

# SVKM'S NMIMS Nilkamal School of Mathematics, Applied Statistics & Analytics Master of Science (Data Science)

## Practical-4 Storage as a service using AWS.

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**Date :- 05/03/2024**

**Submission Date :- 07/03/2024**

### **Write up :-**

- **Storage as a service-s3**

Amazon Simple Storage Service (S3) is a widely used Storage as a Service (SaaS) offering by Amazon Web Services (AWS). S3 provides a scalable and durable object storage solution that allows users to store and retrieve data over the internet. With a focus on high availability, S3 ensures 99.999999999% durability by replicating data across multiple servers and facilities. Users can easily scale their storage needs, starting with a minimal amount and expanding as their requirements grow. Security features such as access control lists, bucket policies, and AWS Identity and Access Management provide robust control over data access. S3's versatility makes it suitable for various use cases, including data backup, archiving, content distribution, and analytics. Objects are stored with unique keys in a flat, non-hierarchical structure, and users can take advantage of features like versioning and lifecycle management. S3's straightforward setup, reliability, and accessibility make it a fundamental component for cloud-based applications and services, offering simplicity and cost-effectiveness in managing data in the cloud.

- **S3 use cases**

**Data Backup and Archiving:** S3 is often used for data backup and archiving purposes. Its high durability ensures that data remains intact, and versioning support allows for easy recovery of previous versions of objects.

**Web Hosting and Content Distribution:** S3 can be used to host static websites or distribute content globally. By leveraging S3's content delivery features, such as Amazon CloudFront, users can deliver static and dynamic web content with low latency and high transfer speeds.

**Big Data Analytics:** S3 is commonly employed as a data lake for big data analytics. It allows organizations to store vast amounts of raw and processed data, making it accessible for analysis using services like Amazon Athena, Amazon Redshift, or third-party analytics tools.

**Media Storage and Distribution:** S3 is suitable for storing and distributing multimedia files such as images, videos, and audio. Its scalable architecture ensures seamless handling of large media files, and the integration with CloudFront facilitates efficient content delivery.

**Application Hosting:** Developers use S3 to store and retrieve data for cloud-based applications. It provides a reliable and scalable storage solution for applications hosted on AWS, supporting features like static website hosting and application data storage.

**Disaster Recovery:** S3 is a key component in building robust disaster recovery solutions. By replicating data across different AWS regions, organizations can ensure data availability even in the event of a regional outage.

**Data Migration:** S3 is often involved in data migration projects. Users can upload large datasets to S3 and then transfer the data to other AWS services or on-premises systems efficiently.

**Log Storage and Analysis:** S3 is used to store log files generated by various applications and services. Combined with services like Amazon CloudWatch and AWS Lambda, organizations can analyze logs for insights, troubleshoot issues, and monitor system performance.

**Collaborative Workflows:** S3 supports collaborative workflows by providing a centralized repository for shared documents, images, and other collaborative assets. Teams can use S3 to store and share files securely.

**IoT Data Storage:** S3 is suitable for storing large volumes of data generated by Internet of Things (IoT) devices. It allows organizations to capture, store, and analyze IoT data efficiently. These use cases demonstrate the flexibility and adaptability of Amazon S3 across diverse scenarios, making it a foundational service for various industries and applications in the cloud.

- **Steps for s3**

To use Amazon S3 effectively, you can follow these general steps:

**Sign Up for AWS:** If you don't have an AWS account, sign up for one at <https://aws.amazon.com/>. You'll need to provide billing information, but many AWS services, including S3, offer a free tier with limited resources.

**Access AWS Management Console:** Log in to the AWS Management Console using your account credentials.

**Navigate to S3:** In the AWS Management Console, find and select the "S3" service under the "Storage" category.

**Create a Bucket:** In the S3 dashboard, click the "Create Bucket" button. Give your bucket a unique name (S3 bucket names are globally unique) and choose the region where you want the bucket to be located.

**Configure Bucket Properties:** Set up additional configurations for your bucket, such as versioning, logging, and tags. Versioning is especially useful for data backup and recovery.

**Set Permissions:** Define access permissions for your bucket. This includes setting bucket policies and access control lists (ACLs) to manage who can access your data and what they can do with it.

