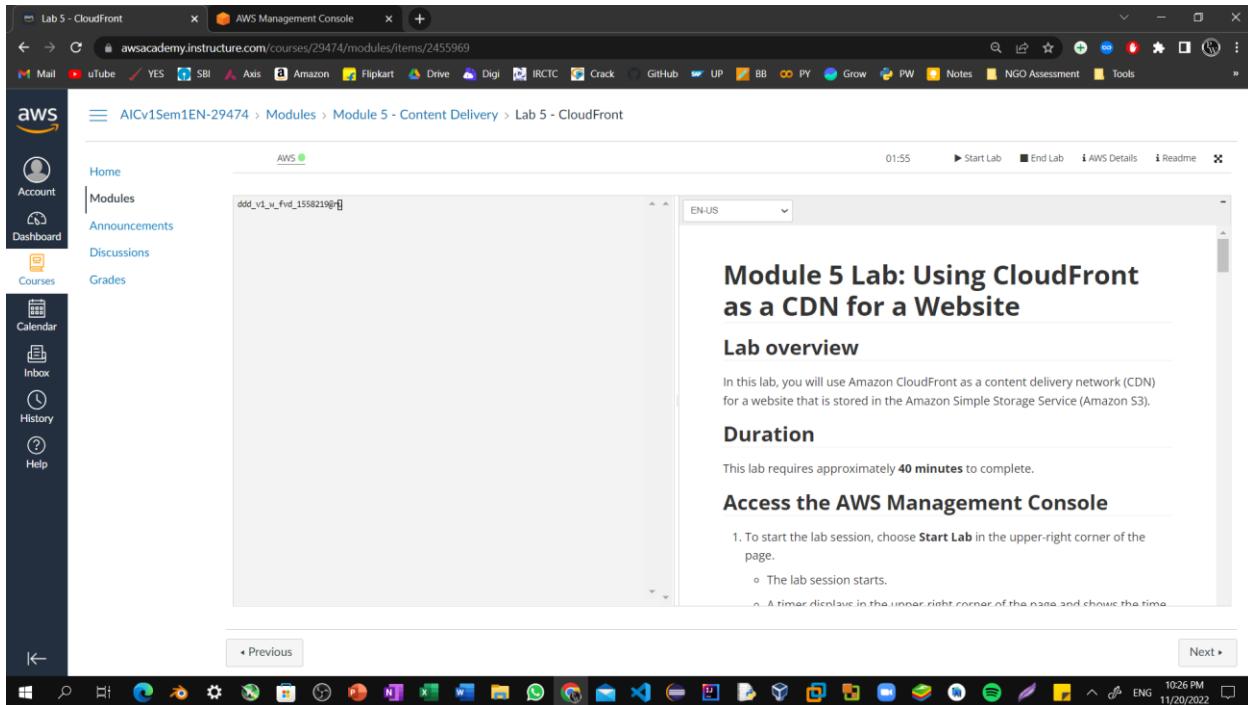
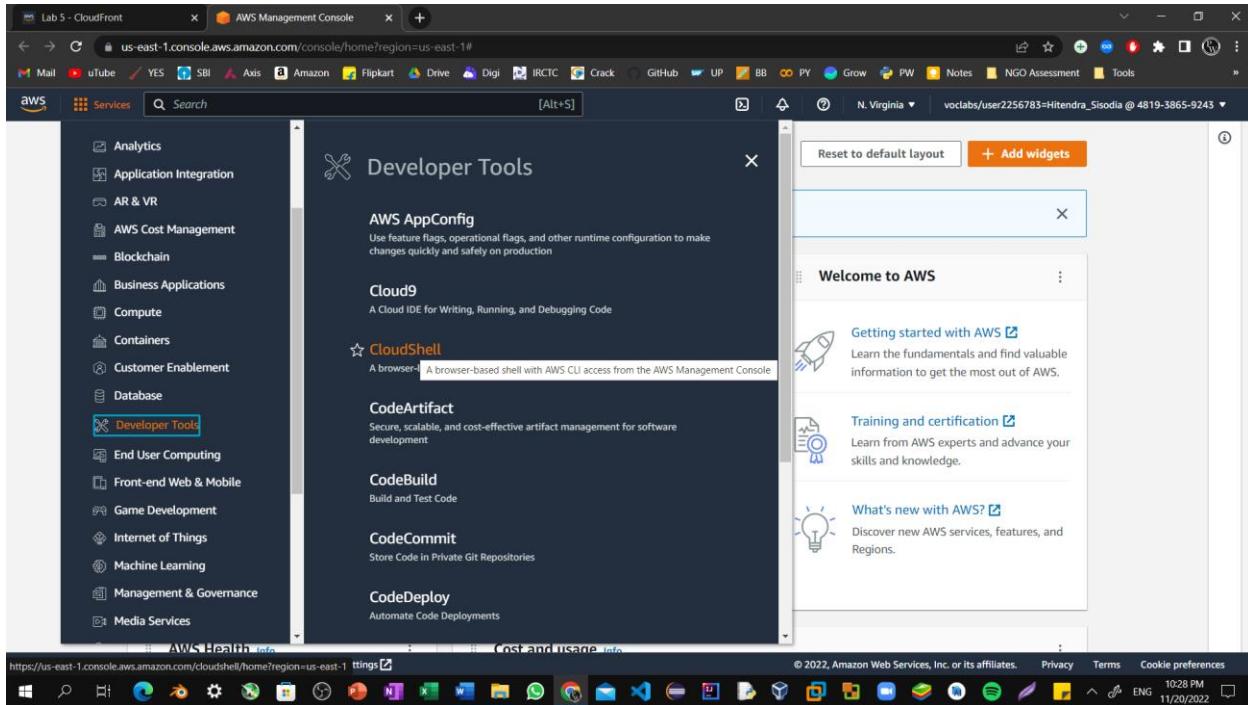


Lab 12: Using CloudFront As a CDN For A Website

Step1: To start the lab session, choose **Start Lab** in the upper-right corner of the page.

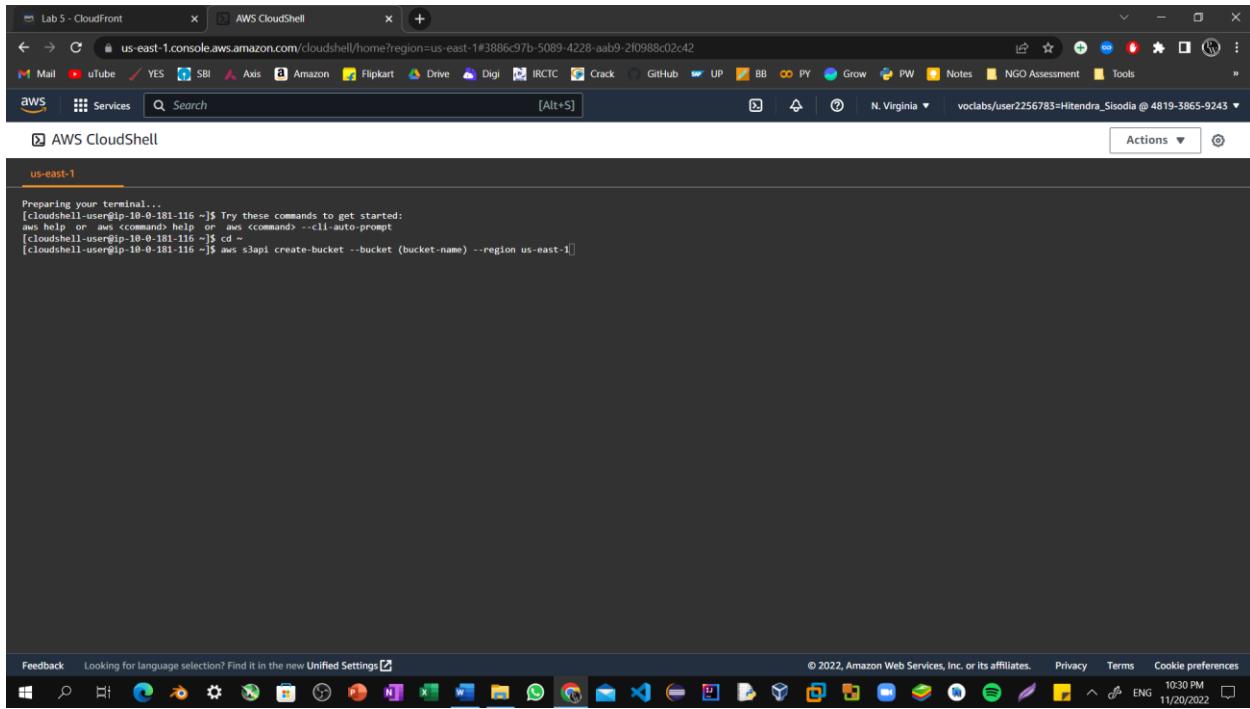


Step2: Choose the **Services** menu, locate the **Developer Tools** services, and select **CloudShell**. If a welcome pop-up window appears, choose **Close**.



