

AWS MINI PROJECT 1

LAB1: IAM HANDS-ON

Log in to aws management console and sign in to the aws management console as the root user.

On the right hand side corner we have our account details in that we have security and credentials click on that the below tab will be open.

The screenshot shows the AWS IAM Security Credentials page for the root user. The left sidebar includes options like Dashboard, Access management, Roles, Policies, Identity providers, Account settings, Access reports, Access Analyzer, External access, Unused resources, Analyzer settings, Credential report, Organization activity, Service control policies, and Related consoles. The main content area is titled "My security credentials" and shows a message: "You don't have MFA assigned. As a security best practice, we recommend you assign MFA." Below this is the "Account details" section, which lists the account name as "Spandana", the AWS account ID as "63742550105", and the canonical user ID as "7efcb96bdf603fa9b367e4bd1ba1ea47d19121ad48de4b482154e6bee0a7a4d". There is a button to "Edit account name, email, and password". The "Multi-factor authentication (MFA) (0)" section contains a table with columns Type, Identifier, Certifications, and Created on. A note says "No MFA devices. Assign an MFA device to improve the security of your AWS environment." A "Assign MFA device" button is present. At the bottom, there is an "Access keys (0)" section with a "Create access key" button. The footer includes links for CloudShell, Feedback, Create access key, Privacy, Terms, and Cookie preferences.

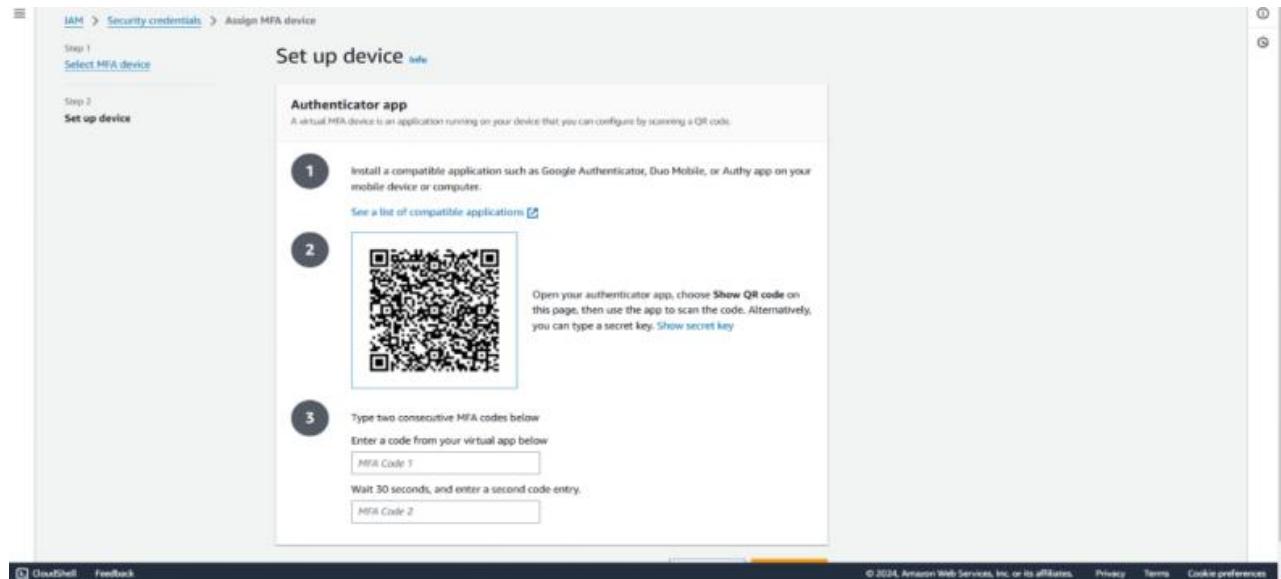
After that we have to click on multi-factor authentication (MFA) Click on Assign MFA.

There are three types of Authentication methods for AWS console management account

1. Authentication app
2. Security Key
3. Hardware TOTP token

I have selected Authentication app for MFA , First we need to install Authy app on our mobiles so that we can able to do the further process. We need to give a name for MFA, and in the AWS console, a QR code will be displayed. Use the authentication app for the scan this QR code.

If our app does not support for the scanning we need to enter the provided secret key manually. The app will start generating the 6 digit codes. Enter the first code in MFA Code 1 and wait for the second code and enter in the place of MFA Code 2



After Entering all the Information we need to confirmation so we will see the conformation message indicating that the MFA device assigned.

We will see the one change in the MFA and if we want to check that we have to logout our AWS management console and we need to login again it will ask for the MFA Code for those who choose Authentication app.

The screenshot shows the AWS IAM dashboard with the following details:

- Identity and Access Management (IAM)** sidebar
- Account details** section:

Account name	Email address
PRAVALIKA	amogthpravalika1@gmail.com
AWS account ID	Canonical user ID
058264135441	2f9c8c13a2751fd27f9d60eed735df876c4697ed34ebab4624ffb3868565e1c
- Multi-factor authentication (MFA) (1)** section:

Type	Identifier	Certifications	Created on
Passkeys and security keys	arn:aws:iam::058264135441:u2f/root/my_personal_mfa-PUHTEPRZWNFZ7AZF5LJV5KHPYI	1	Mon Oct 28 2024
- Access keys (0)** section: No access keys assigned.

2.Creating a New user with access and check its default permissions.

In the IAM dashboard we will see users in the left panel.

The screenshot shows the AWS IAM Dashboard. On the left, a sidebar lists navigation options like Dashboard, Access management, and Access reports. The main area displays 'Security recommendations' with two items: 'Root user has MFA' and 'Root user has no active access keys'. Below this is an 'IAM resources' summary table:

User groups	Users	Roles	Policies	Identity providers
1	1	10	1	0

On the right, there's a 'AWS Account' section with account ID (058264135441), alias (pravalka-cloud), and sign-in URL (https://pravalka-cloud.sigin.aws.amazon.com/console). A 'Quick Links' section includes a 'My security credentials' link.

Click on the Users which is there below the user groups.

The screenshot shows the 'Users' page under the IAM service. The sidebar shows 'Users' is selected. The main table lists one user:

User name	Path	Groups	Last activity	MFA	Password age	Console last sign-in
pravalka	/	0	-	-	9 days	9 days

When we click on the Create user this page will be open in this page we need to Enter our Username for new user and select AWS management console access and set a custome password for security purpose. If we select the

Autogenerated password we can able to see that password after creation of user. So we will choose custom password for privacy and security purpose.

We will click on the check box below show password that is Users must create a new password at next sign in it is recommended for the security purpose. After that review and then Create user after creation we will see user's access key and secret access key save these credentials securely.

Check Default Permissions:

After creation of user click the user of newly created IAM user for which we want to check the default permissions. We will move to the user details page, Click on the permissions tab. The permissions tab is nothing but below image. Default permissions for the user is **IAMUserChangePassword** this is the default permission for the user.

The screenshot shows the AWS IAM User Details page for a user named 'pravalika'. The 'Permissions' tab is selected. Under 'Permissions policies (8)', there is a single policy listed: 'AmazonEC2ContainerRegistryFullAccess' (AWS managed). This indicates that the user has full access to the Amazon EC2 Container Registry.

4. Assign full permissions to the user

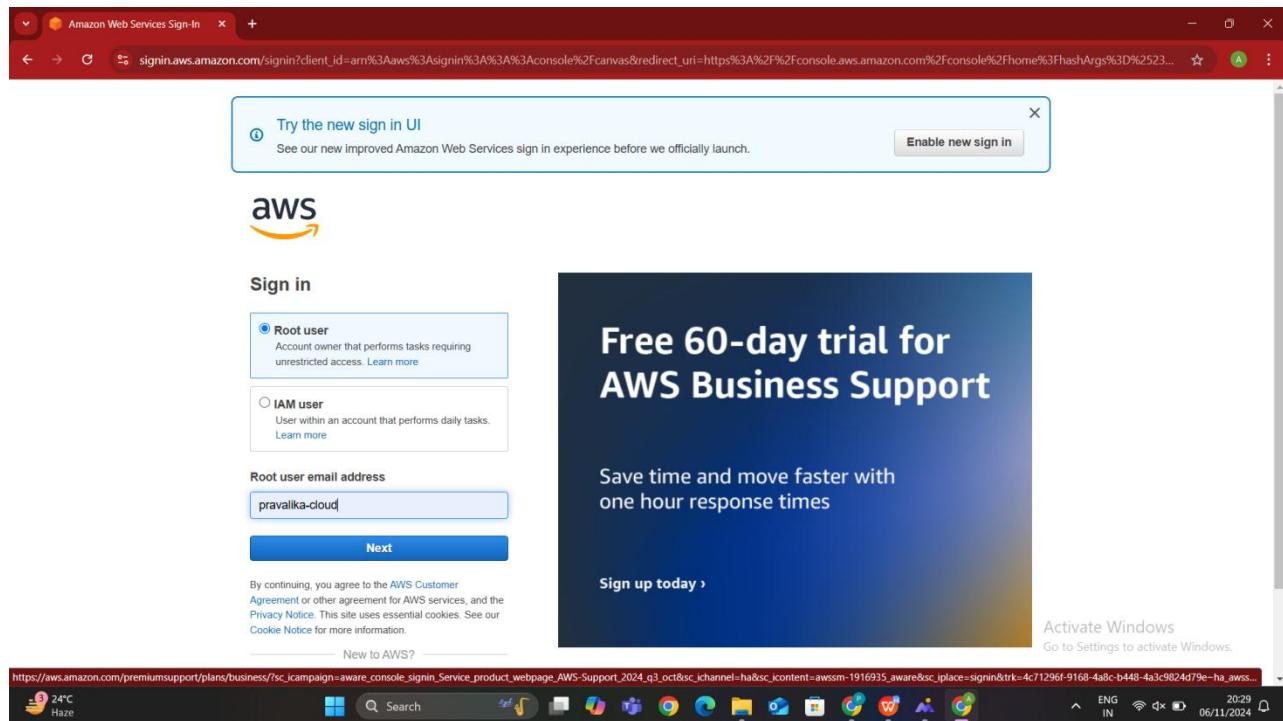
We can able to see the Add Permissions click on Add Permissions > Attach existing policies directly.

