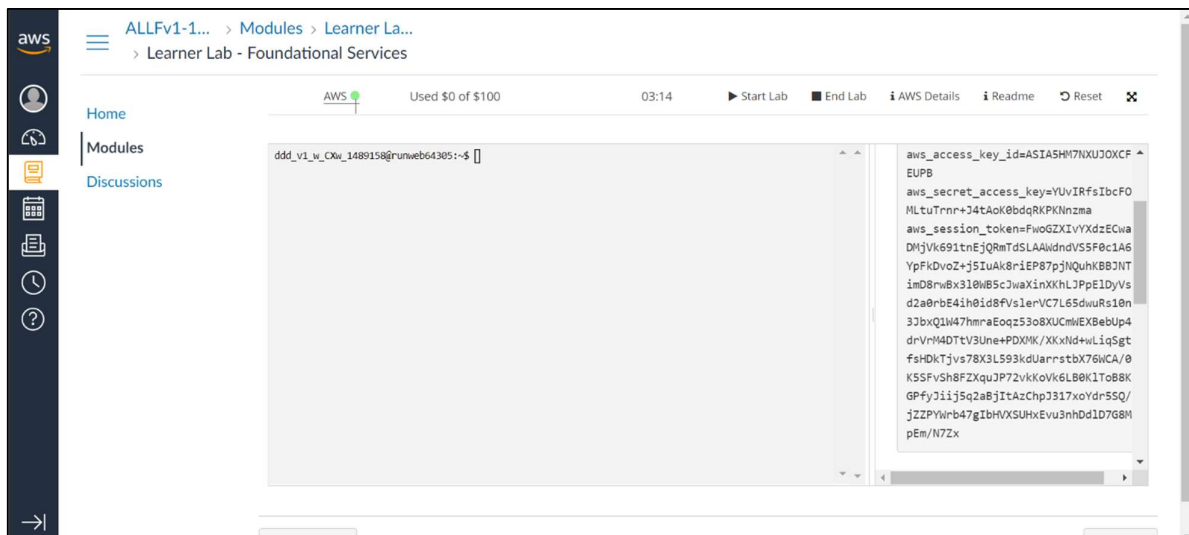


Figure 3: AWS Lab

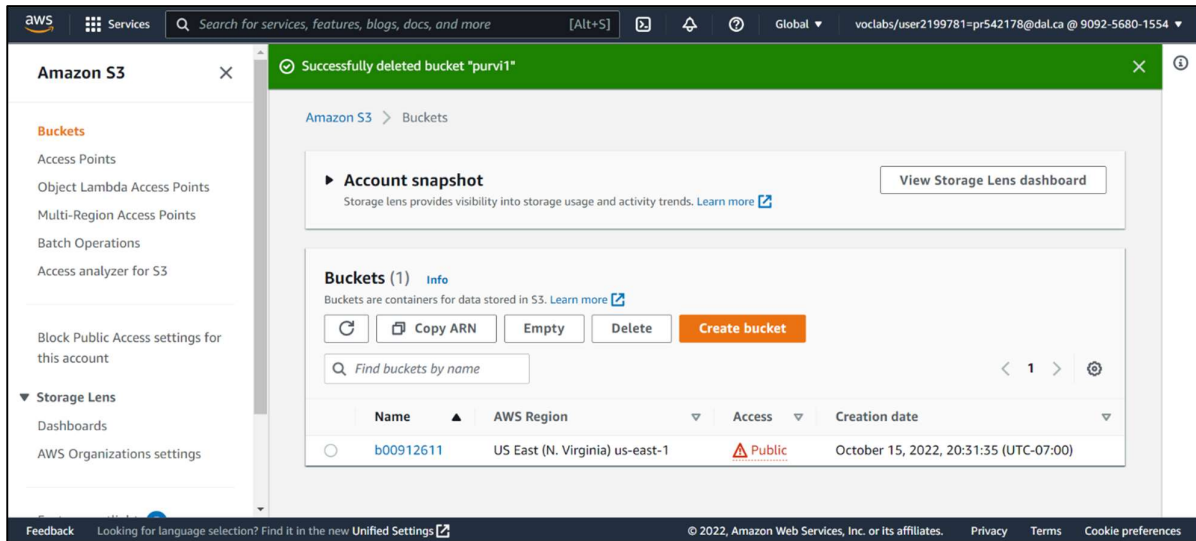


Figure 4: A new bucket with the name "b00912611" has created

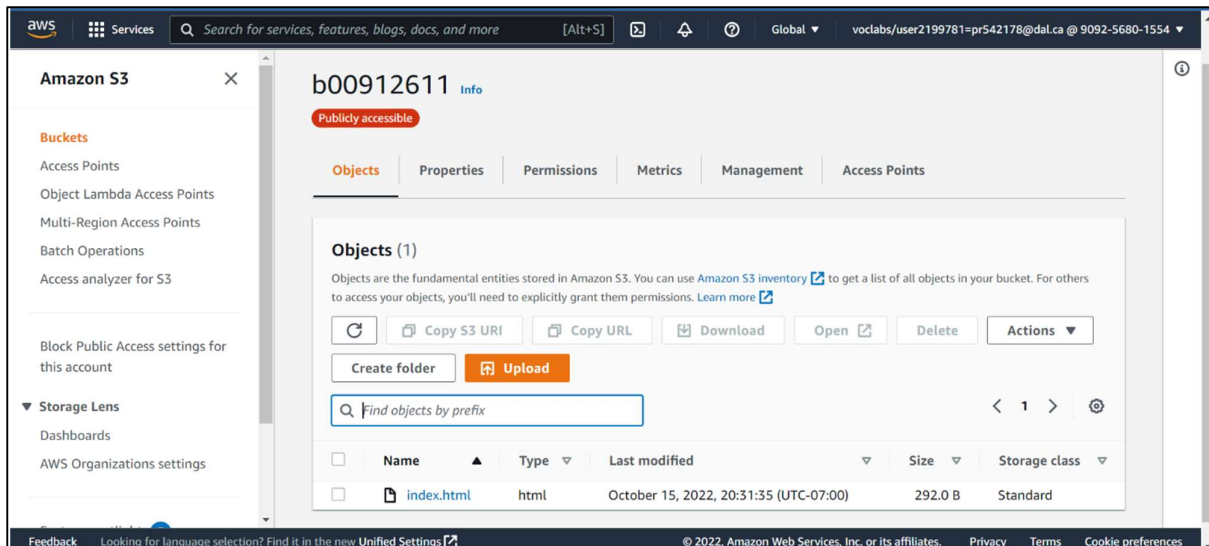


Figure 5: A html file in the bucket is uploaded



Figure 6: Html page with credentials

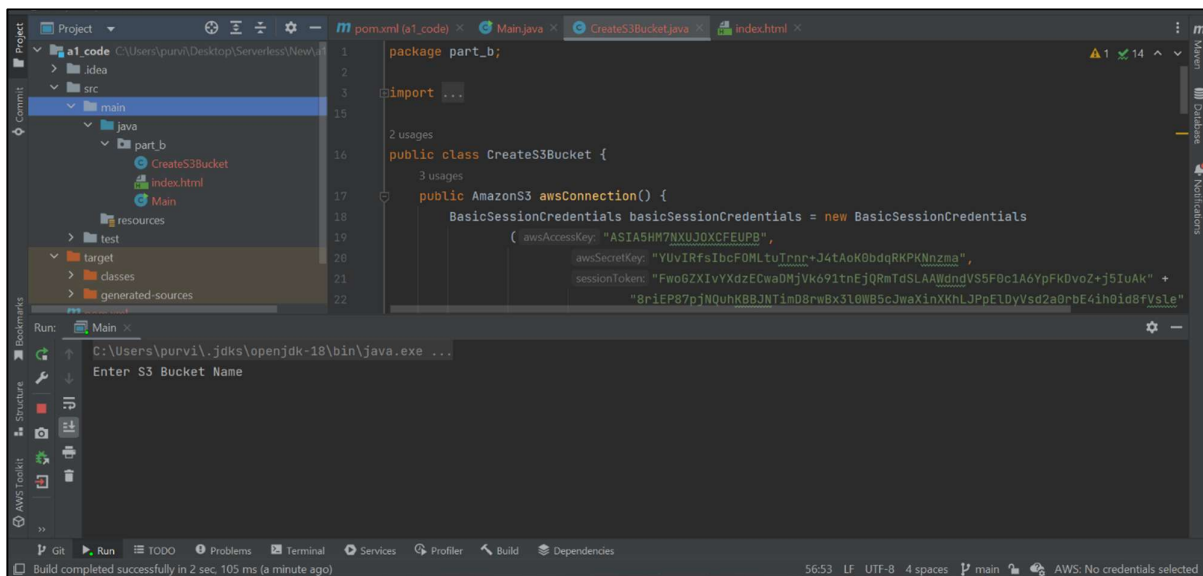