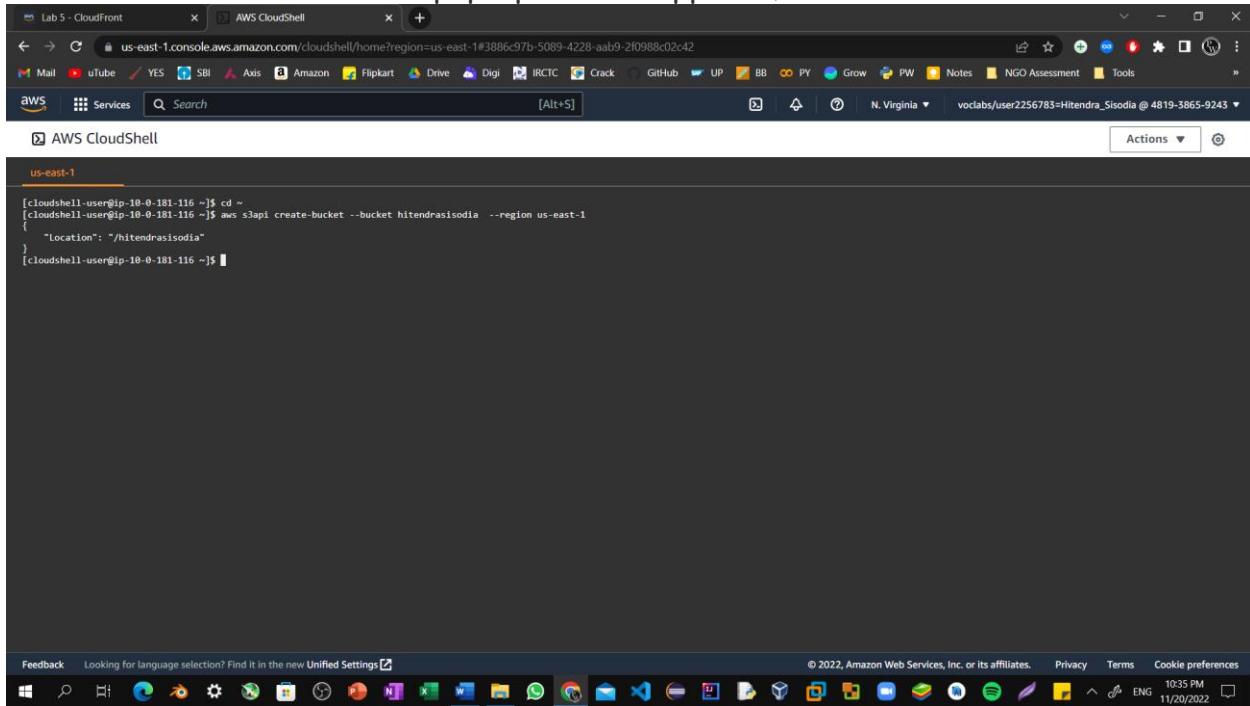
Lab 12: Using CloudFront As a CDN For A Website

Step3: Copy and paste the following code into a text editor



The screenshot shows a Windows desktop environment with a browser window titled "Lab 5 - CloudFront" open to the AWS CloudShell interface. The terminal window is titled "us-east-1". The user has run the command "aws s3api create-bucket --bucket (bucket-name) --region us-east-1" and is awaiting further input. The AWS navigation bar at the top includes links for Mail, YouTube, YES, SBI, Axis, Amazon, Flipkart, Drive, Digi, IRCTC, Crack, GitHub, UP, BB, PY, Grow, PW, Notes, NGO Assessment, and Tools. The status bar at the bottom right indicates the date as 11/20/2022 and the time as 10:30 PM.

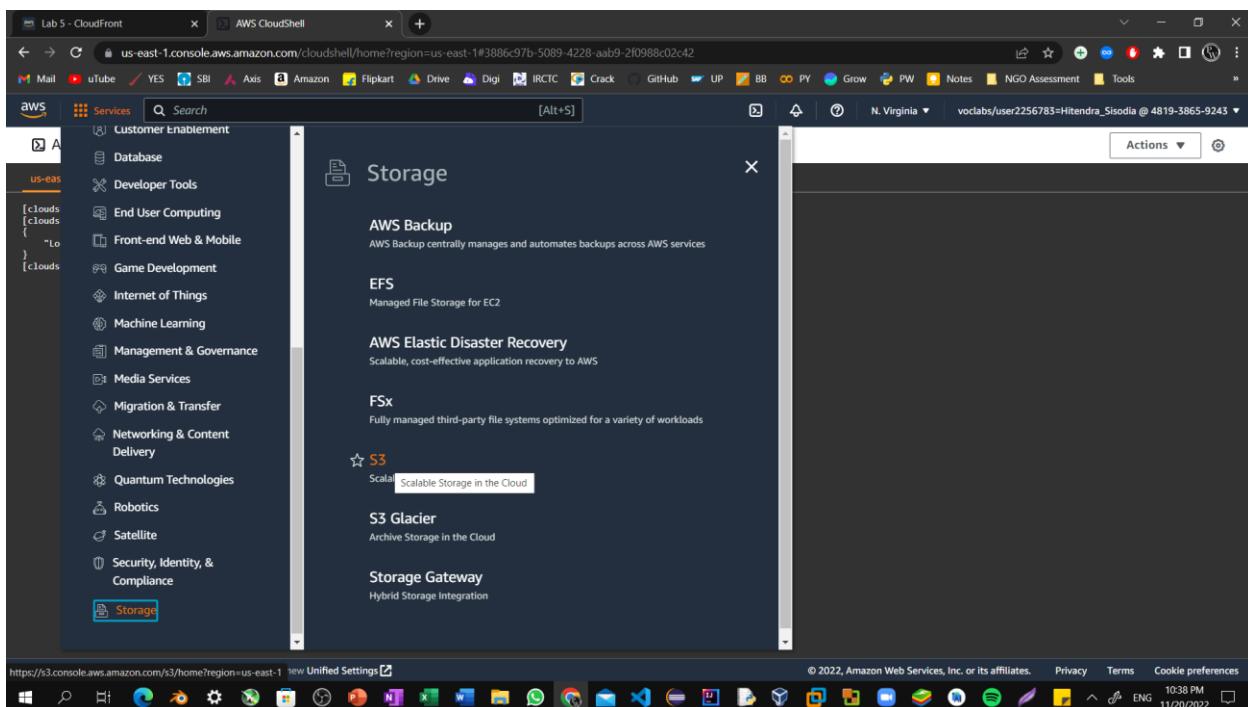
Step4: In the code that you copied, replace **(bucket-name)** with a unique Domain Name System (DNS)-compliant name for your new bucket. Run the updated code in the CloudShell terminal. If a pop-up window appears, choose Paste.



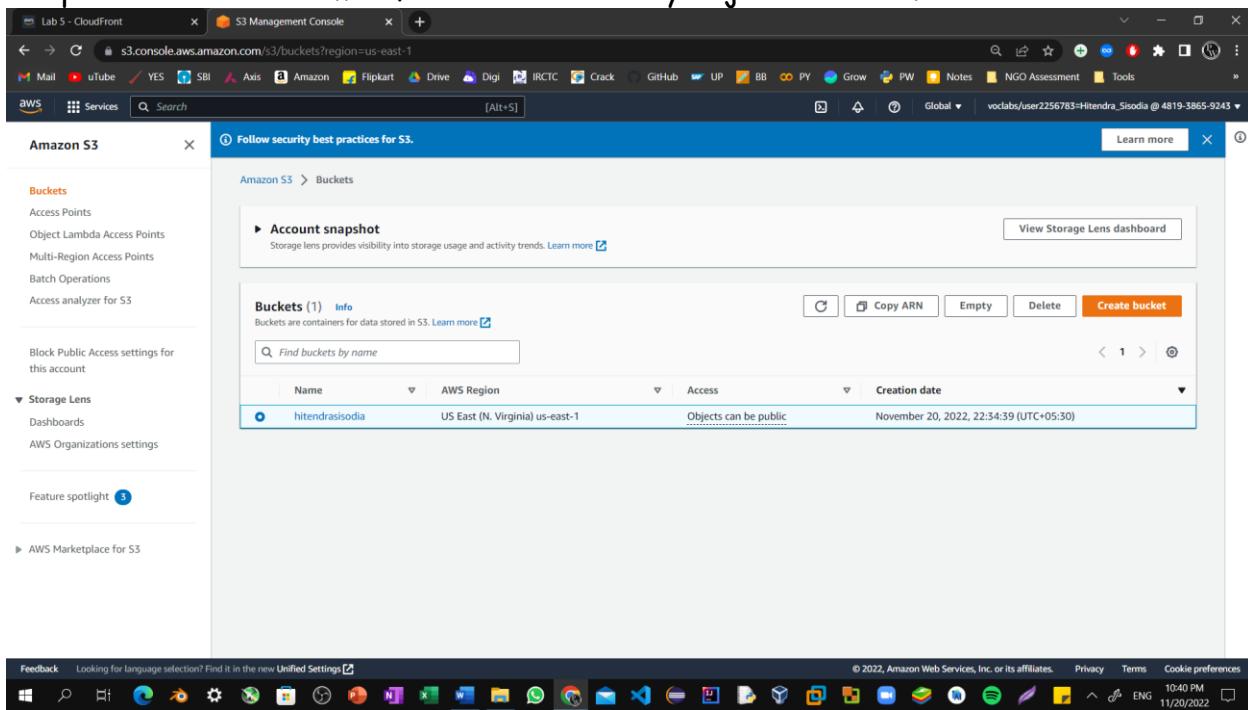
The screenshot shows the same AWS CloudShell interface as the previous one, but the user has replaced "(bucket-name)" with "hitendrasisodia". The terminal now displays the output of the command, including the location of the new bucket. The AWS navigation bar and status bar remain the same as in the previous screenshot.

Lab 12: Using CloudFront As a CDN For A Website

Step5: In the console, choose the **Services** menu, locate the **Storage** section, and choose **S3**.



Step6: Choose the name of the bucket that you just created.



Lab 12: Using CloudFront As a CDN For A Website

Step7: Choose the Permissions tab.