The screenshot shows the AWS IAM 'Add permissions' page for a user named 'pravalika'. At the top, there are three options: 'Add user to group', 'Copy permissions', and 'Attach policies directly'. The 'Attach policies directly' option is selected. Below this, a search bar and filter are used to find 'amazonec2'. A table lists various AWS managed policies, with 'AmazonEC2FullAccess' checked. The table includes columns for 'Policy name', 'Type', and 'Attached entities'. The 'AmazonEC2FullAccess' row is highlighted.

In the search bar, type **AmazonEC2FullAccess** and check the box next to the policy. Click Next and then Add permissions.

The screenshot shows the AWS IAM user summary for 'pravalika'. On the left, a sidebar lists 'Identity and Access Management (IAM)' sections: Dashboard, Access management (Users, Roles, Policies, Identity providers, Account settings), and Access reports (Access Analyzer, External access, Unused access, Analyzer settings, Credential report, Organization activity). The 'Users' section is selected. The main area shows a summary for 'pravalika' with details like ARN, Console access (Enabled without MFA), and Access key 1. Below this, the 'Permissions' tab is selected, showing a table of attached policies. One policy, 'AmazonEC2ContainerRegistryFullAccess', is listed under 'Attached via Directly'.

Log in as the new user: Use the credentials of the new user to log in to the AWS Management console.



If we check the access to EC2 we can able to perform EC2 related tasks and we have all permissions to access EC2 but when we navigate to other services like IAM, S3 and confirm that we do not have access because EC2 full permissions should restrict access to other services.

Summary		
ARN arn:aws:iam::058264135441:user/pinky	Console access Disabled	Access key 1 Create access key
Created November 06, 2024, 20:32 (UTC+05:30)	Last console sign-in -	

Permissions	Groups	Tags	Security credentials	Last Accessed
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Permissions policies (1)

Policy name	Type	Attached via
AmazonEC2FullAccess	AWS managed	Directly

4.PROVIDING ADMINISTRATIVE PERMISSIONS TO THE USER.

Go back to the IAM dashboard and select the user again click on the Permissions tab click on Add permissions > Attach existing policies directly and search for **AdministratorAccess** and select that policy click next and then Add permissions.

Permissions options

- Add user to group
- Copy permissions
- Attach policies directly

Permissions policies (1/1249)

Policy name	Type	Attached entities
<input checked="" type="checkbox"/> AdministratorAccess	AWS managed - job function	1
<input type="checkbox"/> AdministratorAccess-Amplify	AWS managed	0
<input type="checkbox"/> AdministratorAccess-AWSElasticBea...	AWS managed	0
<input type="checkbox"/> AmazonAPIGatewayAdministrator	AWS managed	0
<input type="checkbox"/> AmazonSecurityLakeAdministrator	AWS managed	0
<input type="checkbox"/> AWSAppSyncAdministrator	AWS managed	0
<input type="checkbox"/> AWSAuditManagerAdministratorAcc...	AWS managed	0

Identity and Access Management (IAM)

Permissions

1 policy added

Permissions policies (2)

Policy name	Type	Attached via
<input type="checkbox"/> AdministratorAccess	AWS managed - job function	Directly
<input type="checkbox"/> AmazonEC2FullAccess	AWS managed	Directly

Permissions boundary (not set)

Generate policy based on CloudTrail events

You can generate a new policy based on the access activity for this user, then customize, create, and attach it to this role. AWS uses your CloudTrail events to identify the services and actions used and generate a policy. [Learn more](#)

[Generate policy](#)

The screenshot shows the AWS IAM User Details page for a user named 'pravalika'. The user has been created on October 28, 2024, at 10:52 (UTC+05:30). They have console access enabled without MFA. There is one attached policy, 'AmazonEC2ContainerRegistryFullAccess', which is AWS managed and attached directly. The 'Permissions' tab is selected. The browser interface includes a search bar, a sidebar with navigation links like 'Dashboard', 'Access management', and 'Access reports', and a bottom navigation bar with links like 'CloudShell', 'Feedback', and system status.

Login to the AWS Management console again as the user and confirm that now we have access to all services including the ability to manage IAM users and roles.

The screenshot shows the AWS IAM Dashboard. On the left, the navigation menu includes sections like Identity and Access Management (IAM), Access management, Access reports, and IAM resources. The main area displays 'Security recommendations' with two items: 'Root user has MFA' and 'Root user has no active access keys'. Below this is the 'IAM resources' section, which shows 1 User group, 2 Users, 10 Roles, 1 Policies, and 0 Identity providers. A 'What's new' section is also present. To the right, there are panels for the 'AWS Account' (Account ID: 058264135441, Account Alias: pravalka-cloud) and 'Quick Links' (My security credentials). The bottom of the screen shows the Windows taskbar with various pinned icons.

LAB 2-SETUP BILLING ALARAM

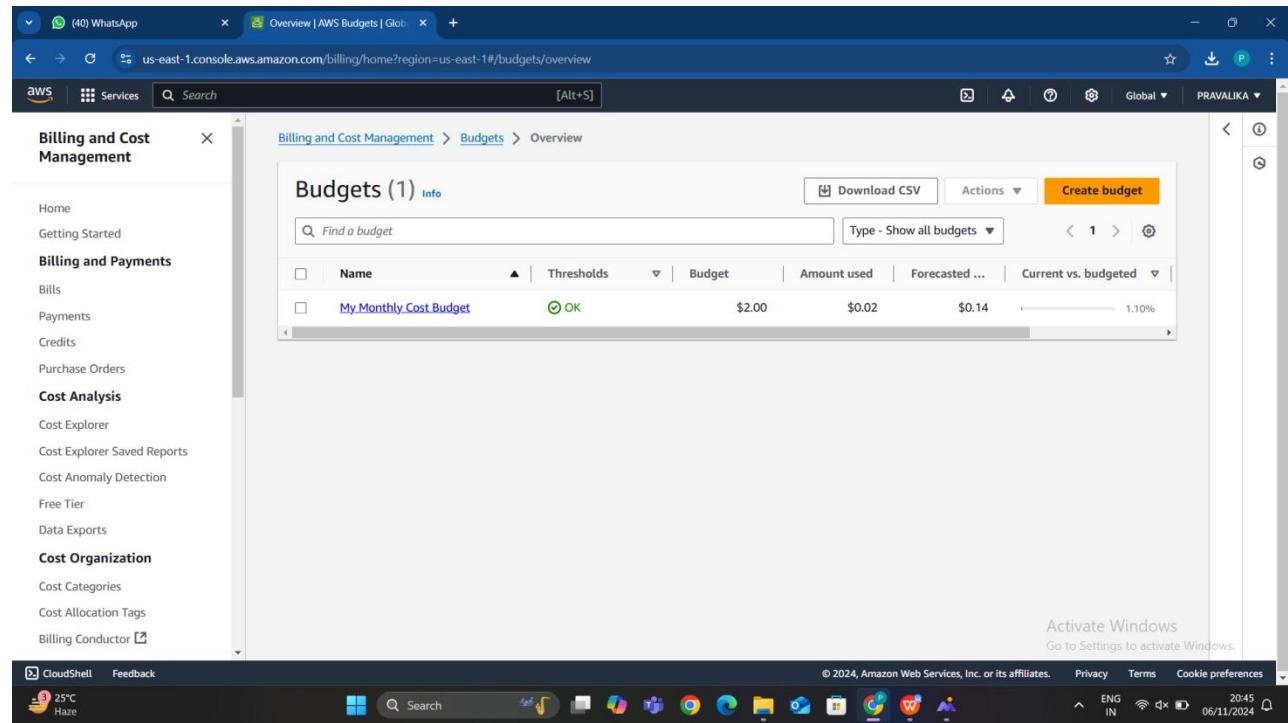
Go to the AWS Management Console and log in to your account search for Billing and Cost

The screenshot shows the AWS Cost Management Console. The left sidebar contains sections for Home, Billing and Payments (Bills, Payments, Credits, Purchase Orders), Cost Analysis (Cost Explorer, Cost Explorer Saved Reports, Cost Anomaly Detection, Free Tier, Data Exports), and Cost Organization (Cost Categories, Cost Allocation Tags, Billing Conductor). The main content area features a 'Cost summary' section with metrics like Month-to-date cost (\$0.02), Last month's cost for same time period (\$0.34), Total forecasted cost for current month (\$0.14), and Last month's total cost (\$0.37). It also includes a 'Cost monitor' section showing Budgets status (OK) and Cost anomalies status (MTD) (None detected). A 'Recommended actions (1)' section suggests 'Getting started' with a link to 'Update billing contact'. The bottom of the screen shows the Windows taskbar.

Create a cost budget, your desired threshold amount, and configure email alerts. This setup ensures you receive notifications whenever spending approaches or exceeds the specified budget, helping you monitor and manage costs

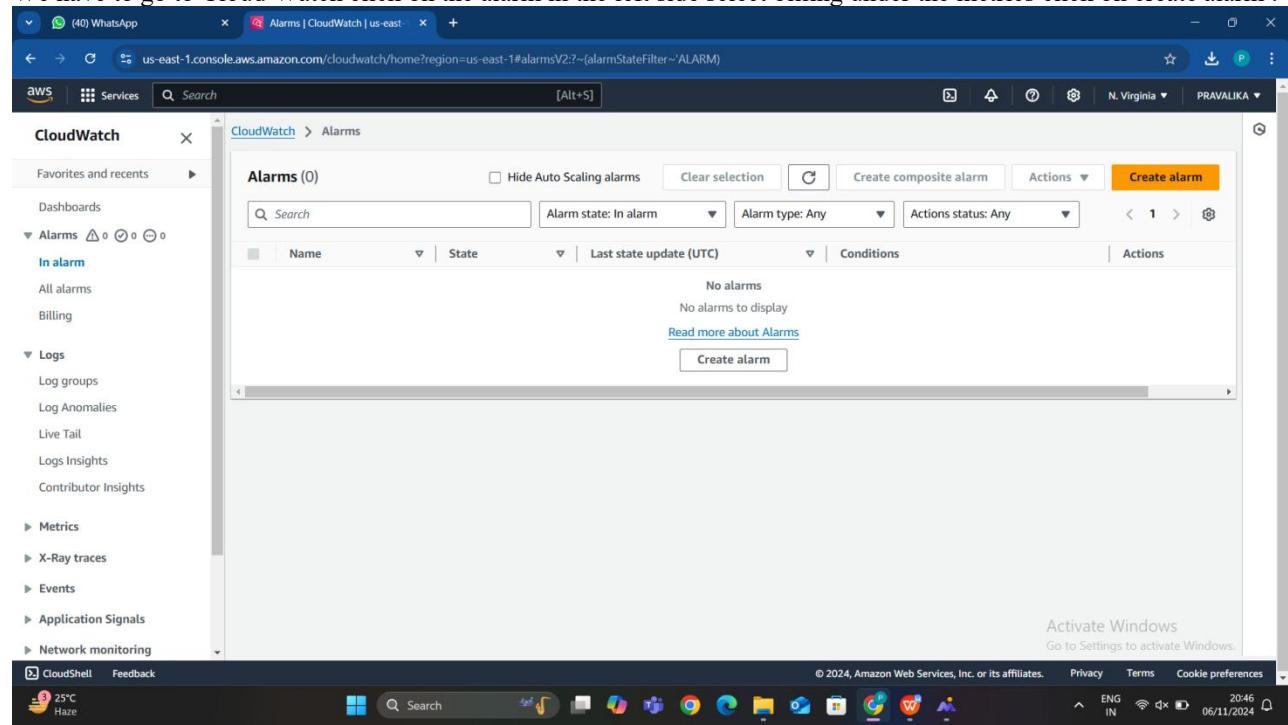
effectively.