Figure 7: Creation of Bucket

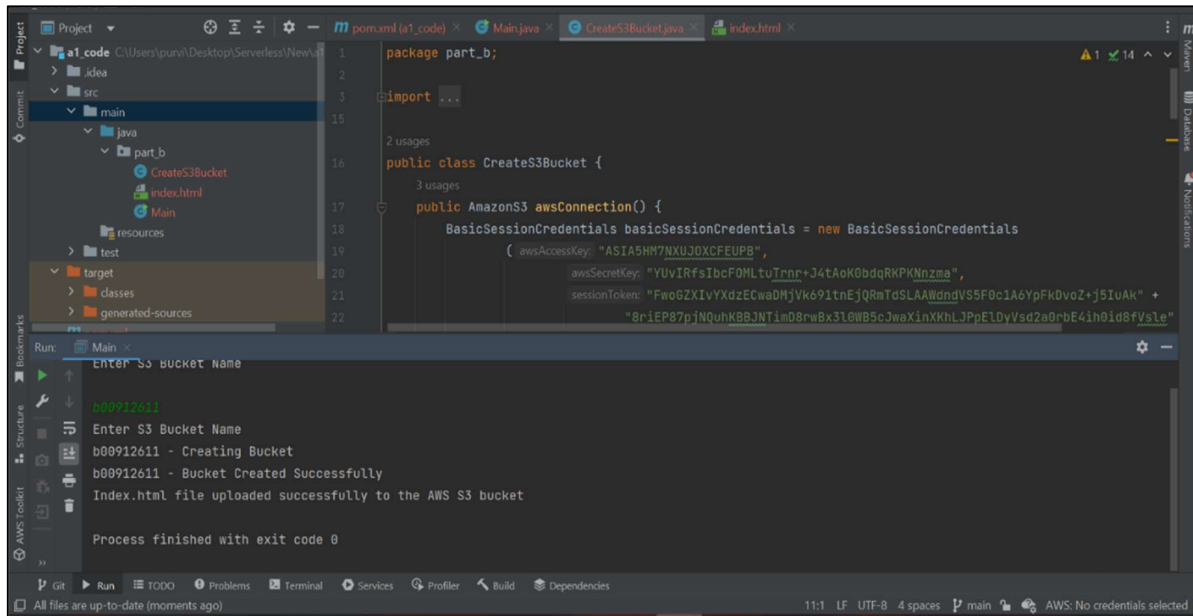


Figure 8: Bucket is created and html file is uploaded

Program Script

Main.java

```
package part_b;

import java.util.Scanner;

public class Main {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        String s3BucketName = null;
        while (s3BucketName == null || s3BucketName.trim().isEmpty()) {
            System.out.println("Enter S3 Bucket Name");
            s3BucketName = scanner.nextLine();
        }
        CreateS3Bucket createS3Bucket = new CreateS3Bucket();
        createS3Bucket.createBucket(s3BucketName);
        createS3Bucket.uploadFile(s3BucketName);
    }
}
```