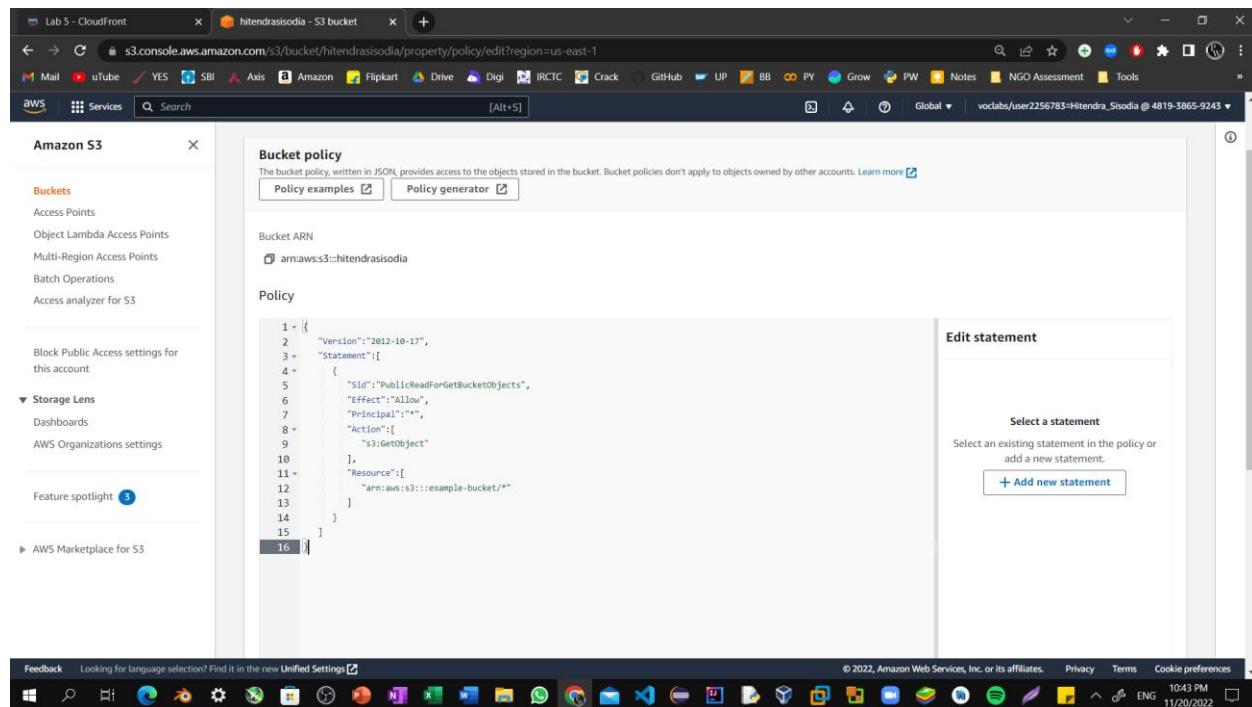
The screenshot shows the AWS S3 console with the 'Permissions' tab selected for the 'hitendrasisodia' bucket. Under the 'Block public access (bucket settings)' section, it is set to 'Off'. There is a link to 'Edit' these settings. The browser taskbar at the bottom shows various application icons and the date/time as 10:41 PM, 11/20/2022.

Step8: In the Bucket policy section, choose Edit.

The screenshot shows the AWS S3 console with the 'Bucket policy' section selected. It displays a message stating 'No policy to display.' There is an 'Edit' button available. The browser taskbar at the bottom shows various application icons and the date/time as 10:43 PM, 11/20/2022.

Lab 12: Using CloudFront As a CDN For A Website

Step9: To grant public read access for your website, copy and paste the following bucket policy into the policy editor.

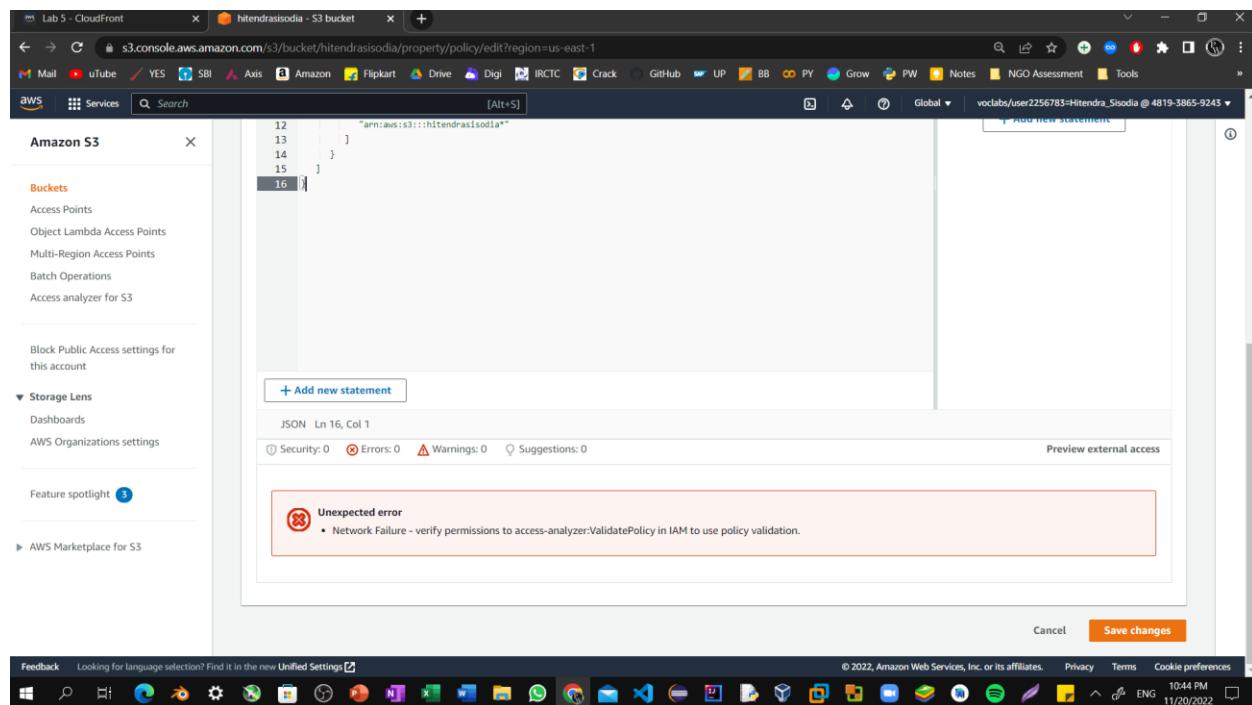


The screenshot shows the AWS S3 Bucket Policy editor. On the left, there's a sidebar with navigation links like Buckets, Storage Lens, and Feature spotlight. The main area is titled "Bucket policy" and contains a JSON code editor. The JSON code grants public read access to all objects in the bucket:

```
1 - {
2   "Version": "2012-10-17",
3   "Statement": [
4     {
5       "Sid": "PublicReadForGetBucketObjects",
6       "Effect": "Allow",
7       "Principal": "*",
8       "Action": [
9         "s3:GetObject"
10      ],
11      "Resource": [
12        "arn:aws:s3:::example-bucket/*"
13      ]
14    }
15  ]
16 }
```

To the right of the code editor is a panel titled "Edit statement" with a sub-section "Select a statement" containing a button "+ Add new statement". At the bottom of the page, there's a "Save changes" button.

Step10: In the policy, replace **example-bucket** with the name of your bucket. At the bottom of the page, choose **Save changes**.



The screenshot shows the AWS S3 Bucket Policy editor after the bucket name has been replaced. The JSON code now reads:

```
12   "Resource": [
13     "arn:aws:s3:::hitendrasisodia/*"
14   ]
15 ]
16 }
```

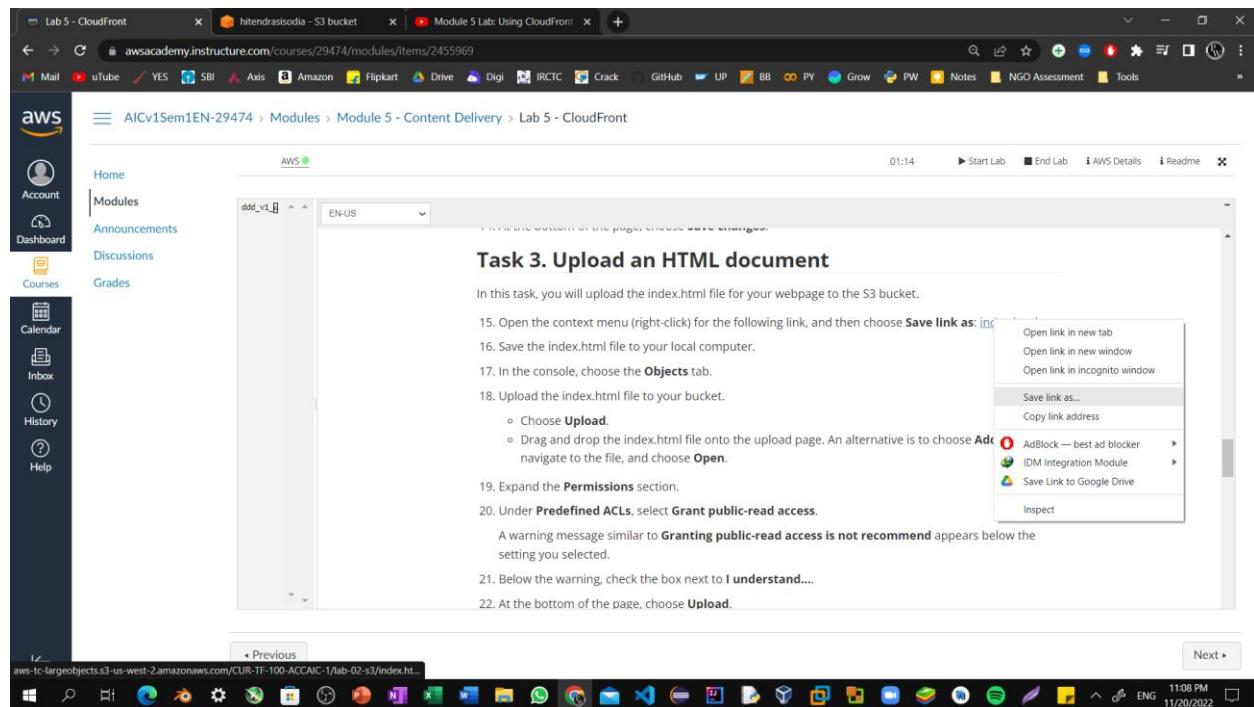
Below the code editor, there's an "Unexpected error" message box with the following details:

- Network Failure - verify permissions to access-analyzer:ValidatePolicy in IAM to use policy validation.