Subscription to BillingAlertTopics created successfully.



The screenshot shows the AWS Budgets Overview page. The left sidebar includes sections for Home, Getting Started, Billing and Payments (Bills, Payments, Credits, Purchase Orders), Cost Analysis (Cost Explorer, Cost Explorer Saved Reports, Cost Anomaly Detection, Free Tier, Data Exports), and Cost Organization (Cost Categories, Cost Allocation Tags, Billing Conductor). The main content area displays a table titled 'Budgets (1)'. The table has columns for Name, Thresholds, Budget, Amount used, Forecasted amount, Current vs. budgeted, and Status. One entry is listed: 'My_Monthly_Cost_Budget' with a status of 'OK'. The bottom of the screen shows the Windows taskbar with various pinned icons and system status information.

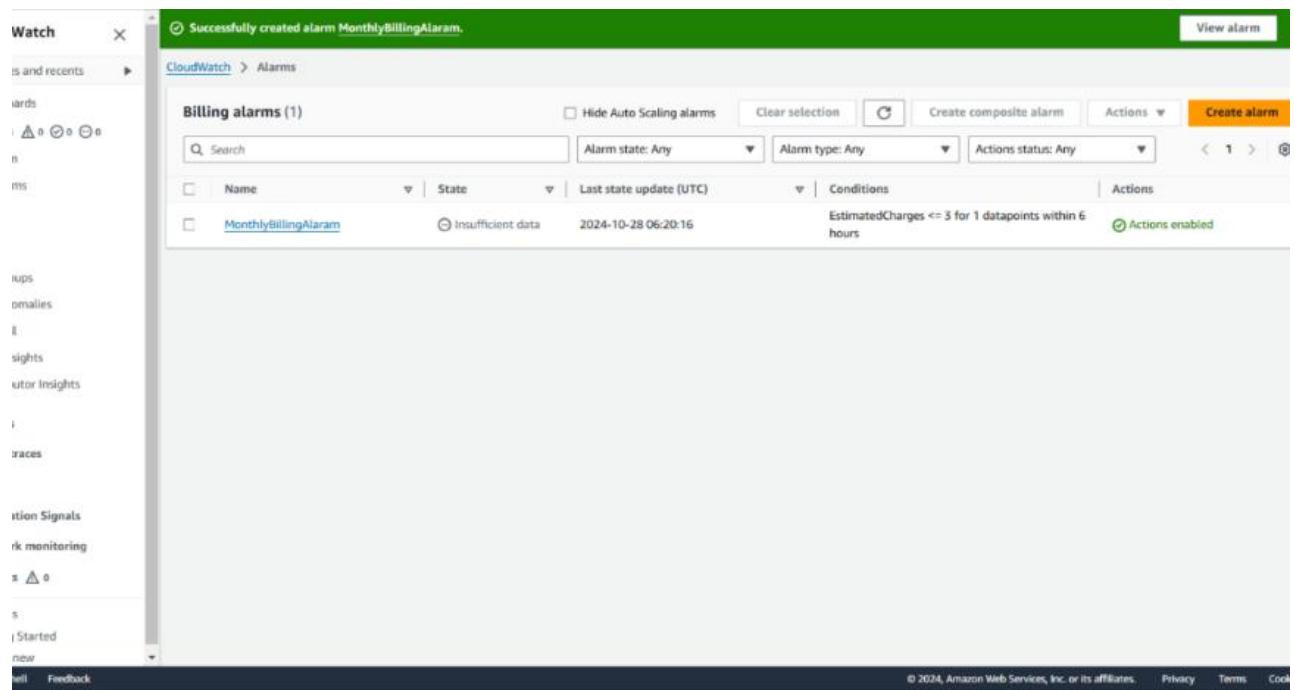
We have to go to Cloud Watch click on the alarm in the left side select billing under the metrics click on create alarm .



The screenshot shows the AWS CloudWatch Alarms page. The left sidebar includes sections for Favorites and recents, Dashboards, Alarms (In alarm, All alarms, Billing), Logs (Log groups, Log Anomalies, Live Tail, Logs Insights, Contributor Insights), Metrics, X-Ray traces, Events, Application Signals, and Network monitoring. The main content area displays a table titled 'Alarms (0)'. The table has columns for Name, State, Last state update (UTC), Conditions, and Actions. A message indicates 'No alarms' and 'No alarms to display'. A 'Create alarm' button is visible at the bottom. The bottom of the screen shows the Windows taskbar with various pinned icons and system status information.

Select metric choose Billing and select Total estimated charge in our preference currency click on select metric

In the configuration actions section under notification choose send notification to the following SNS topic
Select the BillingAlertTopic optionally we can specify additional SNS topics if needed by adding topic ARN. Under the alarm state select the alarm to notify us whenever the alarm thresholds crossed.



The screenshot shows the AWS CloudWatch Metrics & Alarms interface. A green banner at the top indicates that the alarm 'MonthlyBillingAlaram' has been successfully created. The main pane displays a table for 'Billing alarms (1)'. The single row in the table is for the 'MonthlyBillingAlaram' alarm, which is currently in an 'Insufficient data' state as of '2024-10-28 06:20:16'. The condition for the alarm is 'EstimatedCharges <= 3 for 1 datapoints within 6 hours'. The 'Actions' column shows that the alarm is enabled. The left sidebar lists various monitoring services like CloudWatch Metrics, CloudWatch Logs, CloudWatch Metrics Insights, CloudWatch Metrics Signals, CloudWatch Metrics Monitoring, and CloudWatch Metrics Traces. The bottom navigation bar includes links for Help, Feedback, Privacy, Terms, and Conditions.

LAB-3 S3 BUCKET

In the console search for S3 and open it we can able to see below image.

Buckets are containers for data stored in S3.

Name	AWS Region	IAM Access Analyzer	Creation date
elasticbeanstalk-us-east-1-058264135441	US East (N. Virginia) us-east-1	View analyzer for us-east-1	July 30, 2024, 22:45:38 (UTC+05:30)
pravalika-27-bucket-02	US East (N. Virginia) us-east-1	View analyzer for us-east-1	October 28, 2024, 11:03:53 (UTC+05:30)

Click on create bucket and we have to give unique name for the bucket.

Buckets are containers for data stored in S3.

General configuration

AWS Region
US East (N. Virginia) us-east-1

Bucket type [Info](#)

General purpose
Recommended for most use cases and access patterns. General purpose buckets are the original S3 bucket type. They allow a mix of storage classes that redundantly store objects across multiple Availability Zones.

Directory
Recommended for low-latency use cases. These buckets use only the S3 Express One Zone storage class, which provides faster processing of data within a single Availability Zone.

Bucket name [Info](#)
myawsbucket

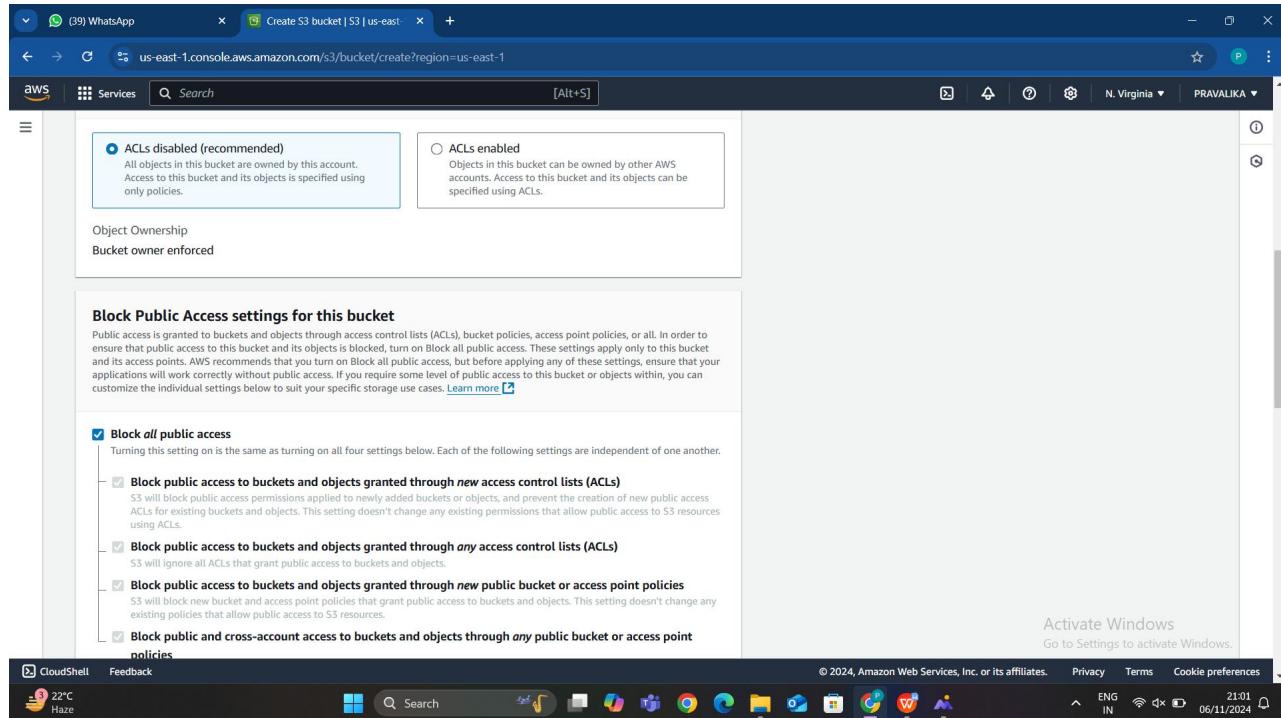
Bucket name must be unique within the global namespace and follow the bucket naming rules. [See rules for bucket naming](#)