CreateS3Bucket.java

```
package part_b;

import com.amazonaws.AmazonServiceException;
import com.amazonaws.auth.AWSStaticCredentialsProvider;
import com.amazonaws.auth.BasicSessionCredentials;
import com.amazonaws.regions.Regions;
import com.amazonaws.services.s3.AmazonS3;
import com.amazonaws.services.s3.AmazonS3ClientBuilder;
import com.amazonaws.services.s3.model.AmazonS3Exception;
import com.amazonaws.services.s3.model.Bucket;

import java.io.File;
import java.nio.file.Paths;
import java.util.List;

public class CreateS3Bucket {
    public AmazonS3 awsConnection() {
        BasicSessionCredentials basicSessionCredentials = new
        BasicSessionCredentials
            ("ASIA5HM7NXUJOXCFEUPB",
            "YUvIRfsIbcFOMLtuTrnr+J4tAoK0bdqRKPKNnzma",
            "FwoGZXIvYXdzECwaDMjVk691tnEjQRmTdSLAAWdndVS5F0c1A6YpFkDvoZ+j5IuAk" +
            "8riEP87pjNQuhKBBJNTimD8rwBx3l0WB5cJwaXinXKhLJPpElDyVsd2a0rbE4ih0id8" +
            "fVslrVC7L65dWuRs10n3JbxQ1W47hmraEqz53o8XUCmWEXBebUp4drVrM4DTtV3Un" +
            "e+PDXMK/XKxNd+wLiqSgtfsHDkTjvs78X3L593kdUarrstbX76WCA/0K5SFvSh8FZXqu" +
            "JP72vkKoVk6LB0KlToB8KGPfyJiiJ5q2aBjItAzChpJ3l7xoYdr5SQ/jZZPYWrb47gIb" +
            "HVXSUHXevu3nhDdlD7G8MpEm/N7Zx");
    }
}
```

```

        AmazonS3 amazonS3object = AmazonS3ClientBuilder.standard()
            .withCredentials(new
AWSStaticCredentialsProvider(basicSessionCredentials))
            .withRegion(Regions.US_EAST_1)
            .build();
        return amazonS3object;
    }
    public void createBucket(String s3BucketName){
        boolean flag = false;
        List<Bucket> bucketList = awsConnection().listBuckets();
        for (Bucket bucket: bucketList){
            if(bucket.getName().equals(s3BucketName)){
                flag = true;
                break;
            }
        }
        if (flag){
            System.out.println(s3BucketName + " already present....");
        }else {
            try {
                System.out.println(s3BucketName + " - Creating Bucket");
                awsConnection().createBucket(s3BucketName);
                System.out.println(s3BucketName+ " - Bucket Created Successfully");
            }catch (AmazonS3Exception e){
                e.getMessage();
            }
        }
    }
    public void uploadFile(String s3BucketName) {
        String defaultPath = "./src/main/java/part_b/";
        String htmlFileName = "index.html";
        String fileName =
Paths.get(defaultPath+htmlFileName).getFileName().toString();
        try {
            awsConnection().putObject(s3BucketName, fileName, new
File(defaultPath+htmlFileName));
            System.out.println("Index.html file uploaded successfully to the AWS S3
bucket");
        } catch (AmazonServiceException e) {
            e.getMessage();
        }
    }
}

```


Link to the GitLab repository:

https://git.cs.dal.ca/purvisha/csci5410_b00912611_purvisha_patel.git

References

- [1] "AWS SDK for JavaScript," Theserverside.com, 16-Apr-2014. [Online]. Available: <https://www.theserverside.com/definition/AWS-SDK-for-JavaScript> [Accessed: 16-Oct-2022].
- [2] Theserverside.com. [Online]. Available: <https://www.theserverside.com/definition> [Accessed: 16-Oct-2022].
- [3] Amazon.com. [Online]. Available: <https://aws.amazon.com/sdk-for-javascript> [Accessed: 16-Oct-2022].