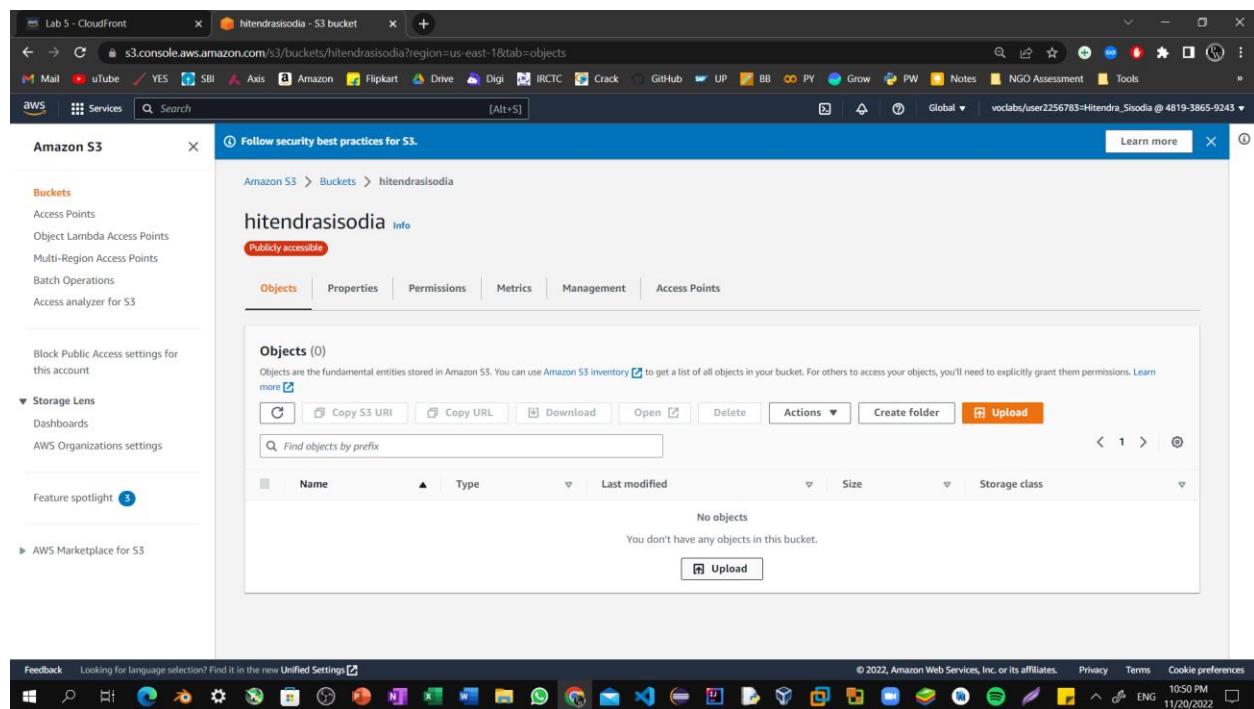
At the bottom right of the editor, there are "Cancel" and "Save changes" buttons. The status bar at the bottom of the browser window shows the time as 10:44 PM and the date as 11/20/2022.

Lab 12: Using CloudFront As a CDN For A Website

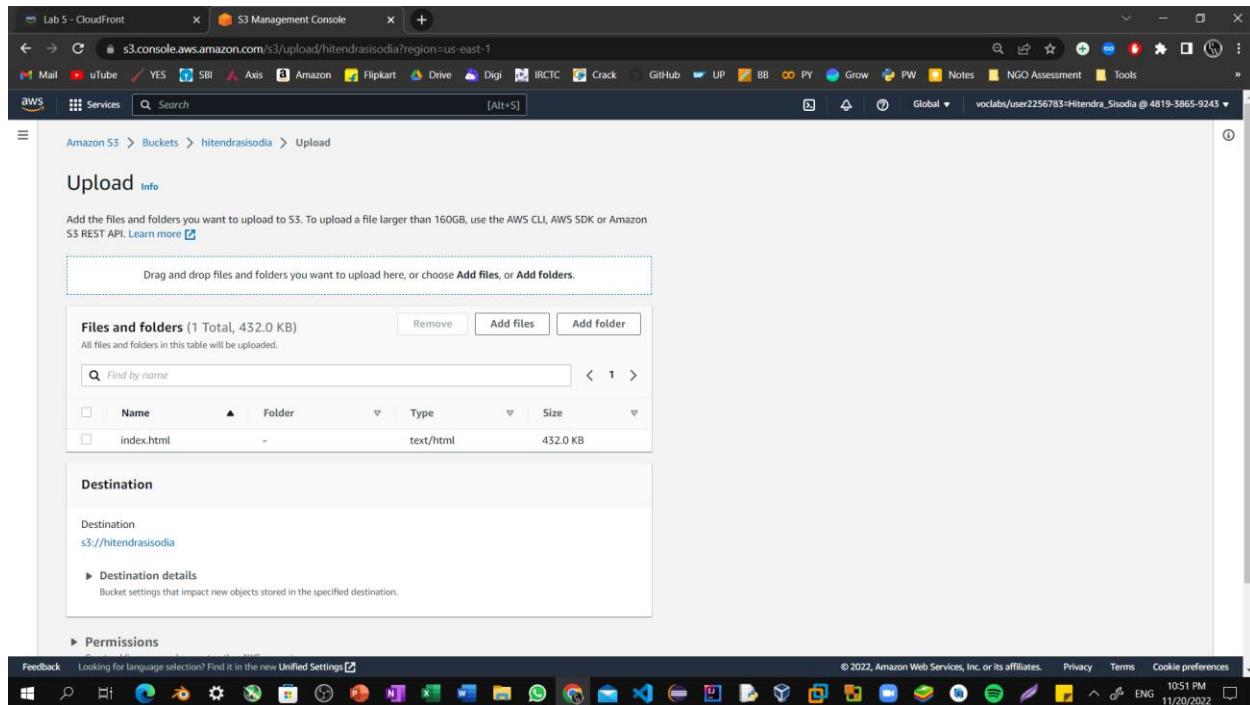
Step10: Open the context menu (right-click) for the following link, and then choose **Save link as:** index.html. Save the index.html file to your local computer.



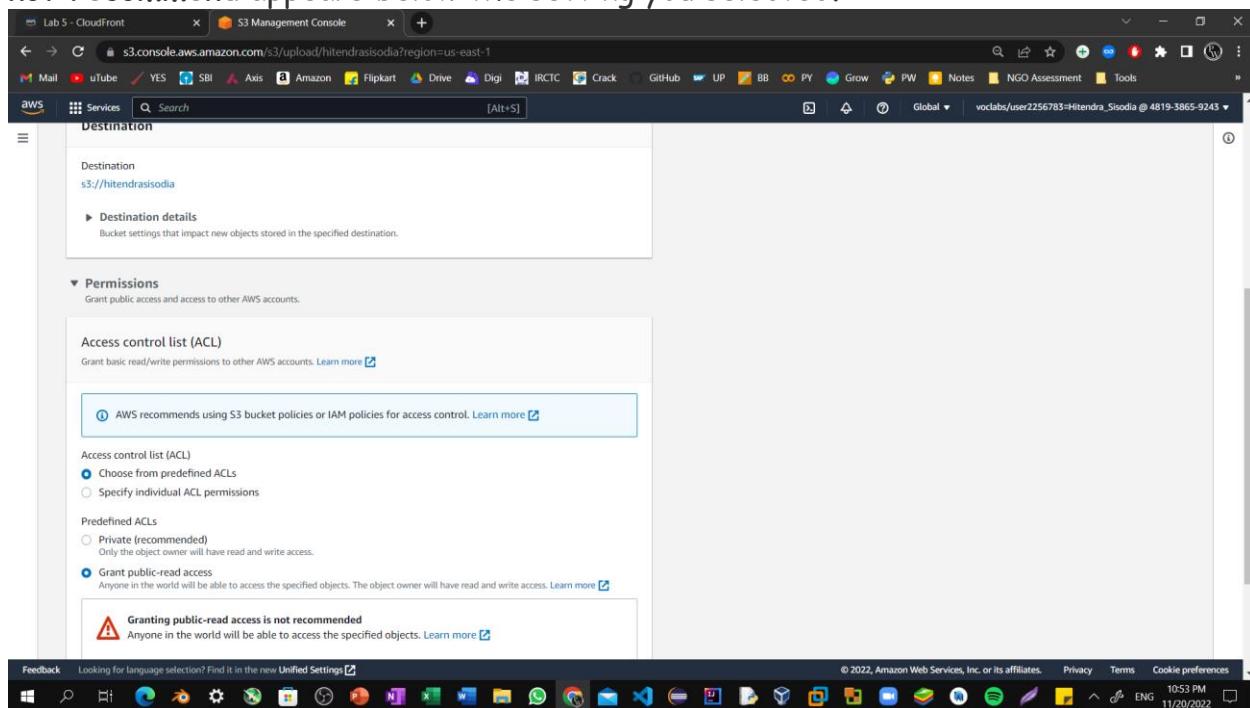
Step11: In the console, choose the **Objects** tab. Upload the index.html file to your bucket. Choose **Upload**. Drag and drop the index.html file onto the upload page.



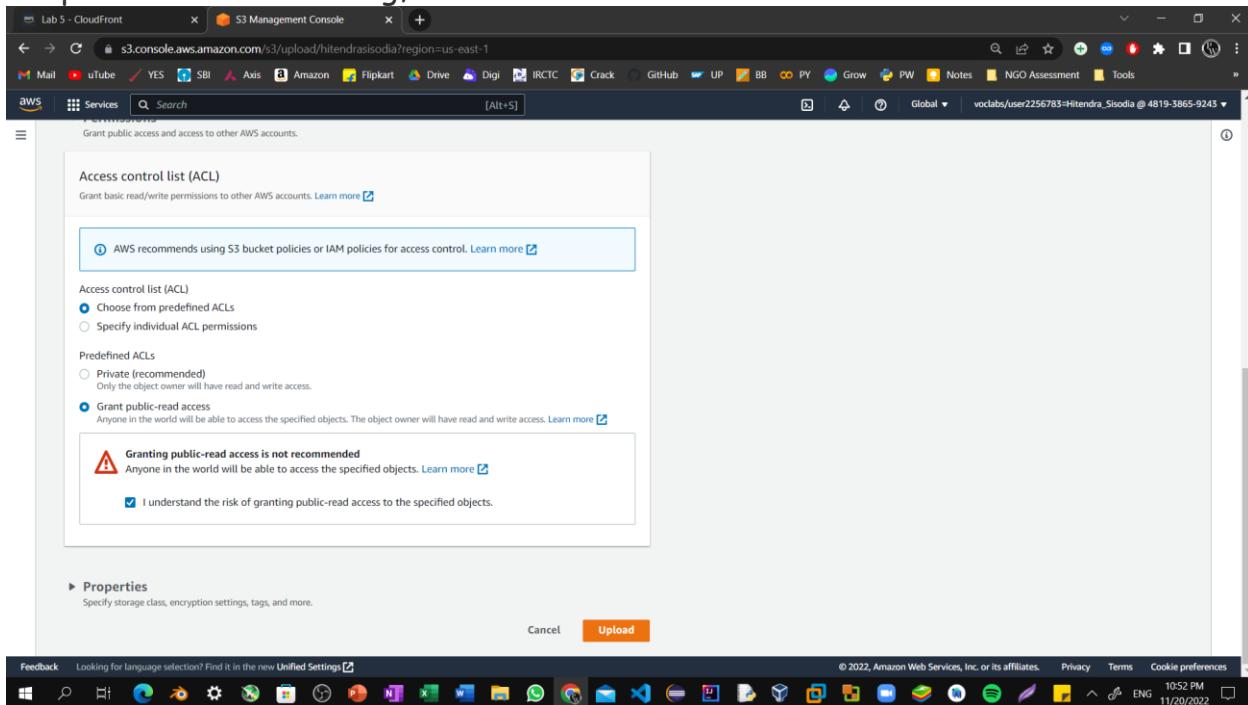
Step12: An alternative is to choose **Add files**, navigate to the file, and choose **Open**.