Copy settings from existing bucket - optional
Only the bucket settings in the following configuration are copied.
[Choose bucket](#)

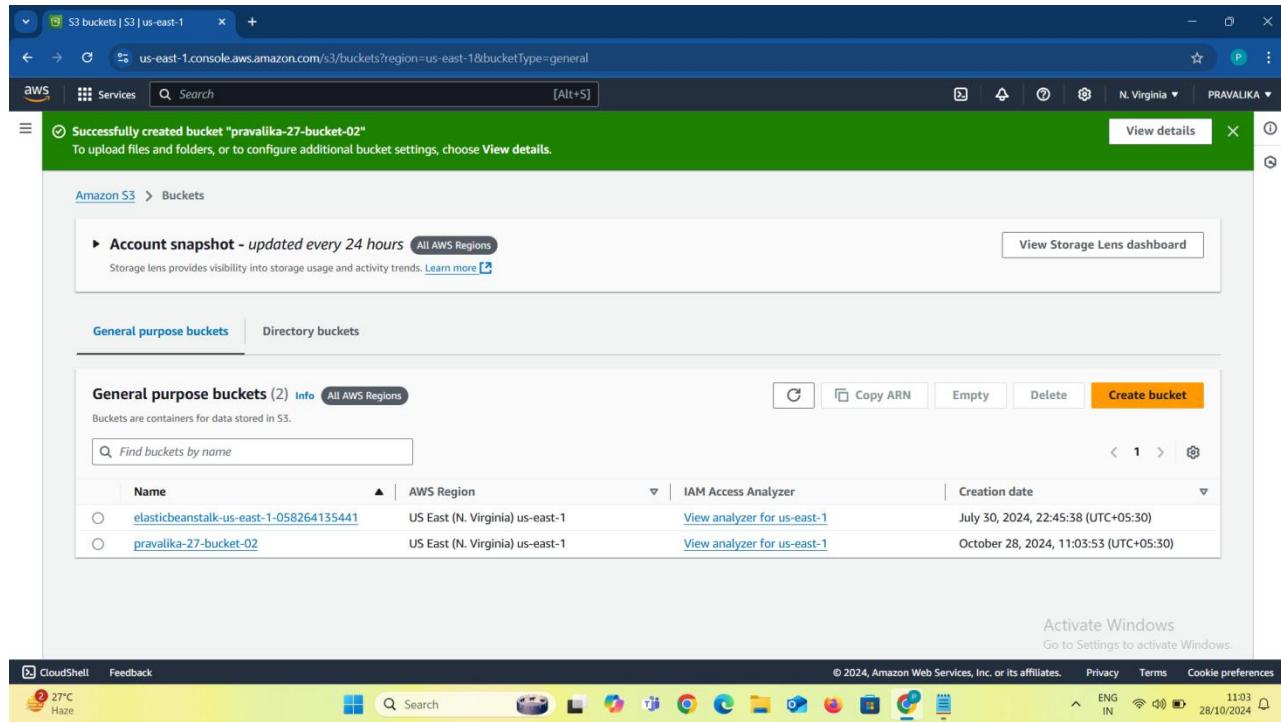
Format: s3://bucket/prefix

Object Ownership [Info](#)
Control ownership of objects written to this bucket from other AWS accounts and the use of access control lists (ACLs). Object ownership

Choose other setting default for now and click on create bucket.

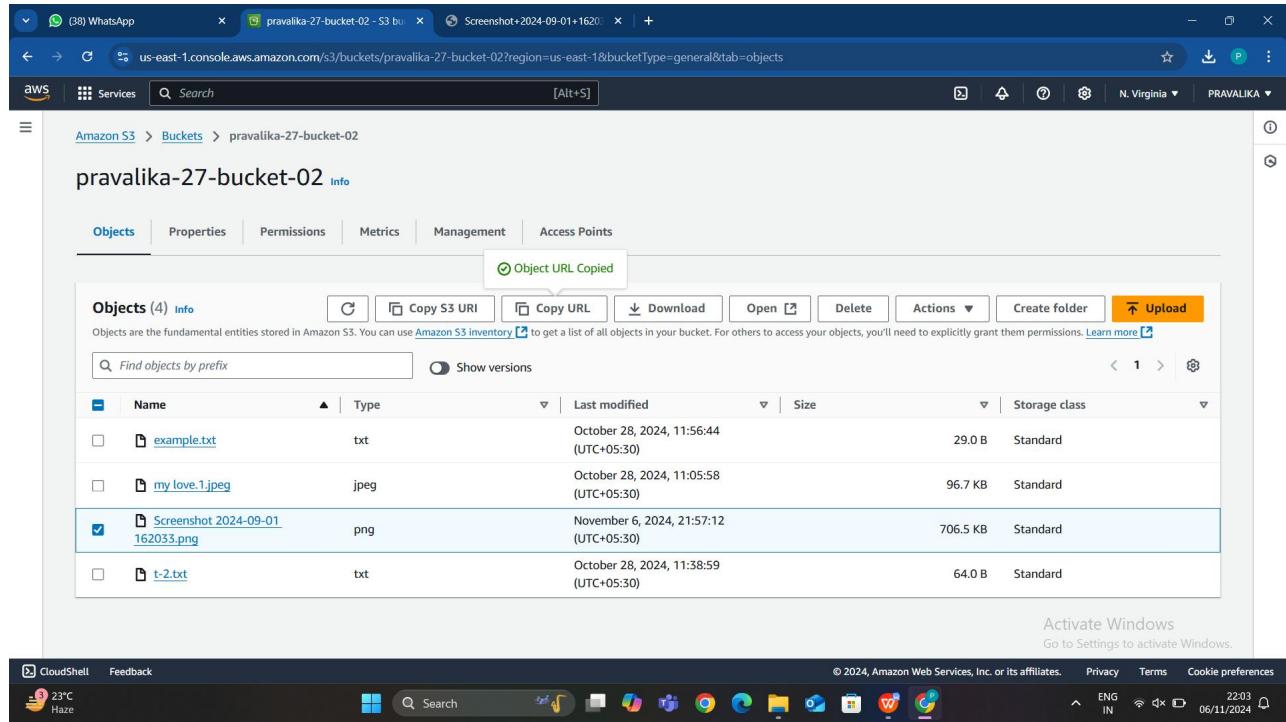


In the below image we can able to see our new bucket has been created successfully.



In S3 dashboard click on the name of the bucket we have just created to open it. We can able to see our bucket and

there is a upload button on the right corner of the object.



The screenshot shows the AWS S3 console interface. At the top, there are three tabs: WhatsApp, pravalika-27-bucket-02 - S3 bu..., and Screenshot+2024-09-01+1620... The URL in the address bar is us-east-1.console.aws.amazon.com/s3/buckets/pravalika-27-bucket-02?region=us-east-1&bucketType=general&tab=objects. The navigation bar includes the AWS logo, Services, Search, and [Alt+S]. On the far right, it shows N. Virginia and PRAVALIKA. Below the navigation bar, the breadcrumb trail shows Amazon S3 > Buckets > pravalika-27-bucket-02. The main title is pravalika-27-bucket-02. The tab bar has five options: Objects (selected), Properties, Permissions, Metrics, and Management. A green banner at the top says "Object URL Copied". Below the banner, there is a toolbar with buttons for Copy, Copy S3 URI, Copy URL, Download, Open, Delete, Actions, Create folder, and Upload. A message below the toolbar says "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". There is a search bar with "Find objects by prefix" and a "Show versions" button. The main table lists four objects:

Name	Type	Last modified	Size	Storage class
example.txt	txt	October 28, 2024, 11:56:44 (UTC+05:30)	29.0 B	Standard
my.love.1.jpeg	jpeg	October 28, 2024, 11:05:58 (UTC+05:30)	96.7 KB	Standard
<input checked="" type="checkbox"/> Screenshot 2024-09-01_162033.png	png	November 6, 2024, 21:57:12 (UTC+05:30)	706.5 KB	Standard
<input type="checkbox"/> t-2.txt	txt	October 28, 2024, 11:38:59 (UTC+05:30)	64.0 B	Standard

At the bottom of the page, there are links for CloudShell, Feedback, © 2024, Amazon Web Services, Inc. or its affiliates., Privacy, Terms, Cookie preferences, ENG IN, 22:03, 06/11/2024, and a weather widget showing 23°C Haze.

Click on upload choose add files and add folder and select the files and folders we want to upload and click on Upload to confirm.

We can able to see our uploaded files and folder in my bucket.

pravalika-27-bucket-02

Objects

Objects (4) Info

Name	Type	Last modified	Size	Storage class
example.txt	txt	October 28, 2024, 11:56:44 (UTC+05:30)	29.0 B	Standard
my love.1.jpeg	jpeg	October 28, 2024, 11:05:58 (UTC+05:30)	96.7 KB	Standard
Screenshot 2024-09-01 162033.png	png	November 6, 2024, 21:57:12 (UTC+05:30)	706.5 KB	Standard
t-2.txt	txt	October 28, 2024, 11:38:59 (UTC+05:30)	64.0 B	Standard

Activate Windows
Go to Settings to activate Windows.

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Go to bucket and click on the Permission tab. We will notice that Block all public access is usually enable by default this restricts public access to the bucket.

pravalika-27-bucket-02

Permissions

Permissions overview

Access finding

Access findings are provided by IAM external access analyzers. Learn more about [How IAM analyzer findings work](#).
[View analyzer for us-east-1](#)

Block public access (bucket settings)

Public access is granted to buckets and objects through access control lists (ACLs), bucket policies, access point policies, or all. In order to ensure that public access to all your S3 buckets and objects is blocked, turn on Block all public access. These settings apply only to this bucket and its access points. AWS recommends that you turn on Block all public access, but before applying any of these settings, ensure that your applications will work correctly without public access. If you require some level of public access to your buckets or objects within, you can customize the individual settings below to suit your specific storage use cases. [Learn more](#).

Block all public access

Off

Individual Block Public Access settings for this bucket

Bucket policy

The bucket policy, written in JSON, provides access to the objects stored in the bucket. Bucket policies don't apply to objects owned by other accounts. [Learn more](#).

Activate Windows
Go to Settings to activate Windows.