**Upload Objects to the Bucket:** Once your bucket is set up, you can upload files, also known as objects, to it. You can either use the web interface to upload individual files or leverage AWS SDKs and command-line tools for larger-scale uploads.

**Configure Object Properties:** Set metadata and configure properties for your uploaded objects, including storage class, encryption, and access control.

**Manage Objects:** Use the S3 console to manage your objects, including copying, moving, and deleting. You can also organize objects into folders within your bucket.

**Enable Versioning (Optional):** If you want to enable versioning for your bucket, allowing you to keep multiple versions of an object, you can do so in the bucket properties.

**Enable Logging (Optional):** If you want to log access to your S3 bucket, configure logging settings in the bucket properties.

**Set Up Lifecycle Policies (Optional):** Define lifecycle policies to automatically transition objects to different storage classes or delete them after a specific period.

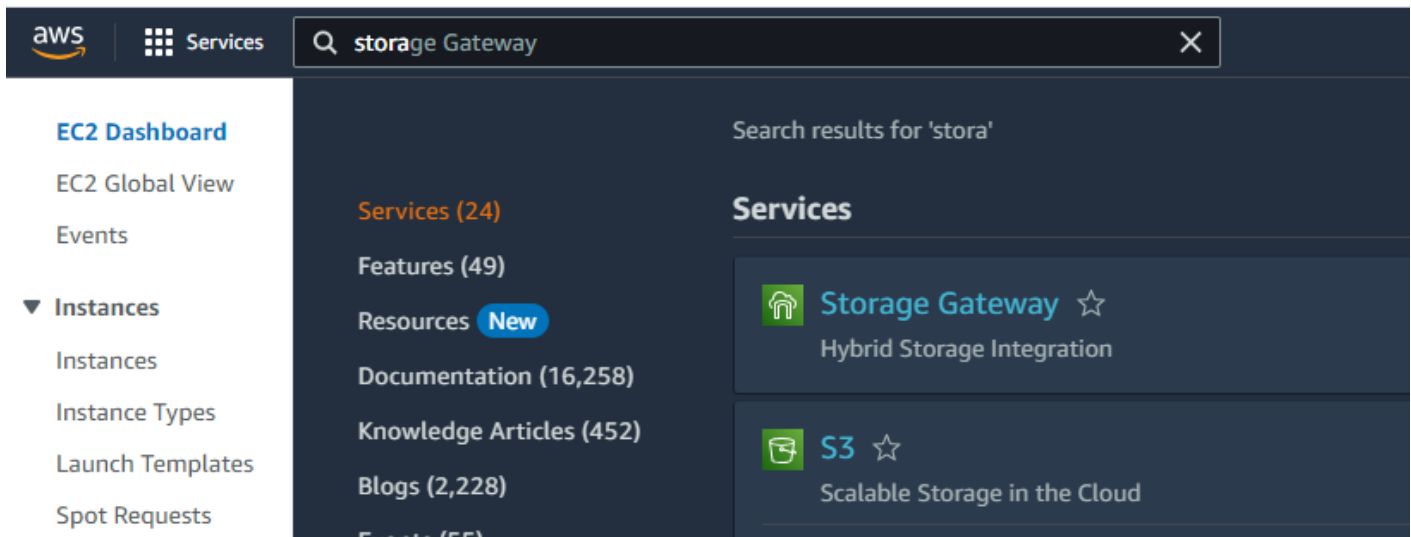
**Secure Access with AWS Identity and Access Management (IAM):** Use IAM to control access to your S3 resources. Create IAM users and roles with appropriate permissions to ensure secure access.

**Integrate with Other AWS Services (Optional):** Explore integrations with other AWS services. For example, you can connect your S3 bucket with AWS Lambda, CloudFront for content delivery, or AWS Glue for data processing.