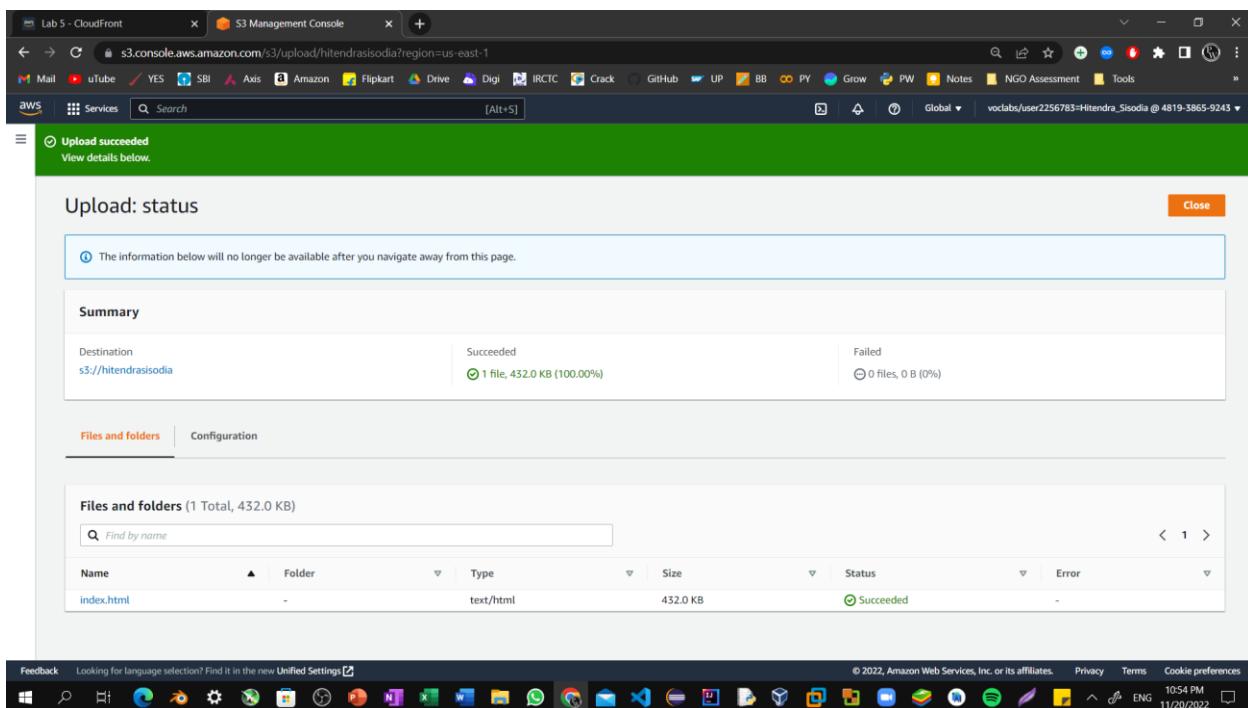
Step13: Expand the **Permissions** section. Under **Predefined ACLs**, select **Grant public-read access**. A warning message similar to **Granting public-read access is not recommended** appears below the setting you selected.



Step14: Below the warning, check the box next to I understand..



Step15: At the bottom of the page, choose Upload. Choose Close.



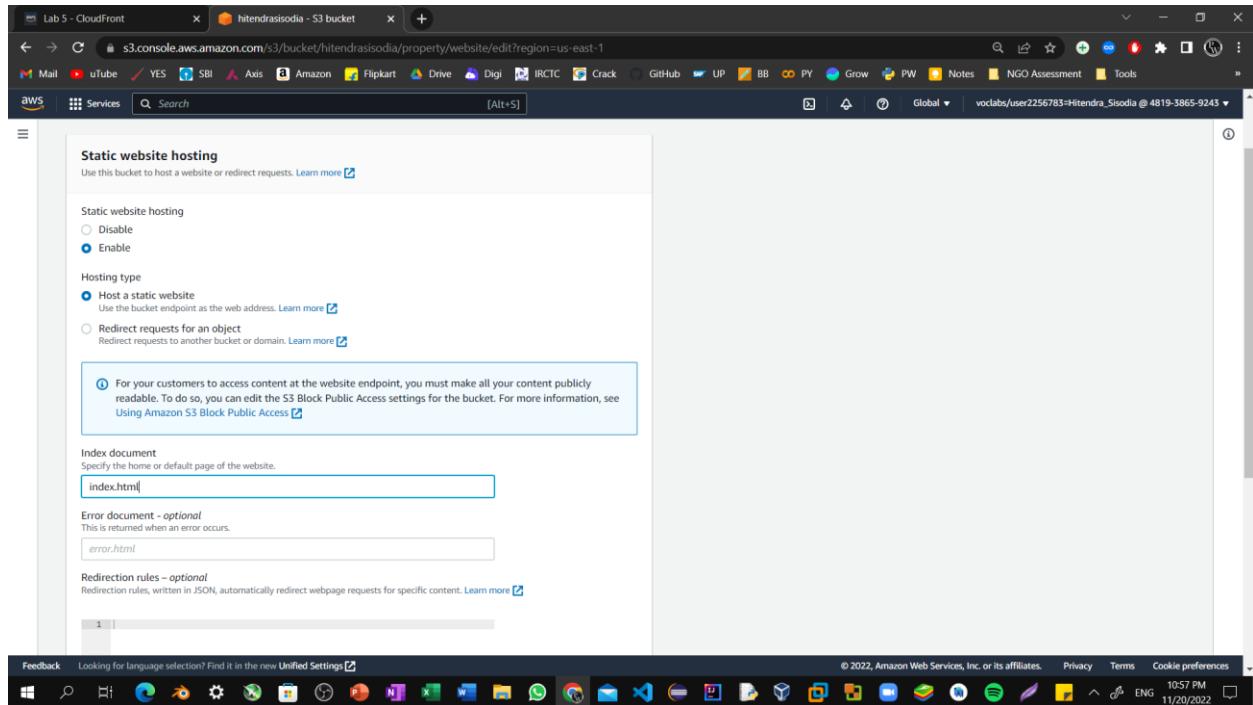
Step16: The index.html file appears in the Objects list.

The screenshot shows a browser window with the URL s3.console.aws.amazon.com/s3/buckets/hitendrasisodia?region=us-east-1&tab=objects. The page displays the 'Objects' tab for the 'hitendrasisodia' bucket. There is one object listed: 'index.html' (Type: html, Last modified: November 20, 2022, 22:54:42 (UTC+05:30), Size: 432.0 KB, Storage class: Standard). The object is marked as 'Publicly accessible'. Other tabs include Properties, Permissions, Metrics, Management, and Access Points. The browser's address bar shows the full URL, and the taskbar at the bottom includes icons for various applications like Mail, YouTube, and Google Drive.

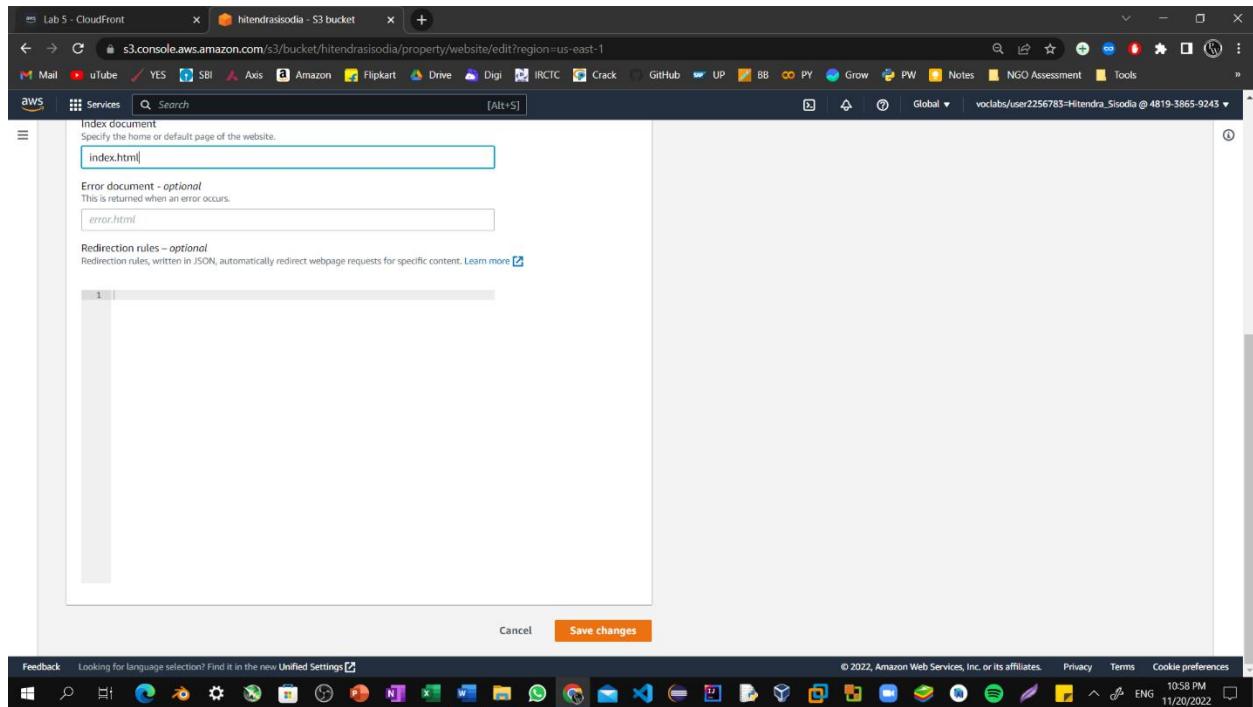
Step17: Select the **Properties** tab, and scroll down to the **Static website hosting** section. Choose **Edit**.