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In the permissions tab of the file find the public access settings click edit and choose Grant Public read access to this object confirm by clicking save changes.

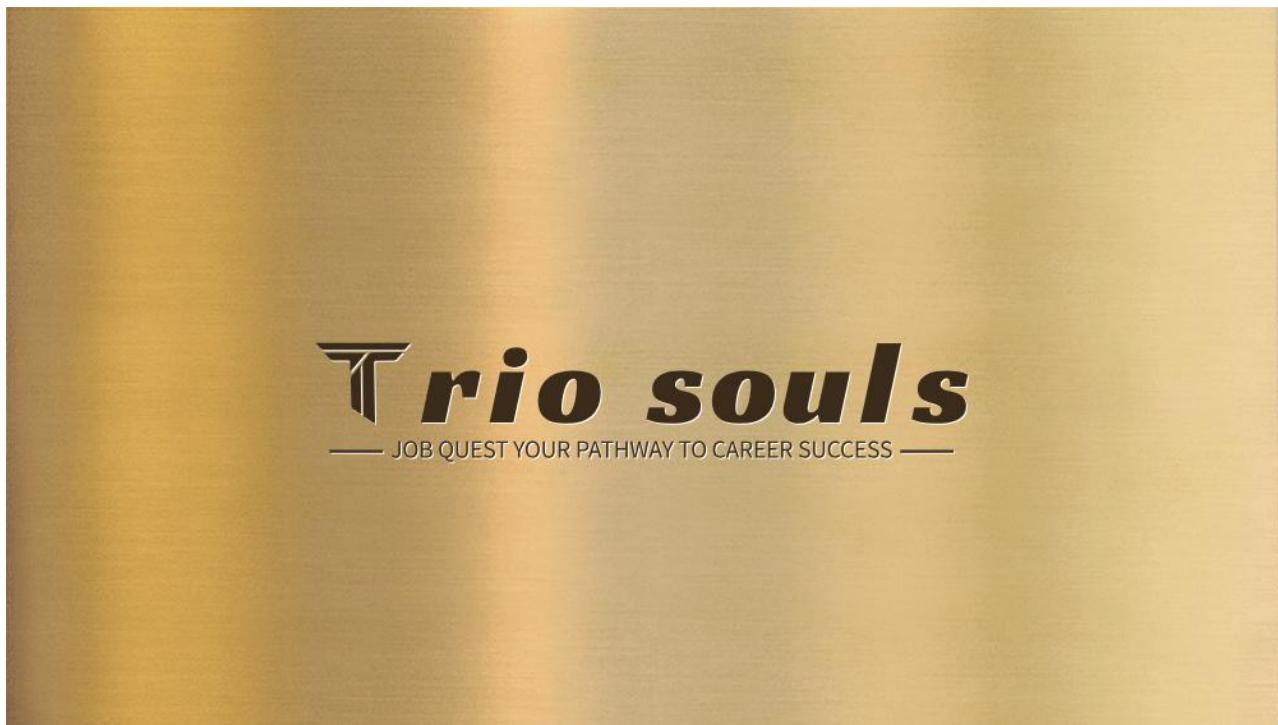
The screenshot shows the AWS Management Console interface for a bucket named 'pravalika-27-bucket-02'. The 'Permissions' tab is selected. A green success message at the top states: 'Successfully edited Block Public Access settings for this bucket'. Below this, the 'Block public access (bucket settings)' section is visible, with an 'Edit' button. The 'Block all public access' setting is currently 'On'. The status bar at the bottom indicates 'Activate Windows'.

Access the file with browser we can able to see it like this because images are shown like this I have taken an certificate image for the process.

The screenshot shows a browser window displaying an XML error response from the AWS S3 bucket. The error message is: 'This XML file does not appear to have any style information associated with it. The document tree is shown below.' The XML content is as follows:

```
<Error>
<Code>AccessDenied</Code>
<Message>Access Denied</Message>
<RequestId>B3FKTDM7HEHXBBZ6</RequestId>
<HostId>8B54fo2RlHpD2pjl0jW77f0aWK2Dm4QrY3RS+OZwI+JtbJP7sbwZiBWsZ++vCbMB66PjkDV1G0=</HostId>
</Error>
```

The status bar at the bottom indicates 'Activate Windows'.



STEP 2

Go to the bucket and go to the Properties tab of the bucket

A screenshot of a web browser showing the AWS S3 console. The URL in the address bar is 'us-east-1.console.aws.amazon.com/s3/buckets/pravalika-27-bucket-02?region=us-east-1&bucketType=general&tab=objects'. The page displays the 'Objects' tab for the 'pravalika-27-bucket-02' bucket. The table lists four objects: 'example.txt', 'my love.1.jpeg', 'Screenshot 2024-09-01_162033.png', and 't-2.txt'. Each object has columns for Name, Type, Last modified, Size, and Storage class. The 'Actions' dropdown menu is visible above the table. The bottom of the screen shows the Windows taskbar with various pinned icons and the date/time as 06/11/2024 at 22:09.

Scroll to the Bucket Versioning we will see Bucket versioning is Disable in the below image.

The screenshot shows the AWS S3 Bucket Properties page for 'pravalika-27-bucket-02'. The 'Bucket Versioning' section is open, showing that 'Bucket Versioning' is currently 'Enabled'. There is also a note about Multi-factor authentication (MFA) delete being 'Disabled'. Below this, the 'Tags (0)' section indicates no tags are associated with the resource. The 'Default encryption' section notes that server-side encryption is automatically applied to new objects. The browser interface includes tabs for WhatsApp, S3 bucket properties, and screenshots, along with standard navigation and search bars.

Click on Edit option and enable Bucket Versioning and then click on save changes.

The screenshot shows the same AWS S3 Bucket Properties page, but now the 'Bucket Versioning' section displays a green success message: 'Successfully edited Bucket Versioning. To transition, archive, or delete older object versions, configure lifecycle rules for this bucket.' The 'Edit' button is still present. The browser interface remains similar, with tabs for WhatsApp, S3 bucket properties, and screenshots, and the status bar showing network and system information.

Create one text file on local machine (e.g., Example.txt) with some content. This is original version.

The screenshot shows the AWS S3 'Upload objects' interface. In the 'Destination' section, the path `s3://pravalika-27-bucket-02` is selected. A message at the top indicates that files will be uploaded to S3. Below the destination, there is a table showing the file 'test.py' with a size of 3.5 KB and type text/plain. The status column shows 'Succeeded'. At the bottom right of the main area, there is an 'Activate Windows' link.

In the click on upload select add files and choose Example.txt Click upload to Confirm and we can able to see that our text file uploaded successfully.

The screenshot shows the AWS S3 'Upload: status' page. It displays a summary table with one succeeded file ('test.py') and zero failed files. Below this, a detailed table lists the file 'test.py' with its details: Name (test.py), Folder (-), Type (text/plain), Size (3.5 KB), Status (Succeeded), and Error (-). The status column for the file is also labeled 'Succeeded'.

We can able to see Example.txt filein the S3 Bucket.

The screenshot shows the AWS S3 console interface. The top navigation bar includes tabs for Services, Search, and [Alt+S]. The main navigation bar shows the path: Amazon S3 > Buckets > pravalika-27-bucket-02. Below this, the bucket name "pravalika-27-bucket-02" is displayed with an "Info" link. A horizontal menu bar offers options like Objects, Properties, Permissions, Metrics, Management, and Access Points, with "Objects" currently selected. A prominent orange "Upload" button is located at the top right of the object list area. The "Objects (5) Info" section contains a table with columns for Name, Type, Last modified, Size, and Storage class. The objects listed are:

Name	Type	Last modified	Size	Storage class
example.txt	txt	October 28, 2024, 11:56:44 (UTC+05:30)	29.0 B	Standard
my.love.1.jpeg	jpeg	October 28, 2024, 11:05:58 (UTC+05:30)	96.7 KB	Standard
Screenshot 2024-09-01_162033.png	png	November 6, 2024, 21:57:12 (UTC+05:30)	706.5 KB	Standard
t-2.txt	txt	October 28, 2024, 11:38:59 (UTC+05:30)	64.0 B	Standard
test.py	py	November 6, 2024, 22:12:45 (UTC+05:30)	3.5 KB	Standard

At the bottom of the page, there are links for CloudShell, Feedback, and various AWS services. The status bar indicates "Activate Windows" and "Go to Settings to activate Windows". The taskbar at the bottom shows icons for various Windows applications like File Explorer, Task View, and Edge browser.

This is the Content of the text file before updating the file.

The screenshot shows a web browser window displaying the contents of the "example.txt" file from the S3 bucket. The URL is "pravalika-27-bucket-02.s3.us-east-1.amazonaws.com/example.txt". The page content is: "This is an example text file." At the bottom of the page, there is a link to "Activate Windows" and "Go to Settings to activate Windows". The taskbar at the bottom shows icons for various Windows applications like File Explorer, Task View, and Edge browser.

Update the Example.txt file on local machine and modify its content (This is updated version). Save the changes and upload the file and confirm AWS S3 automatically treat this as a new version of the file. We can able to see that there are 2 Example.txt files in S3 Bucket.

The screenshot shows the AWS S3 console interface. The top navigation bar includes tabs for WhatsApp, pravalika-27-bucket-02 - S3 bu..., Screenshot+2024-09-01+1620..., pravalika-27-bucket-02.s3.us..., and a '+' button. Below the navigation bar, the AWS logo, Services, and a search bar are visible. The main content area shows the 'Amazon S3 > Buckets > pravalika-27-bucket-02' path. The 'pravalika-27-bucket-02' page has tabs for Objects, Properties, Permissions, Metrics, Management, and Access Points. The 'Objects' tab is selected, displaying a table of five objects:

Name	Type	Last modified	Size	Storage class
example.txt	txt	October 28, 2024, 11:56:44 (UTC+05:30)	29.0 B	Standard
my.love.1.jpeg	jpeg	October 28, 2024, 11:05:58 (UTC+05:30)	96.7 KB	Standard
Screenshot 2024-09-01_162033.png	png	November 6, 2024, 21:57:12 (UTC+05:30)	706.5 KB	Standard
t-2.txt	txt	October 28, 2024, 11:38:59 (UTC+05:30)	64.0 B	Standard
test.py	py	November 6, 2024, 22:12:45 (UTC+05:30)	3.5 KB	Standard

Below the table, there are buttons for Actions (with options like Create folder and Upload), Copy S3 URI, Copy URL, Download, Open, Delete, and a 'Show versions' link. The status bar at the bottom shows CloudShell, Feedback, 24°C Haze, a weather icon, a search bar, and various system icons.