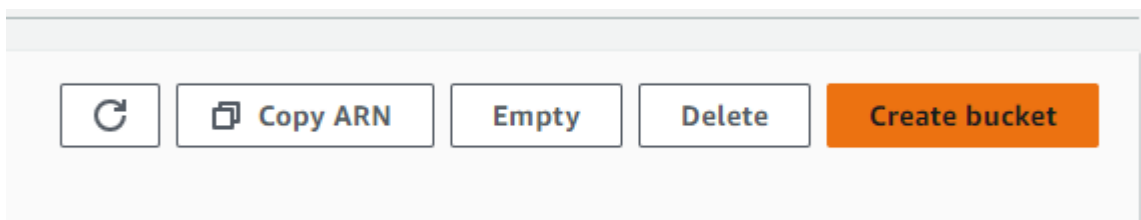
## Implement S3 for :

### 1. uploading a file, video, etc.

Open AWS Console and select S3 Storage



On S3 page click on "Create bucket"



Select the desired region and give your bucket name

# Create bucket [Info](#)

Buckets are containers for data stored in S3.

## General configuration

AWS Region

Asia Pacific (Mumbai) ap-south-1

Bucket name [Info](#)

myawsprad

Bucket name must be unique within the global namespace and follow the bucket naming rules. [See rules for bucket naming](#)

Copy settings from existing bucket - *optional*

Only the bucket settings in the following configuration are copied.

**Choose bucket**

Format: s3://bucket/prefix

Verify that the bucket is created

[General purpose buckets](#) | [Directory buckets](#)

**General purpose buckets (3)** [Info](#)

Buckets are containers for data stored in S3.

[Refresh](#) [Copy ARN](#) [Empty](#) [Delete](#) [Create bucket](#)

< 1 > ⚙

	Name	AWS Region	Access	Creation date
<input type="radio"/>	arishademo	Asia Pacific (Mumbai) ap-south-1	Bucket and objects not public	March 5, 2024, 07:37:40 (UTC+05:30)
<input type="radio"/>	elasticbeanstalk-ap-south-1-836706723086	Asia Pacific (Mumbai) ap-south-1	Objects can be public	January 23, 2024, 07:52:55 (UTC+05:30)
<input type="radio"/>	myawspract	Asia Pacific (Mumbai) ap-south-1	Bucket and objects not public	March 5, 2024, 07:48:07 (UTC+05:30)

Click on Upload file

**sanciasbucket** [Info](#)

[Objects](#) | [Properties](#) | [Permissions](#) | [Metrics](#) | [Management](#) | [Access Points](#)

**Objects (0)** [Info](#)

Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 Inventory](#) to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. [Learn more](#)

[Refresh](#) [Copy S3 URI](#) [Copy URL](#) [Download](#) [Open](#) [Delete](#) [Actions](#) [Create folder](#) [Upload](#)

< 1 > ⚙

	Name	Type	Last modified	Size	Storage class
No objects You don't have any objects in this bucket.					

[Upload](#)

Click on Add Files and upload any downloaded image/pdf/videos, etc.

# Upload Info

Add the files and folders you want to upload to S3. To upload a file larger than 160GB, use the AWS CLI, AWS SDK or Amazon S3 REST API. [Learn more](#)

Drag and drop files and folders you want to upload here, or choose **Add files** or **Add folder**.

Files and folders (0)

Remove

Add files

Add folder

All files and folders in this table will be uploaded.

Find by name

< 1 >

	Name	Folder
No files or folders		
You have not chosen any files or folders to upload.		



Web

05-03-2024 07:58AM

Chrome HTML Do...

1 KB



cat

05-03-2024 07:38AM

JPG File

409 KB

select week (1)

[Amazon S3](#) > [Buckets](#) > [arishademo](#) > Upload

## Upload [Info](#)

Add the files and folders you want to upload to S3. To upload a file larger than 160GB, use the AWS CLI, AWS SDK or Amazon S3 REST API. [Learn more](#)

Drag and drop files and folders you want to upload here, or choose **Add files** or **Add folder**.

### Files and folders (1 Total, 408.7 KB)

Remove

Add files

Add folder

All files and folders in this table will be uploaded.

< 1 >

<input type="checkbox"/>	Name	Folder
<input type="checkbox"/>	cat.jpg	-

### Destination [Info](#)

Destination

s3://arishademo

#### ► Destination details

Bucket settings that impact new objects stored in the specified destination.

#### ► Permissions

Grant public access and access to other AWS accounts.

#### ► Properties

Specify storage class, encryption settings, tags, and more.