The screenshot shows the 'Properties' tab for the 'hitendrasisodia' bucket. The 'Object Lock' section indicates 'You don't have permission to get Object Lock details'. The 'Requester pays' section is set to 'Disabled'. The 'Static website hosting' section is also present. The 'Edit' button for the static website hosting section is highlighted. The browser's address bar shows the full URL, and the taskbar at the bottom includes icons for various applications like Mail, YouTube, and Google Drive.

Step18: Select **Enable**. In the **Index document** text box, enter **index.html**



Step19: Select **Save changes**.



Step20: Scroll down to the **Static website hosting** section again, and copy the **Bucket website endpoint URL** to your clipboard.

The screenshot shows the AWS S3 console for a bucket named 'hitendrasisodia'. In the 'Static website hosting' section, the 'Enabled' option is selected. Below it, the 'Bucket website endpoint' is listed as <http://hitendrasisodia.s3-website-us-east-1.amazonaws.com>. A red box highlights this URL.

Step21: Open a new tab in your web browser, paste the URL you just copied, and press **Enter**. The **Hello World** webpage should display. You have successfully hosted a static website using an S3 bucket!

The screenshot shows a web browser window with the URL <http://hitendrasisodia.s3-website-us-east-1.amazonaws.com>. The page displays the text "Hello World. Take me to your leader." A red box highlights this text.



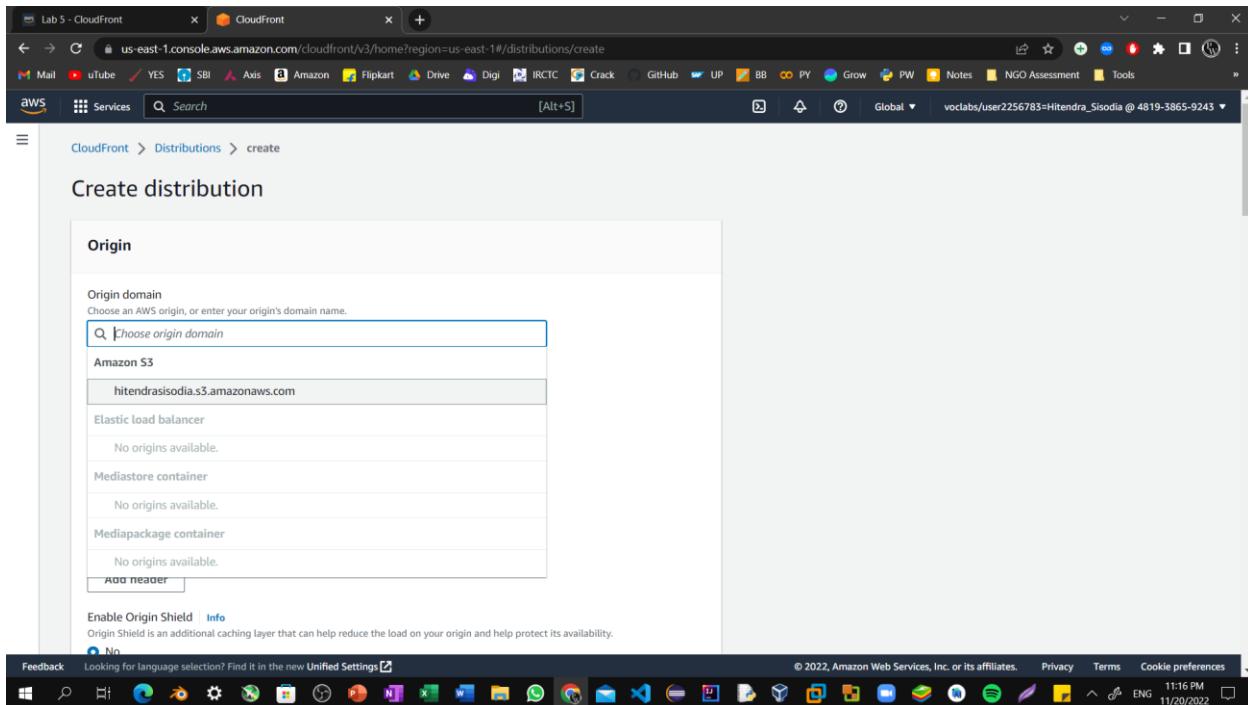
Step22: Choose the **Services** menu, locate the **Networking & Content Delivery** section, and choose **CloudFront**.

The screenshot shows the AWS Management Console interface. The top navigation bar has tabs for 'Lab 5 - CloudFront' and 'hitendrasisodia - S3 bucket'. Below the navigation bar is a toolbar with various icons. The main area is titled 'Networking & Content Delivery'. On the left, there's a sidebar with a tree view of AWS services, where 'Networking & Content Delivery' is expanded and highlighted with a yellow box. Underneath it, 'CloudFront' is also highlighted with a yellow box. Other services listed include API Gateway, AWS App Mesh, AWS Cloud Map, Direct Connect, Global Accelerator, AWS Private 5G, Route 53, and Route 53 Application Recovery Controller.

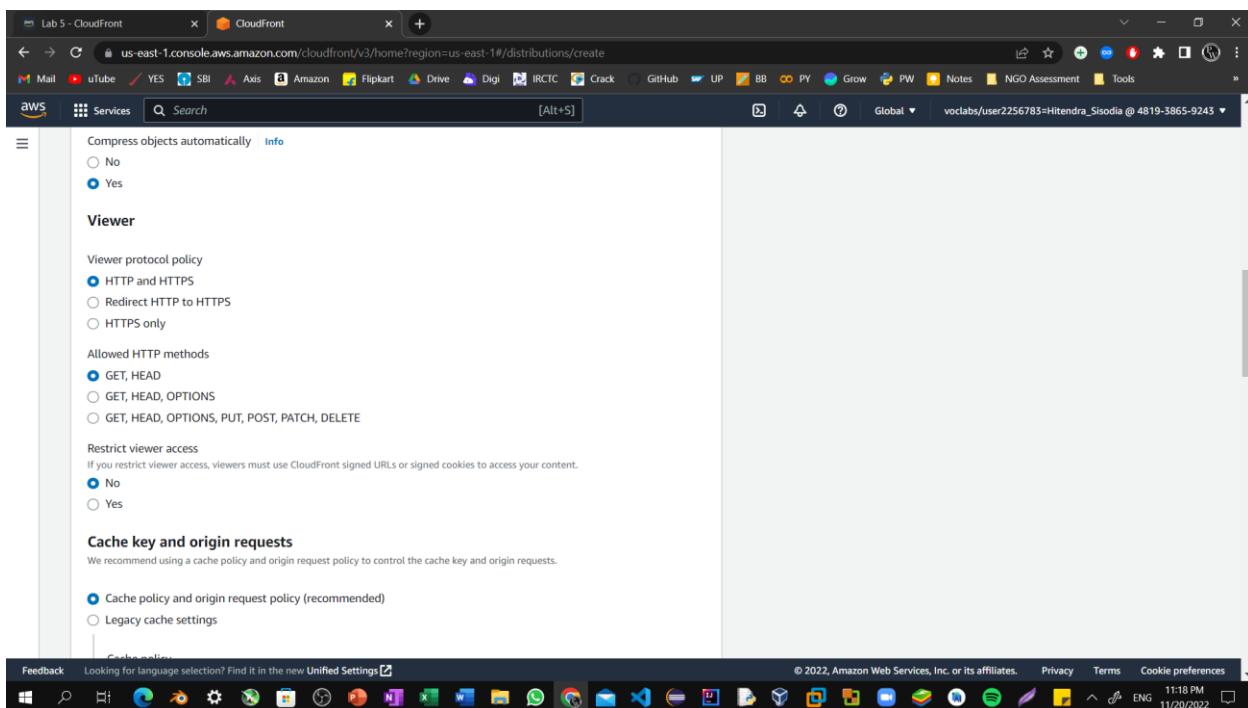
Step23: Choose **Create Distribution**.

The screenshot shows the Amazon CloudFront landing page. The URL in the address bar is 'us-east-1.console.aws.amazon.com/cloudfront/v3/home?region=us-east-1#/welcome'. The main heading is 'Amazon CloudFront' with the subtext 'Securely deliver content with low latency and high transfer speeds'. Below this, a paragraph describes CloudFront as a fast content delivery network (CDN) service. To the right, there's a 'Get started with CloudFront' section with a 'Create a CloudFront distribution' button. Another section titled 'AWS Free Tier' lists benefits like 1 TB of data transfer out, 10,000,000 HTTP or HTTPS requests, 2,000,000 CloudFront Function invocations, and 'Each month, always free'. At the bottom, there's a 'Benefits and features' section with two boxes: 'Reduce latency' and 'Improve security'. The 'Reduce latency' box states that the CloudFront network has 225+ points of presence (PoPs) connected by a redundant, parallel 100 GbE fiber, delivering ultra-low latency performance. The 'Improve security' box states that CloudFront uses perimeter protection, traffic encryption, and access controls, with AWS Shield Standard defending traffic from DDoS attacks.