This is the Updated Version of Example.txt file I have updated last line.

The screenshot shows a browser window with multiple tabs open. The active tab is 'pravalika-27-bucket-02.s3.us-east-1.amazonaws.com/t-2.txt'. The content of the page is:

```
Hey hello this is the updated text file to test the two versions
```

At the bottom right of the browser window, there is an 'Activate Windows' message: 'Activate Windows Go to Settings to activate Windows.' The status bar at the bottom of the screen shows a weather icon (29°C Haze), a search bar, and various system icons.

In the Bucket locate Example.txt select it and click on Delete. Confirm the deletion.

The screenshot shows the AWS S3 console in a browser window. The URL is `us-east-1.console.aws.amazon.com/s3/buckets/pravalika-27-bucket-02/object/delete?region=us-east-1&bucketType=general&showversions=false`. The page displays a warning about folder deletion and a note about delete markers. Under 'Specified objects', there is a table with one row for 'test.py'. In the 'Delete objects?' section, a text input field contains 'delete'. Below it are 'Cancel' and 'Delete objects' buttons.

We can able to see that the object is deleted successfully.

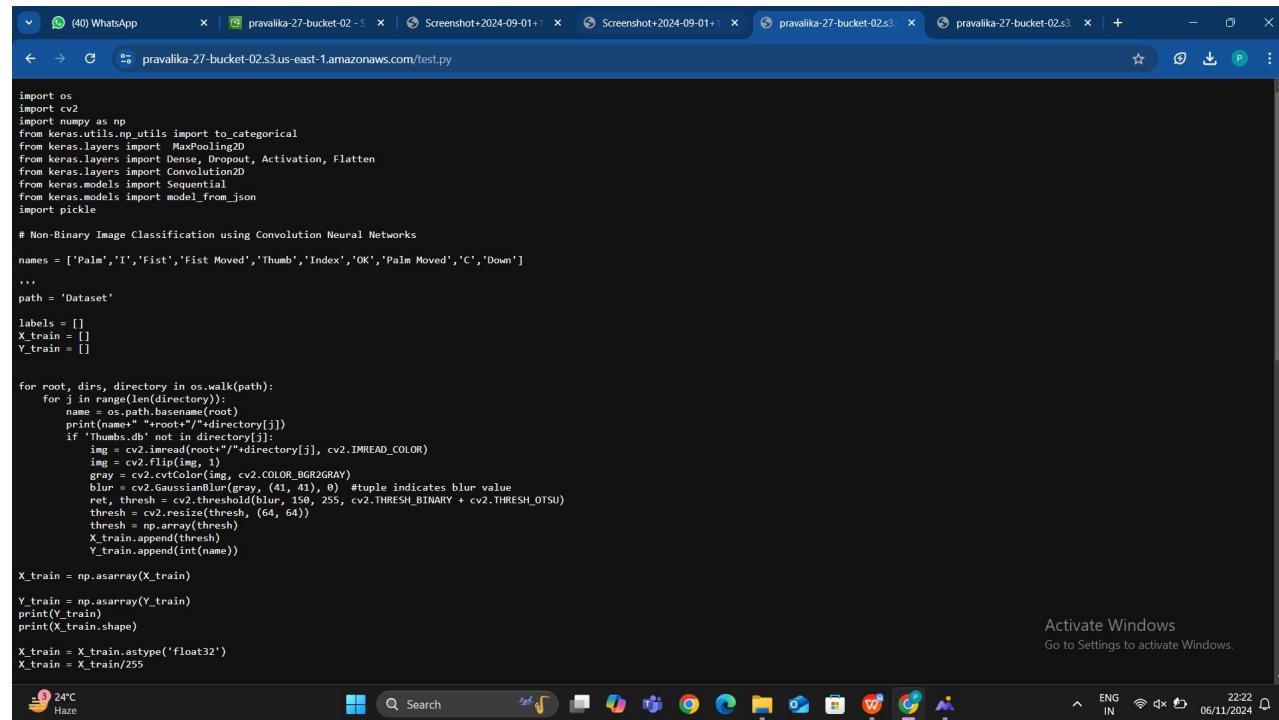
The screenshot shows the AWS S3 console after the deletion. A green banner at the top says 'Successfully deleted objects'. Below it, a message states 'The information below will no longer be available after you navigate away from this page.' A 'Summary' section shows 'Source s3://pravalika-27-bucket-02' and 'Successfully deleted 1 object, 3.5 KB'. The 'Failed to delete 0 objects' tab is selected. The 'Failed to delete (0)' section shows a table with no data, stating 'No objects failed to delete.'

Delete the Example.txt file permanently so that we can able to see the versioning properly.

Go back to the versions of the objects tab. We will find the previous versions, including the one marked as “deleted marked”. Restore the deleted version to recover the file delete the delete marker version of Example.txt once we

remove the delete marker the file will be restored to its previous version.

We can able to see the restore of the file ad content of the file.



```
import os
import cv2
import numpy as np
from keras.utils import to_categorical
from keras.layers import MaxPooling2D
from keras.layers import Dense, Dropout, Activation, Flatten
from keras.layers import Convolution2D
from keras.models import Sequential
from keras.models import model_from_json
import pickle

# Non-Binary Image Classification using Convolution Neural Networks

names = ['Palm', 'I', 'Fist', 'Fist Moved', 'Thumb', 'Index', 'OK', 'Palm Moved', 'C', 'Down']

...
path = 'Dataset'

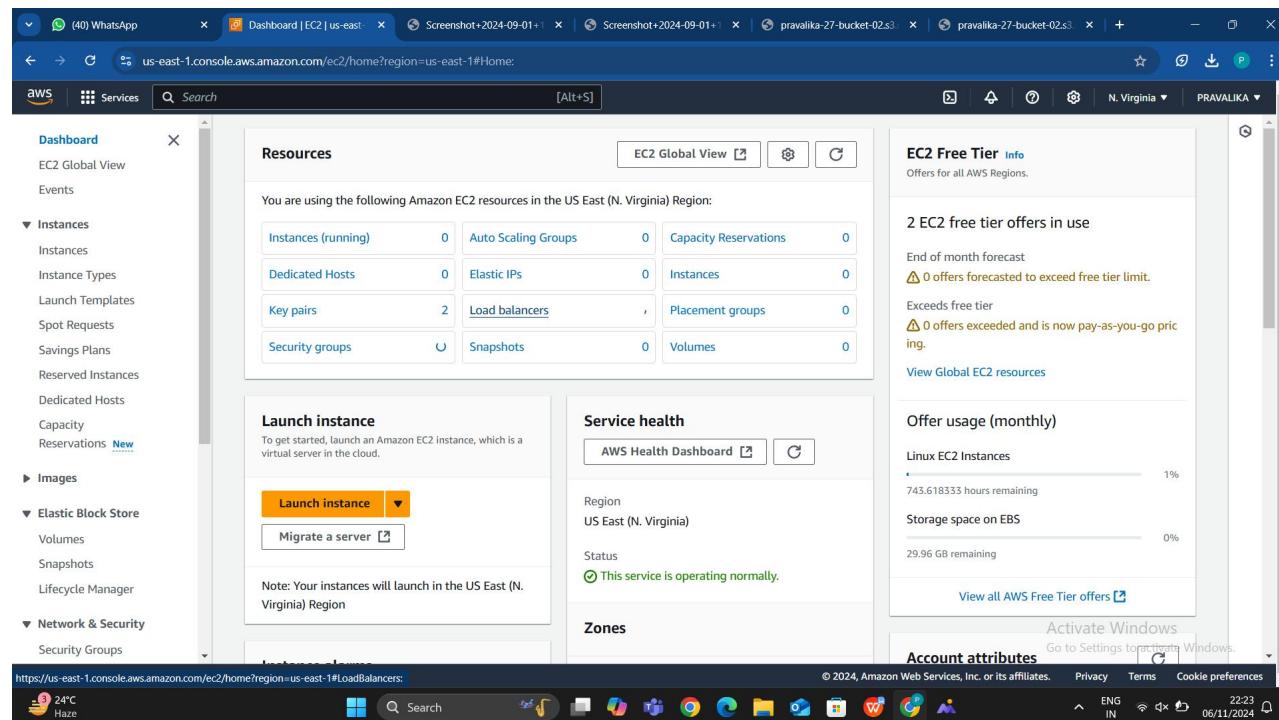
labels = []
X_train = []
Y_train = []

for root, dirs, files in os.walk(path):
    for j in range(len(files)):
        name = os.path.basename(root)
        print(name + " " + root + " " + directory[j])
        if name == db:
            img = cv2.imread(root + "/" + directory[j], cv2.IMREAD_COLOR)
            img = cv2.flip(img, 1)
            gray = cv2.cvtColor(img, cv2.COLOR_BGR2GRAY)
            blur = cv2.GaussianBlur(gray, (41, 41), 0) #tuple indicates blur value
            ret, thresh = cv2.threshold(blur, 150, 255, cv2.THRESH_BINARY + cv2.THRESH_OTSU)
            thresh = cv2.resize(thresh, (64, 64))
            thresh = np.array(thresh)
            X_train.append(thresh)
            Y_train.append(int(name))

X_train = np.asarray(X_train)
Y_train = np.asarray(Y_train)
print(Y_train)
print(X_train.shape)
X_train = X_train.astype('float32')
X_train = X_train/255
```