Cancel

Upload

After Uploading verify if the image has been uploaded

Upload succeeded  
View details below.

Upload: status

Close

The information below will no longer be available after you navigate away from this page.

Summary

Destination

s3://arishademo

Succeeded

1 file, 408.7 KB (100.00%)

Failed

0 files, 0 B (0%)

Files and folders

Configuration

Files and folders (1 Total, 408.7 KB)

Find by name

< 1 >

Name	Folder	Type	Size	Status	Error
cat.jpg	-	image/jpeg	408.7 KB	Succeeded	-

cat.jpg

info

Copy S3 URI

Download

Open

Object actions

Properties

Permissions

Versions

Object overview

Owner

f51329b4dde5aedd154a025185b5e7bffa1275384fddf7cf3d2981f7e843458d

AWS Region

Asia Pacific (Mumbai) ap-south-1

Last modified

March 5, 2024, 08:06:17 (UTC+05:30)

Size

408.7 KB

Type

jpg

Key

cat.jpg

S3 URI

s3://arishademo/cat.jpg

Amazon Resource Name (ARN)

arn:aws:s3:::arishademo/cat.jpg

Entity tag (Etag)

9dadadf54b4c317099c6dc825d17471a

Object URL

https://arishademo.s3.ap-south-1.amazonaws.com/cat.jpg





## 2. uploading a static website

Account snapshot

Storage lens provides visibility into storage usage and activity trends. [Learn more](#)

View Storage Lens dashboard

General purpose buckets

Directory buckets

General purpose buckets (3) Info

Buckets are containers for data stored in S3.

Find buckets by name

Refresh

Copy ARN

Empty

Delete

Create bucket

< 1 >

⚙

	Name	AWS Region	Access	Creation date
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<input type="radio"/>	myawspract	Asia Pacific (Mumbai) ap-south-1	Bucket and objects not public	March 5, 2024, 07:48:07 (UTC+05:30)

### General configuration

AWS Region

Asia Pacific (Mumbai) ap-south-1

Bucket name

Info

skncksk

Bucket name must be unique within the global namespace and follow the bucket naming rules. [See rules for bucket naming](#)

Copy settings from existing bucket - optional

Only the bucket settings in the following configuration are copied.

Choose bucket

Format: s3://bucket/prefix

Successfully created bucket "skncksk"

To upload files and folders, or to configure additional bucket settings, choose [View details](#).

Amazon S3 > Buckets

Account snapshot

Storage lens provides visibility into storage usage and activity trends. [Learn more](#)

View Storage Lens dashboard

General purpose buckets

Directory buckets

General purpose buckets (4) Info

Buckets are containers for data stored in S3.

Find buckets by name

Refresh

Copy ARN

Empty

Delete

Create bucket

< 1 >

⚙

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<input type="radio"/>	myawspract	Asia Pacific (Mumbai) ap-south-1	Bucket and objects not public	March 5, 2024, 07:48:07 (UTC+05:30)
<input type="radio"/>	skncksk	Asia Pacific (Mumbai) ap-south-1	Bucket and objects not public	March 5, 2024, 08:11:04 (UTC+05:30)

Objects (0) [Info](#)

Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 inventory](#) to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. [Learn more](#)

Find objects by prefix

Name | Type | Last modified | Size | Storage class

No objects  
You don't have any objects in this bucket.

Upload

Objects

Properties

# Upload [Info](#)

Add the files and folders you want to upload to S3. To upload a file larger than 160GB, use the AWS CLI, AWS SDK or Amazon S3 REST API. [Learn more](#)

Drag and drop files and folders you want to upload here, or choose **Add files** or **Add folder**.

Files and folders (1 Total, 573.0 B)

Remove

Add files

Add folder

All files and folders in this table will be uploaded.

Find by name

Name | Folder

web.html

Destination [Info](#)

Destination

s3://sanciasbucket2

Destination details

Bucket settings that impact new objects stored in the specified destination.

Permissions

Grant public access and access to other AWS accounts.

Properties

Specify storage class, encryption settings, tags, and more.