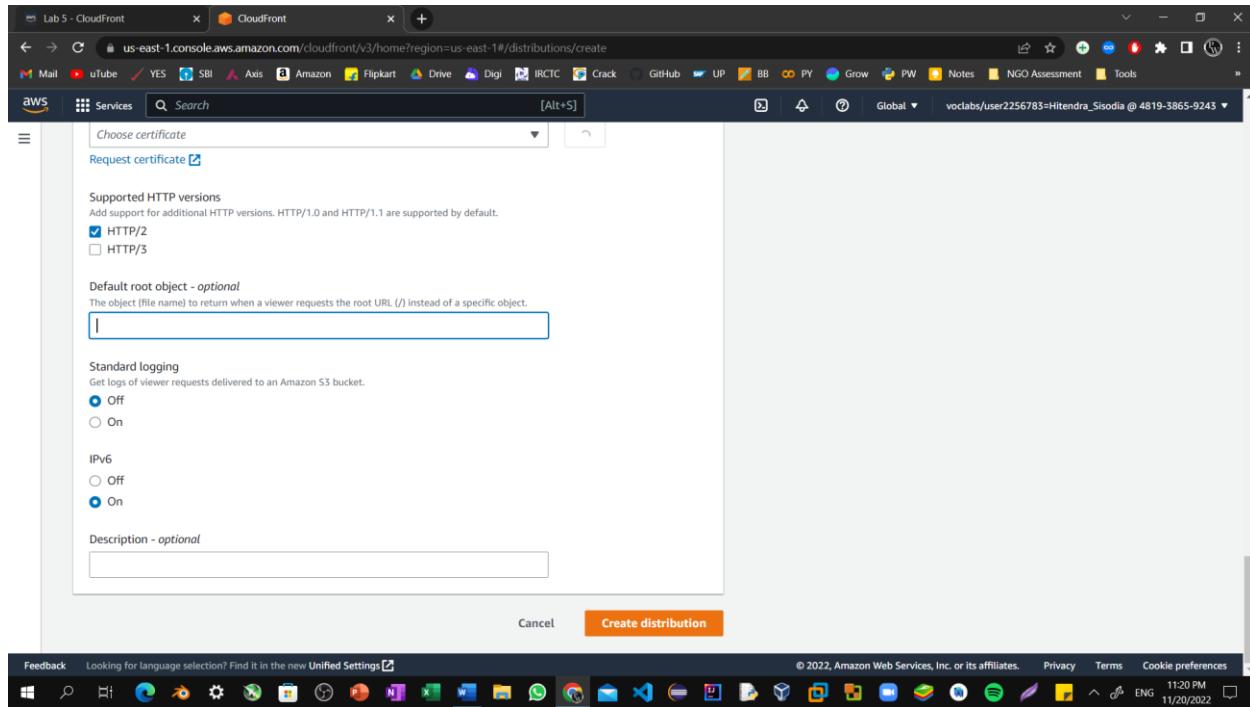
Step24: Choose the text box next to **Origin Domain Name** and select the endpoint from your S3 bucket.



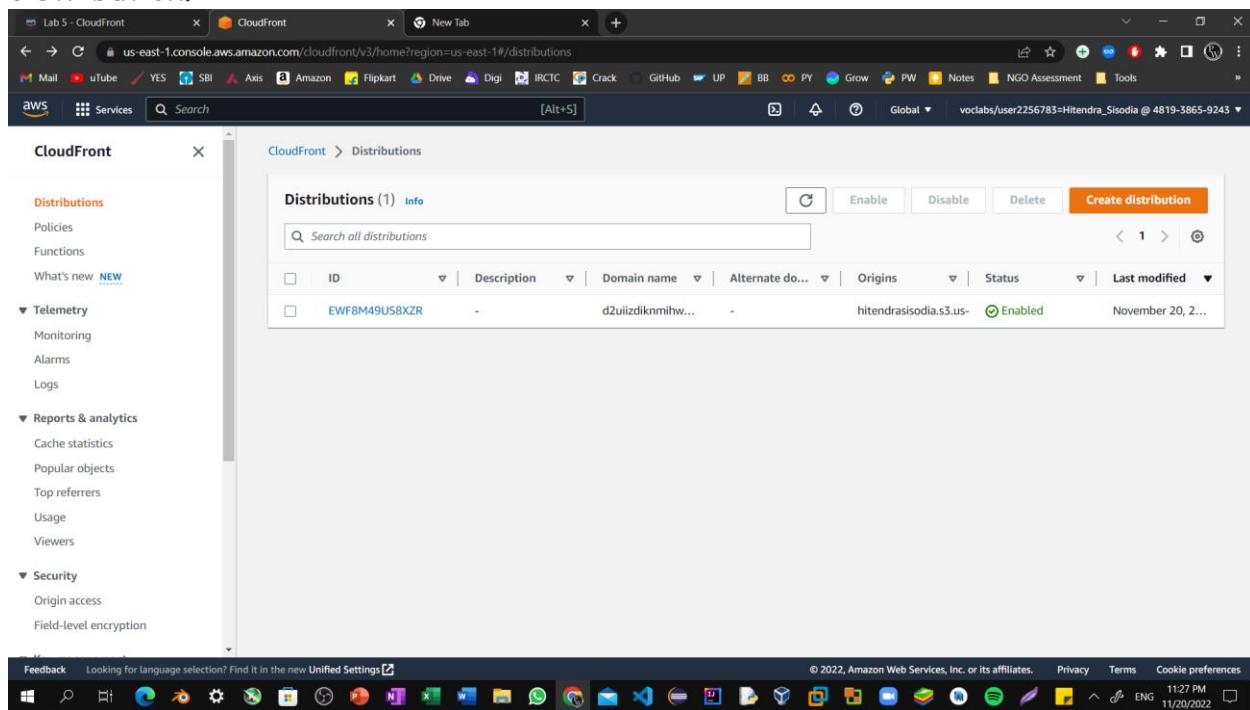
Step25: For **Viewer Protocol Policy**, ensure that **HTTP and HTTPS** is selected.



Step26: Scroll to the bottom of the page and select **Create Distribution**.

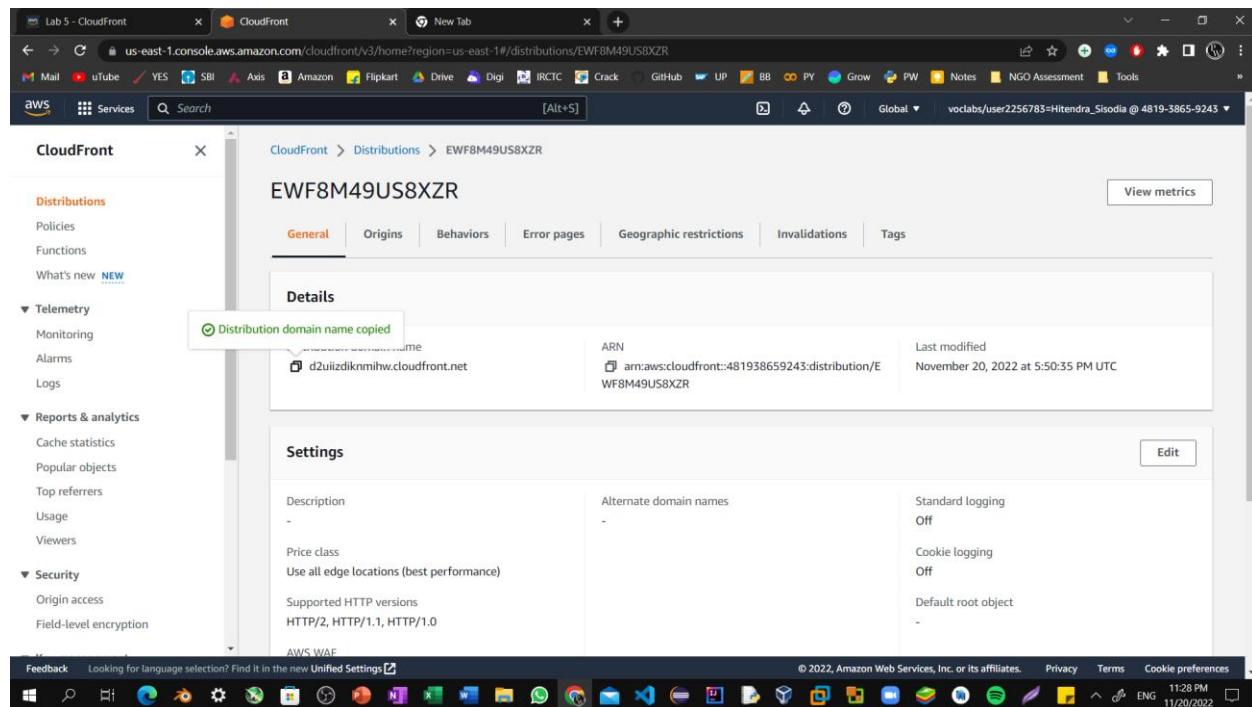


Step27: A new CloudFront distribution displays in the distributions list.
The **Status** will say *In Progress* until your website has been distributed. This may take up to 20 minutes. When the **Status** says *Deployed*, you can test your distribution.

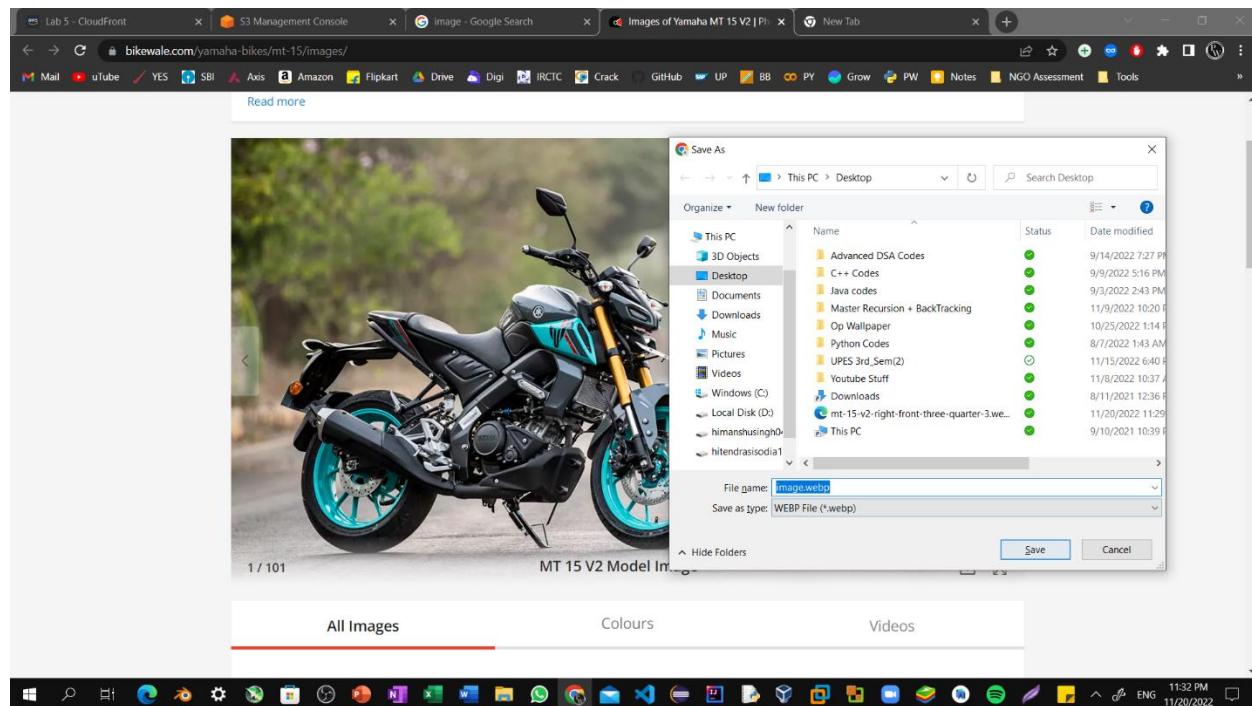


Lab 12: Using CloudFront As a CDN For A Website

Step28: Copy the Domain Name value for your distribution and save it to a text editor to use in a later step.