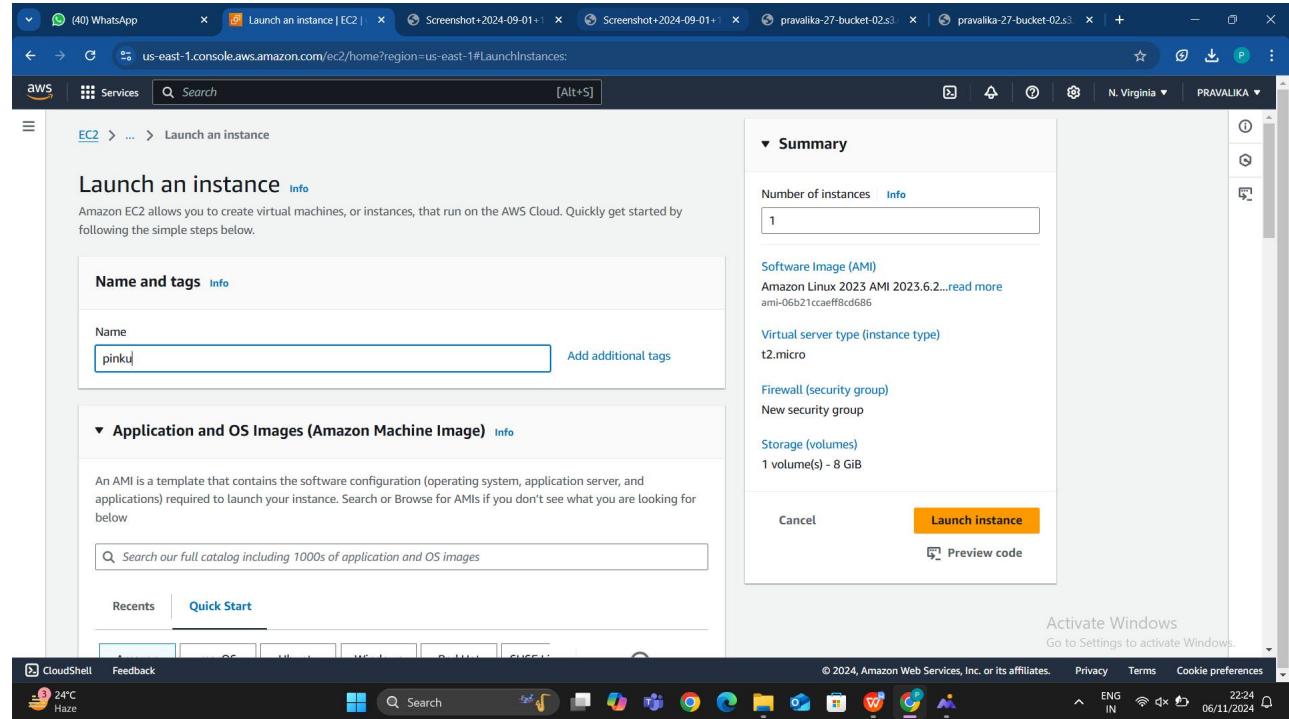
LAB 4 - EC2-INSTANCE

In AWS console search for EC2 and open it.



Click on Launch instance that we are seeing in the below image at the right top corner.

When we click on launch instance new page will be appear that we are seeing in the below image. It is nothing but the configuration of instances firstly we have to give name for the instance and select AMI based on our choice. I have selected ubuntu server AMI.



Under key pair select an existing key pair or create new key pair we have to select instance type. I have selected t2.micro which is under free tier eligible.

After configuration check click on create instance. We will see a notification that Success so that our instance has been created successfully.

The screenshot shows the AWS CloudShell interface. At the top, there are several tabs: WhatsApp, Launch an instance | EC2, Screenshot+2024-09-01+, Screenshot+2024-09-01+, pravalka-27-bucket-02.s3, pravalka-27-bucket-02.s3, and a blank tab. The main content area has a blue header bar with the AWS logo, Services, Search, and a keyboard shortcut [Alt+S]. Below this, the URL is us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#LaunchInstances. The page title is "Launch an instance". A green success banner at the top says "Success" and "Successfully initiated launch of instance (I-06c1998c5a1978171)". Below the banner, there is a link "▶ Launch log". Under the "Next Steps" section, there are four cards: "Create billing and free tier usage alerts", "Connect to your instance", "Connect an RDS database", and "Create EBS snapshot policy". Each card contains a brief description and a "Learn more" link. At the bottom of the page, there is a footer with links for CloudShell, Feedback, and various AWS services like Lambda, S3, and CloudWatch. The footer also includes copyright information, privacy terms, cookie preferences, and language settings (ENG IN).

Download PuTTYgen open the PuTTYgen click load and select .pem file once loaded click save private key to save it in .ppk format This file will be used for authentication in PuTTY. Copy the public IPv4 address open PuTTY in the host name filed enter public ip and go to SSH >Auth >connection and browse to select our .ppk file. Click on browse to connection and accept the security alert to connect.

Once the connection is done we have to go to terminal prompt and we have to login as ubuntu and now run commands on your ubuntu instance.

```
ubuntu@ip-172-31-35-242:~$  
[  1.000000] login as: ubuntu  
[  1.000000] Authenticating with public key "imported-openssh-key"  
[  1.000000] Welcome to Ubuntu 24.04.1 LTS (GNU/Linux 6.8.0-1016-aws x86_64)  
[  1.000000]  
 * Documentation: https://help.ubuntu.com  
 * Management: https://landscape.canonical.com  
 * Support: https://ubuntu.com/pro  
[  1.000000]  
System information as of Tue Oct 29 04:59:04 UTC 2024  
[  1.000000] System load: 0.0 Processes: 105  
[  1.000000] Usage of /: 22.9% of 6.71GB Users logged in: 0  
[  1.000000] Memory usage: 19% IPv4 address for enX0: 172.31.35.242  
[  1.000000] Swap usage: 0%  
[  1.000000]  
Expanded Security Maintenance for Applications is not enabled.  
[  1.000000] 0 updates can be applied immediately.  
[  1.000000] Enable ESM Apps to receive additional future security updates.  
See https://ubuntu.com/esm or run: sudo pro status  
[  1.000000]  
The list of available updates is more than a week old.  
To check for new updates run: sudo apt update  
[  1.000000]  
The programs included with the Ubuntu system are free software;  
the exact distribution terms for each program are described in the  
individual files in /usr/share/doc/*/*copyright.  
[  1.000000] Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by  
applicable law.  
[  1.000000] To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
ubuntu@ip-172-31-35-242:~$
```

LAB 6 – VOLUMES AND SNAPSHOTS

In the left hand menu, under Network & Security , select Security groups click on create security group name security group. Provide a description select your VPC where our EC2 instance.

The screenshot shows the 'Create security group' page in the AWS EC2 console. In the 'Basic details' section, the security group name is 'mvnewSG' and the description is 'Allows SSH access to developers'. The VPC is set to 'vpc-034ea5ce7cce0aef8'. In the 'Inbound rules' section, there is one rule for SSH (TCP port 22) from 'My IP' (49.206.59.74/32). The status bar at the bottom indicates it's 30°C and shows the date as 12/22/2024.

In the below image we can able to see our security group has been created successfully.

The screenshot shows the 'Security Groups' page in the AWS EC2 console. A green success message at the top states 'Security group (sg-0fb85f98f32e8f6ac | mvnewSG) was created successfully'. The main table displays the security group 'sg-0fb85f98f32e8f6ac - mvnewSG' with details: Security group name 'mvnewSG', Security group ID 'sg-0fb85f98f32e8f6ac', Description 'general purpose security group', VPC ID 'vpc-034ea5ce7cce0aef8', Owner '058264135441', Inbound rules count '3 Permission entries', and Outbound rules count '1 Permission entry'. The status bar at the bottom indicates it's 30°C and shows the date as 12/22/2024.

To check default rules in a new security group there are generally no inbound rules in the above image meaning all inbound traffic is denied by default. Outbound traffic typically allow traffic by default.

Name	Security group ID	Security group name	VPC ID	Description
-	sg-076ae3b3fc092693b	launch-wizard-5	vpc-034ea5ce7cce0aef8	launch-wiz
-	sg-0b9517542dcf2d1e5	launch-wizard-6	vpc-034ea5ce7cce0aef8	launch-wiz
-	sg-02c3e773d9bc2bb7d	default	vpc-034ea5ce7cce0aef8	default VP
-	sg-06dc20bf20bf6dc48	launch-wizard-7	vpc-034ea5ce7cce0aef8	launch-wiz
-	sg-018ddf25a4ed4c1b4	ec2-rds-2	vpc-034ea5ce7cce0aef8	Security gr

Name	Security group rule...	IP version	Type	Protocol	Port range
-	sgr-04f3cd3724c68ed99	IPv4	SSH	TCP	22
-	sgr-094456117212ea...	IPv4	HTTP	TCP	80

Check on command prompt we can able to run commands successfully in the below image.

```

ubuntu@ip-172-31-35-242: ~
└─$ login as: ubuntu
└─$ Authenticating with public key "imported-openssh-key"
Welcome to Ubuntu 24.04.1 LTS (GNU/Linux 6.8.0-1016-aws x86_64)

 * Documentation: https://help.ubuntu.com
 * Management: https://landscape.canonical.com
 * Support: https://ubuntu.com/pro

System information as of Tue Oct 29 04:59:04 UTC 2024

System load: 0.0          Processes:           105
Usage of /: 22.9% of 6.71GB   Users logged in:      0
Memory usage: 19%          IPv4 address for enX0: 172.31.35.242
Swap usage: 0%             

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

The list of available updates is more than a week old.
to check for new updates run: sudo apt update

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/*copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-35-242:~$ pwd
/home/ubuntu
ubuntu@ip-172-31-35-242:~$ 

```

Allowing inbound rules for Ports 80 and 22 in the inbound rules section click on Add rule in that we have to select Type: SSH, Protocol: TCP, Port range: 22, Type: SSH, Protocol: TCP, Port range: 80 Source type my IP/28 click on save changes and click on create security group to finalize.

The screenshot shows the 'Create Security Group' page in the AWS Management Console. The 'Inbound rules' section contains three rules:

- Type: SSH, Protocol: TCP, Port range: 22, Source: My IP (49.206.59.74/32), Description: optional
- Type: HTTP, Protocol: TCP, Port range: 80, Source: Anywhere (0.0.0.0/0), Description: optional
- Type: HTTPS, Protocol: TCP, Port range: 443, Source: Anywhere (0.0.0.0/0), Description: optional

An 'Add rule' button is visible at the bottom of the rules table. Below the rules table is the 'Outbound rules' section, which is currently empty. The browser's address bar shows the URL: us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateSecurityGroup.

We can able to see in the below image that Inbound security group rules successfully modified on security group.