Cancel

Upload


Firewall Authentication X Verify your identity X scenery for aws buck X Upload objects - S3 b X web.html - Object in X sanciasbucket2.s3.ap X Teams and Channels X ChatGPT X Bootstrap - The most X

getbootstrap.com

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Search

New in v5.3 Color mode support, expanded color palette, and more!



# Build fast, responsive sites with Bootstrap

Powerful, extensible, and feature-packed frontend toolkit. Build and customize with Sass, utilize prebuilt grid system and components, and bring projects to life with powerful JavaScript plugins.

```
$ npm i bootstrap@5.3.3
```

Read the docs

Currently v5.3.3 · Download · All releases

<>

## Get started any way you want

Type here to search

08:30AM 29-02-2024

Firewall Authentication X Verify your identity X scenery for aws buck X Upload objects - S3 b X web.html - Object in X sanciasbucket2.s3.ap X Teams and Channels X ChatGPT X Get started with Boo X

getbootstrap.com/docs/5.3/getting-started/introduction/

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Getting started

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- RTL
- Contribute

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- Optimize

Layout

- Breakpoints
- Containers
- Grid
- Columns
- Gutters

## Get started with Bootstrap

Bootstrap is a front-end web framework for creating responsive websites and web applications.

Quick start

Get started by following these steps. See it in action.

1. Create a new `index.html` file in your project root. Include the `<meta name="viewport">` tag as well for [proper responsive behavior](#) in mobile devices.

```
<!doctype html>
<html lang="en">
  <head>
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <title>Bootstrap demo</title>
  </head>
  <body>
    <h1>Hello, world!</h1>
  </body>
</html>
```

2. Include Bootstrap's CSS and JS. Place the `<link>` tag in the `<head>` for our CSS, and the `<script>` tag for our JavaScript bundle (including Popper for positioning dropdowns, poppers, and tooltips) before the closing `</body>`. Learn more about our [CDN links](#).

```
<!doctype html>
<html lang="en">
  <head>
```

On this page

- Quick start
- CDN links
- Next steps
- JS components
- Important globals
- HTML5 doctype
- Viewport meta
- Box-sizing
- Reboot
- Community