Step29: Create a new HTML file to test the distribution. Find and download an image from the internet.



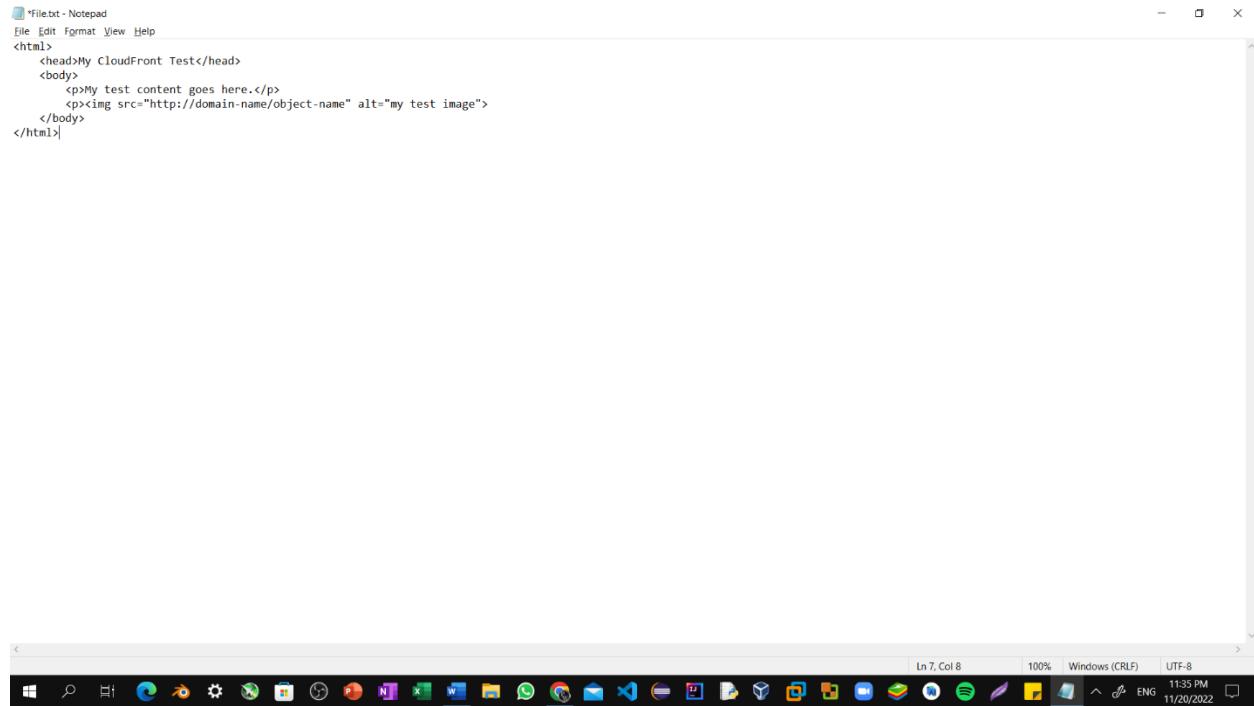
Step30: Navigate to your S3 bucket and upload the image file to it.

The screenshot shows the AWS S3 Management Console interface. The user is navigating through the 'Amazon S3 > Buckets > hitendrasisodia > Upload' path. On the 'Upload' page, there is a large central area for dragging and dropping files or adding them via 'Add files' or 'Add folder'. Below this, a table lists the uploaded file: 'image.webp' (105.9 KB). The 'Destination' section shows the target bucket as 's3://hitendrasisodia'. The 'Permissions' section is partially visible at the bottom. The browser taskbar at the bottom shows various open tabs and system icons.

Step31: Making sure to grant public access as you did when uploading the HTML file earlier in this lab.

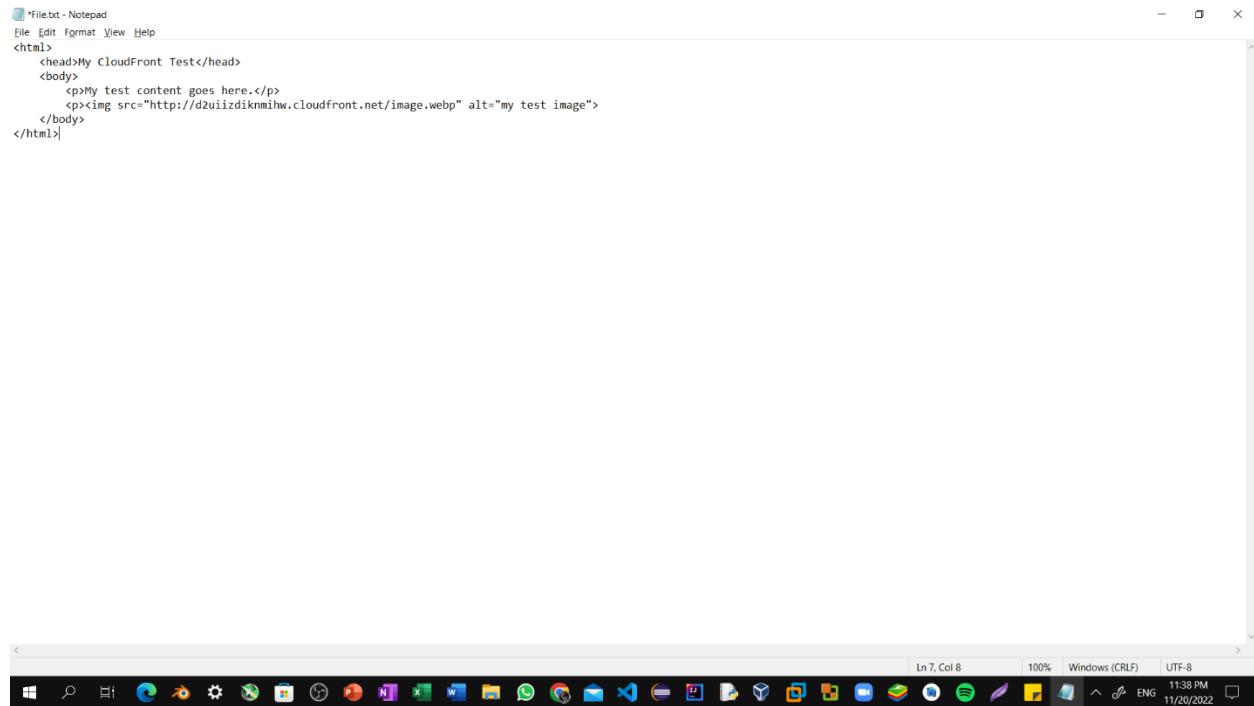
The screenshot shows the 'Access control list (ACL)' configuration page. It starts with a note about using bucket policies or IAM policies for access control. The 'Choose from predefined ACLs' option is selected. Under 'Predefined ACLs', 'Grant public-read access' is chosen, which is highlighted with a warning message: 'Granting public-read access is not recommended' and 'Anyone in the world will be able to access the specified objects.' A checkbox for accepting this risk is checked. Below this, the 'Properties' section is partially visible, along with a prominent orange 'Upload' button. The browser taskbar at the bottom shows various open tabs and system icons.

Step32: Create a new text file using Notepad and copy the following text into it.



```
<html>
<head>My CloudFront Test</head>
<body>
    <p>My test content goes here.</p>
    <p></p>
</body>
</html>
```

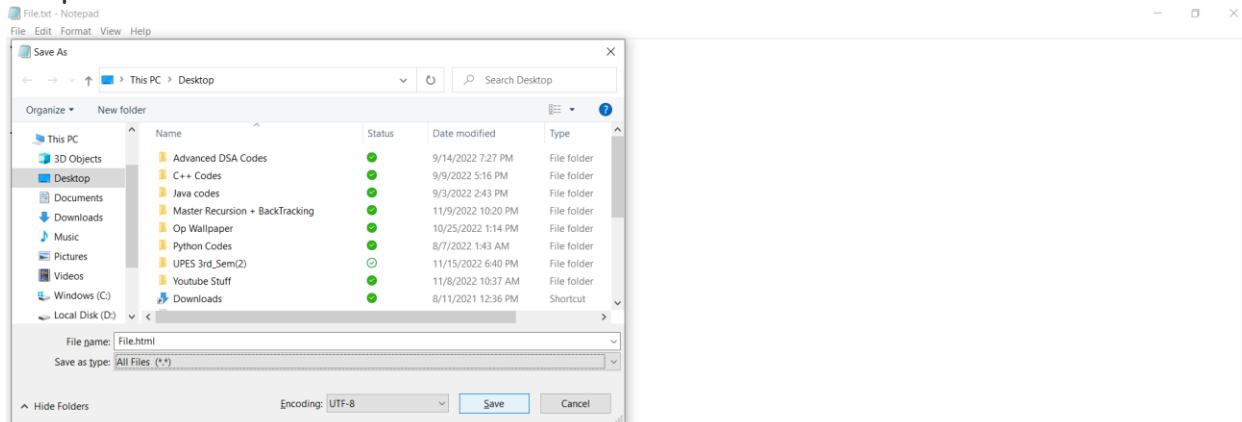
Step33: Replace **domain-name** with the domain name that you copied earlier for your CloudFront distribution. Replace **object-name** with the file name of the picture file that you uploaded to your S3 bucket.



```
<html>
<head>My CloudFront Test</head>
<body>
    <p>My test content goes here.</p>
    <p></p>
</body>
</html>
```

Lab 12: Using CloudFront As a CDN For A Website

Step34: Save the text file with an HTML extension.



Step35: Use an internet browser to open the HTML file that you just created. If the image that you uploaded shows, your CloudFront distribution was successful. If not, repeat the lab.

