Assignment 3: - Introduction to AWS S3 (Simple Storage Service) and Hosting a Static Website Using Amazon Simple Storage Service

In this lab, you will learn :

- Create a bucket in Amazon S3
- Upload content to a bucket
- Manage access permissions on an object and a bucket
- Create a bucket policy
- Use bucket versioning
- Update a static website

Introduction to AWS Educate:

AWS Educate is an online platform built by Amazon that enables users to learn AWS by providing access to online training resources and labs to learn, practice, and evaluate cloud skills without having to create an Amazon or AWS account. In this course, we will be working with AWS Educate, which familiarizes you with AWS.

Setting up an AWS Educate account :

1. Click here to go to AWS Educate.
2. Click on “Register Now”
3. Provide your **SRN** as the First Name and your **name** as the last name while filling the required details to register.
4. Verify the given email address to complete the registration.
5. Set a password for the AWS Educate account
6. Login into your account and choose the course **“Introduction to Cloud 101”**
7. Under modules choose the module **Lab 1 - Introduction to Amazon S3**
8. Explore the course!

What is AWS S3?

Amazon Simple Storage Service (Amazon S3) is a scalable, high-speed, web-based cloud storage service. The service is designed for online backup and archiving of data and

applications on Amazon Web Services (AWS). Amazon S3 was designed with a minimal feature set and created to make web-scale computing easier for developers.

Some essential features of S3 are

- **Create Buckets:** Firstly, we create a bucket and provide a name to the bucket. Buckets are the containers in S3 that stores the data.
- **Storing data in buckets:** Bucket can be used to store an infinite amount of data. You can upload the files as much you want into an Amazon S3 bucket, i.e., there is no maximum limit to store the files. Each object can contain upto 5 TB of data. Each object can be stored and retrieved by using a unique developer assigned-key.
- **Permissions:** You can also grant or deny access to others who want to download or upload the data from your Amazon S3 bucket. Authentication mechanism keeps the data secure from unauthorized access.
- **Security:** Amazon S3 offers security features by protecting unauthorized users from accessing your data.
- **Standard interfaces:** S3 is used with the standard interfaces REST and SOAP interfaces which are designed in such a way that they can work with any development toolkit.

S3 is object-based. Objects consist of the following:

- **Key:** It is simply the name of the object. For example, hello.txt, spreadsheet.xlsx, etc. You can use the key to retrieve the object.
- **Value:** It is simply the data which is made up of a sequence of bytes. It is actually data inside the file.
- **Version ID:** Version ID uniquely identifies the object. It is a string generated by S3 when you add an object to the S3 bucket.
- **Metadata:** It is the data about data that you are storing. A set of a name-value pair with which you can store the information regarding an object. Metadata can be assigned to the objects in the Amazon S3 bucket.
- **Subresources:** Subresource mechanism is used to store object-specific information.
- **Access control information:** You can put the permissions individually on your files.

NOTE : Make sure the account name(containing SRN) on the top right is visible in the screenshots submitted (Shown in the below screenshot)

NOTE : Make sure the name of the bucket in Lab 1 is reportubucketSRN (Eg. reportbucketPES1UG20CSXXX) and Lab 7 is website-<123>

NOTE : In Lab 7, ensure that the change in index.html file replaces the text "Served From Amazon S3" to "Created By <YOUR_SRN>"

Deliverables:

The following screenshots are to be submitted:

In Lab 1:

Screenshot 1a: Bucket Creation
Screenshot 1b: Access denied error when opening new-report.png
Screenshot 1c: Display new-report.png after making it publicly accessible
Screenshot 1d: PutObject operation failed (Access Denied)
Screenshot 1e: Access denied error when opening sample-file.txt
Screenshot 1f: Display sample-file.txt after updating policy

In Lab 7:

Screenshot 2a: Enabled static website option selected under "Edit static website hosting"
Screenshot 2b: 403 Forbidden Error page
Screenshot 2c: Uploaded objects (index.html, script.js, style.css)
Screenshot 2d: Static website before modifying index.html file
Screenshot 2e: Static website after modifying index.html file

NOTE : The screenshots must be pasted into a Word document and sent in PDF format. The file should be named in this manner **<Section>_<SRN>_<Name>_E3.pdf** (Eg. A_PES1UG20CSXXX_Name_E3.pdf)

Points to note:

1. AWS Educate will create a temporary AWS account with all the required permissions and access to complete the lab. **Do not** use your personal AWS account. To prevent conflicts with any AWS account that you have already signed into on your browser, use incognito mode.

2. **DO NOT** change the default region/ VPC or any other settings that are automatically created by AWS Educate.
3. The AWS Educate lab session is timed. When the time limit is reached/the timer expires, the AWS account is deleted, and you must restart the lab from the beginning.
4. All code and configuration for the AWS Educate lab have already been given. You are not required to code anything from scratch or deviate from this for the lab experiments. However, in some cases, you may be required to name the resources you use differently, as instructed.
5. The assignments may require you to deviate from the AWS Educate instructions and use your own code. Instructions will be given.

6. **DO NOT** try to access or avail any other resources and services that have not been described in the lab session or your account will be blocked.
7. Ensure that you have signed into AWS Educate from your mail account.