View on GitHub

Search docs

Recent

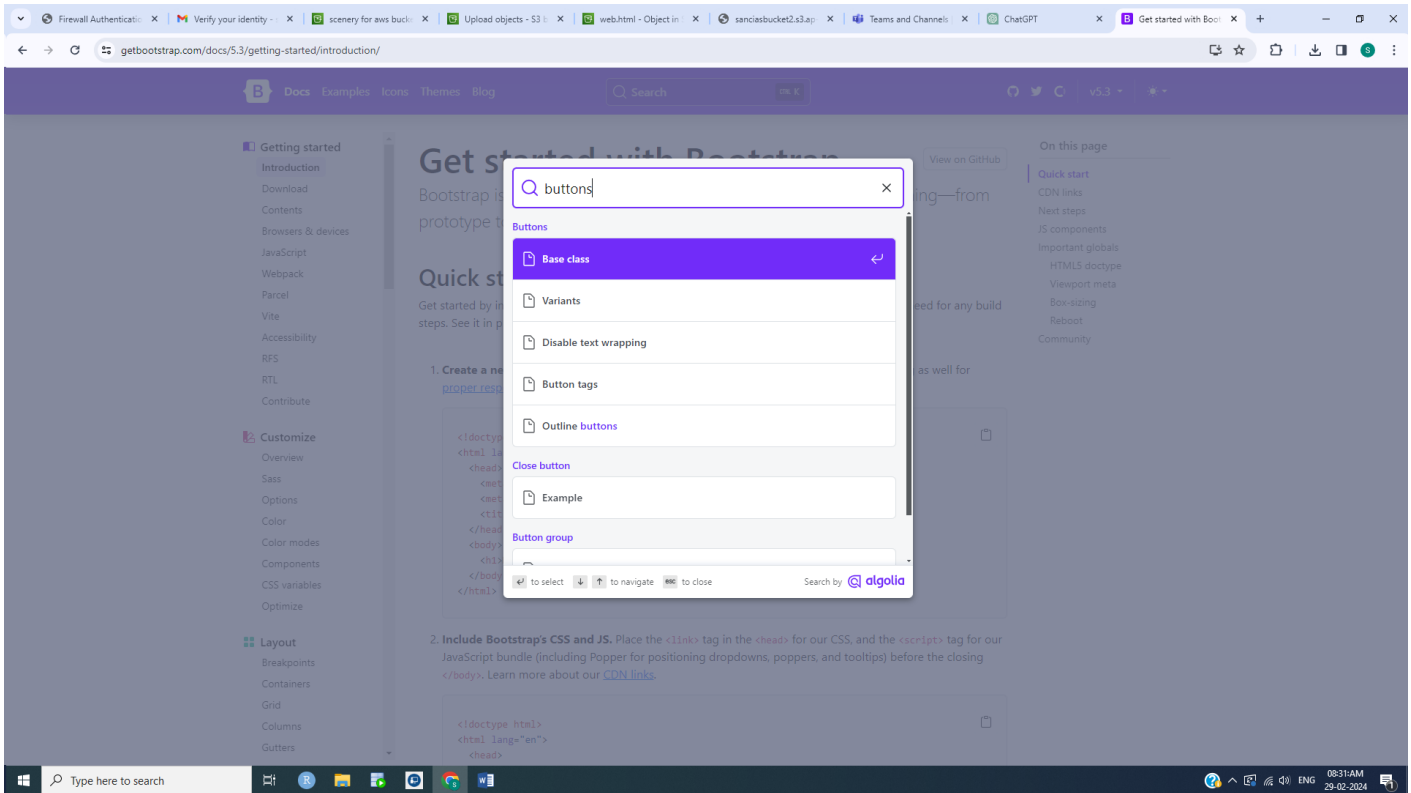
- Base class

to select to navigate to close

Search by algolia

Type here to search

08:30AM 29-02-2024



Primary

Secondary

Success

Danger

Warning

Info

Light

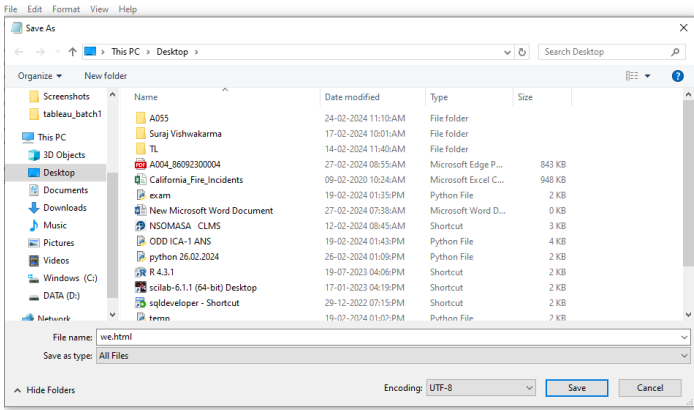
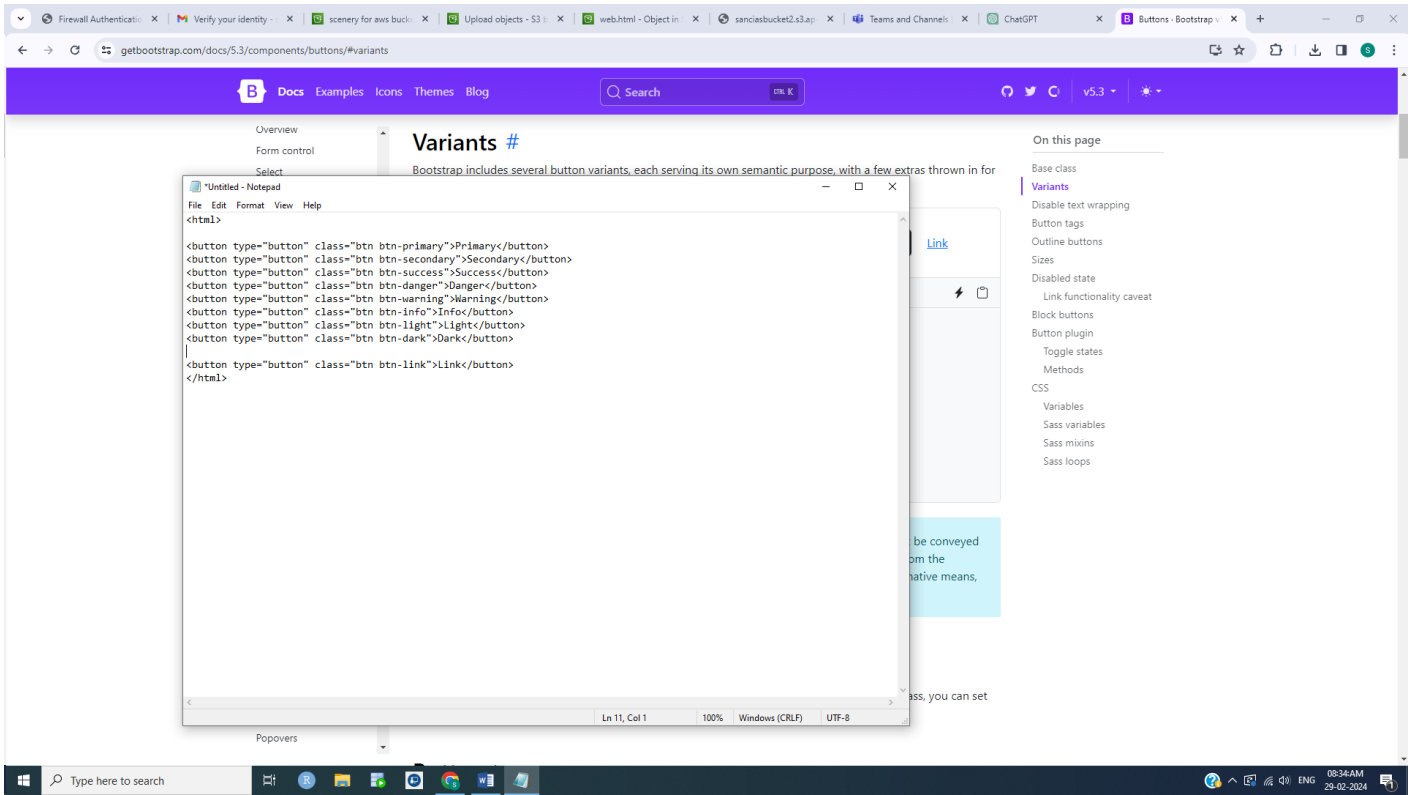
Dark

Link

HTML

```
<button type="button" class="btn btn-primary">Primary</button>
<button type="button" class="btn btn-secondary">Secondary</button>
<button type="button" class="btn btn-success">Success</button>
<button type="button" class="btn btn-danger">Danger</button>
<button type="button" class="btn btn-warning">Warning</button>
<button type="button" class="btn btn-info">Info</button>
<button type="button" class="btn btn-light">Light</button>
<button type="button" class="btn btn-dark">Dark</button>

<button type="button" class="btn btn-link">Link</button>
```



Firewall Authentication Keepal...Verify your identity - sanciafer...scenery for aws bucket.jpg - 0...Upload objects - S3 bucket sa...Teams and Channels | General...ChatGPTButtons - Bootstrap v5.3

s3.console.aws.amazon.com/s3/upload/sanciasbucket2?region=ap-south-1&bucketType=general

ServicesSearch[Alt+S]

Upload succeededView details below.

Upload: statusClose

The information below will no longer be available after you navigate away from this page.

Summary

Destination

s3://sanciasbucket2

Succeeded

1 file, 573.0 B (100.00%)

Failed

0 files, 0 B (0%)

Files and folders

Configuration

Files and folders (1 Total, 573.0 B)

Find by name

< 1 >

Name	Folder	Type	Size	Status	Error
web.html	-	text/html	573.0 B	Succeeded	-

CloudShellFeedback© 2024, Amazon Web Services, Inc. or its affiliates. PrivacyTermsCookie preferencesType here to search08:27 AM29-02-2024

Firewall Authentication...Verify your identity...scenery for aws buck...Upload objects - S3...web.html - Object in

sanciasbucket2.s3.ap-south-1.amazonaws.com/web.html?response-content-disposition=inline&X-Amz-Security-Token=IQoJb3J...

PrimarySecondarySuccessDangerWarningInfoLightDarkLink