The screenshot shows the 'Security Groups (1/13)' page in the AWS Management Console. The table lists security groups with their details:

Name	Security group ID	Security group name	VPC ID	Description
sg-076ae3b3fc092693b	launch-wizard-5	vpc-034ea5ce7cce0aef8	launch-wiz	
sg-0b9517542dcf2d1e5	launch-wizard-6	vpc-034ea5ce7cce0aef8	launch-wiz	
sg-02c3e773d9bc2bb7d	default	vpc-034ea5ce7cce0aef8	default VP	
sg-06dc20bf20bf6dc48	launch-wizard-7	vpc-034ea5ce7cce0aef8	launch-wiz	
sg-018ddf25a4ed4c1b4	ec2-rds-2	vpc-034ea5ce7cce0aef8	Security gr	

The 'Inbound rules (2)' section shows two rules for the selected security group:

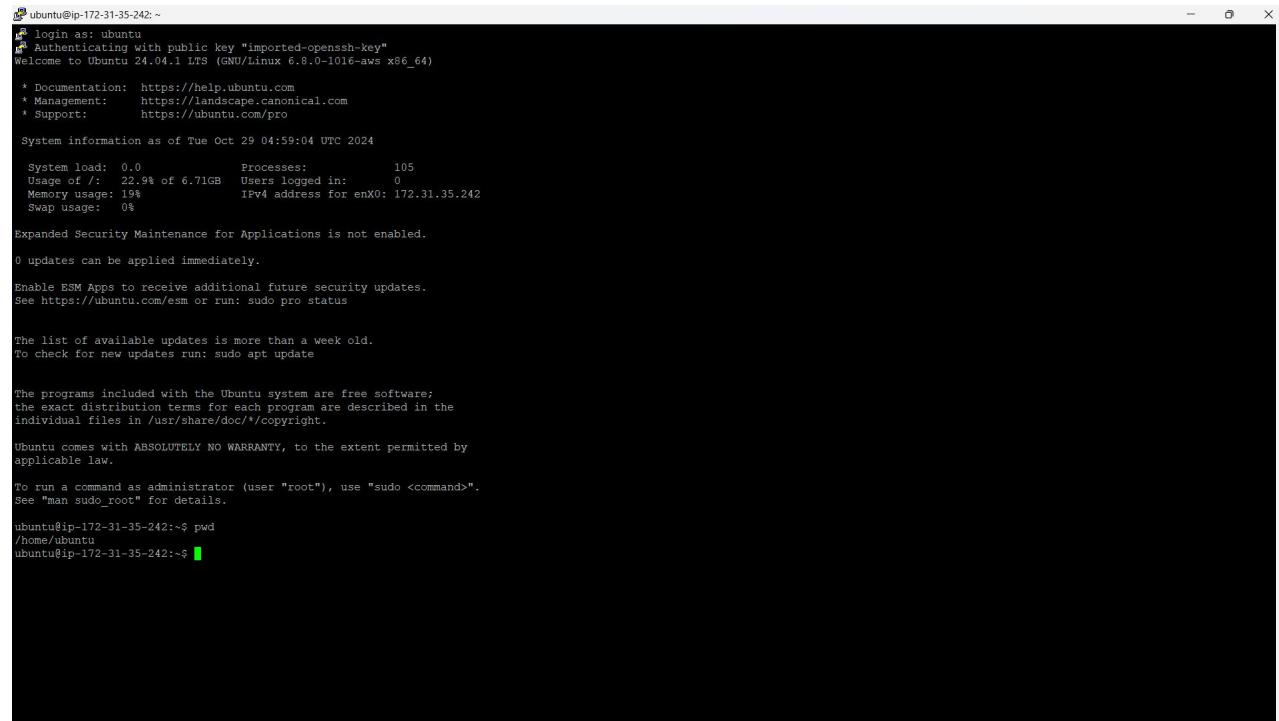
Name	Security group rule...	IP version	Type	Protocol	Port range
-	sgr-04f3cd3724c68ed99	IPv4	SSH	TCP	22
-	sgr-094456117212ea...	IPv4	HTTP	TCP	80

The browser's address bar shows the URL: us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#SecurityGroups.

Navigate to instance click on the EC2 instance to which you want to attach this security group with the instance

selected click Action > Security > this security group and select the new security group and remove any other security group if not needed after that update security group.

Open the PuTTY and attempt to connect to the instance and we cannot able to access.



```
ubuntu@ip-172-31-35-242:~$  
login as: ubuntu  
Authenticating with public key "imported-openssh-key"  
Welcome to Ubuntu 24.04.1 LTS (GNU/Linux 6.8.0-1016-aws x86_64)  
  
* Documentation: https://help.ubuntu.com  
* Management: https://landscape.canonical.com  
* Support: https://ubuntu.com/pro  
  
System information as of Tue Oct 29 04:59:04 UTC 2024  
  
System load: 0.0 Processes: 105  
Usage of /: 22.9% of 6.71GB Users logged in: 0  
Memory usage: 19% IPv4 address for enX0: 172.31.35.242  
Swap usage: 0%  
  
Expanded Security Maintenance for Applications is not enabled.  
0 updates can be applied immediately.  
Enable ESM Apps to receive additional future security updates.  
See https://ubuntu.com/esm or run: sudo pro status  
  
The list of available updates is more than a week old.  
To check for new updates run: sudo apt update  
  
The programs included with the Ubuntu system are free software;  
the exact distribution terms for each program are described in the  
individual files in /usr/share/doc/*copyright.  
Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by  
applicable law.  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
  
ubuntu@ip-172-31-35-242:~$ pwd  
/home/ubuntu  
ubuntu@ip-172-31-35-242:~$
```

LAB 6 – VOLUMES AND SNAPSHOTS

Create a new volume in the left-hand menu under Elastic Block store select volumes and click on create vol

The screenshot shows the AWS EBS Volumes page. On the left, there's a navigation sidebar with links like Dashboard, EC2 Global View, Events, Instances, Images, Elastic Block Store (with Volumes selected), Network & Security, and CloudShell. The main content area has a table titled 'Volumes (1) Info' with one row. The table columns are Name, Volume ID, Type, Size, IOPS, Throughput, Snapshot ID, and Created. The volume listed is 'vol-05cc646ca7423c7b7' (gp3, 8 GiB, 3000 IOPS, 125 Throughput, snap-0bc7570..., 2024/11/06 22:27 GMT+5:30). Below the table is a section titled 'Fault tolerance for all volumes in this Region'. Underneath it is a 'Snapshot summary' section showing 'Recently backed up volumes / Total # volumes' as 0 / 1. A note says 'Data Lifecycle Manager default policy for EBS Snapshots status' and 'No default policy set up | Create policy'. At the bottom of the page, there's a footer with links for Privacy, Terms, and Cookie preferences, and some system status icons.

Configure volume settings size 5GiB Availability Zone select the same zone as your Ec2 instance and volume type General Purpose SSD. Click on the create volume to create EBS Volume

Volume has been created successfully we can able to see in the below image. Once the volume is created select it in the volumes list and click on Action > Attach volume in the instance filed choose our running instance and select /dev/sdf or similar device name. Click on Attach volume.

The screenshot shows the AWS CloudWatch Metrics console with a success message: "Successfully created volume vol-03f1cc37270f91bac." The main pane displays a table of volumes with columns: Name, Volume ID, Type, Size, IOPS, Throughput, Snapshot ID, and Created. Three volumes are listed: vol-03f1cc37270f91bac (gp3, 5 GiB, 3000 IOPS, 125 Throughput), vol-0b39e64a442c04c01 (gp3, 8 GiB, 3000 IOPS, 125 Throughput), and vol-0cfb8ceab419759e8 (gp3, 8 GiB, 3000 IOPS, 125 Throughput). Below the table, a section titled "Fault tolerance for all volumes in this Region" is shown. On the left sidebar, the "Elastic Block Store" section is expanded, showing "Volumes" (selected), "Snapshots", and "Lifecycle Manager". The bottom status bar shows the URL as https://us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#VolumeDetails?volumeId=vol-03f1cc37270f91bac.

Connect our PuTTY and list all the attached disks to verify our new volume using lsblk we can see the attached volumes in the image below

```
ubuntu@ip-172-31-35-242: ~
login as: ubuntu
Authenticating with public key "imported-openssh-key"
Welcome to Ubuntu 24.04.1 LTS (GNU/Linux 6.8.0-1016-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/pro

System information as of Tue Oct 29 05:53:17 UTC 2024

System load: 0.0      Processes:          108
Usage of /: 23.2% of 6.71GB   Users logged in: 0
Memory usage: 21%        IPv4 address for enX0: 172.31.35.242
Swap usage: 0%

* Ubuntu Pro delivers the most comprehensive open source security and
  compliance features.

https://ubuntu.com/aws/pro

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

Last login: Tue Oct 29 04:59:46 2024 from 49.206.59.74
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-35-242:~$ pwd
/home/ubuntu
ubuntu@ip-172-31-35-242:~$ lsblk
NAME  MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
loop0   7:0    0 25.2M  1 loop /snap/amazon-ssm-agent/7993
loop1   7:1    0 38.8M  1 loop /snap/snapd/21759
loop2   7:2    0 55.7M  1 loop /snap/core18/2829
xvda   202:0   0   6G  0 disk 
└─xvda1 202:1   0   7G  0 part /
└─xvda4 202:14  0   4M  0 part /
└─xvda5 202:15  0 106M 0 part /boot/efi
└─xvda6 259:0   0  913M 0 part /boot
xvdo   202:224 0   5G  0 disk 
```

Create Test files using touch command. We can able to see 2 testfiles in the below image.

```

root@ip-172-31-35-242:/mnt/mydata
drwxr-xr-x 2 root root 16384 Oct 29 06:04 lost+found
-rw-r--r-- 1 root root 0 Oct 29 06:10 testfile1.txt
-rw-r--r-- 1 root root 0 Oct 29 06:10 testfile2.txt
ubuntu@ip-172-31-35-242:/mnt/mydata$ ll
total 24
drwxr-xr-x 3 ubuntu ubuntu 4096 Oct 29 06:10 ../
drwxr-xr-x 3 root root 4096 Oct 29 06:05 ../.
drwxr-xr-x 2 root root 16384 Oct 29 06:04 lost+found/
-rw-r--r-- 1 root root 0 Oct 29 06:10 testfile1.txt
-rw-r--r-- 1 root root 0 Oct 29 06:10 testfile2.txt
ubuntu@ip-172-31-35-242:/mnt/mydata$ sudo su -
root@ip-172-31-35-242:# ll
total 24
drwxr-xr-x 4 root root 4096 Oct 29 04:52 /
drwxr-xr-x 22 root root 4096 Oct 29 04:52 ../.
-rw-r--r-- 1 root root 3106 Apr 22 2024 .bashrc
-rw-r--r-- 1 root root 161 Apr 22 2024 .profile
drwxr-xr-x 2 root root 4096 Oct 29 04:52 .ssh/
drwxr-xr-x 3 root root 4096 Oct 29 04:52 snap/
root@ip-172-31-35-242:# cd /mnt/mydata/
root@ip-172-31-35-242:/mnt/mydata# ll
total 24
drwxr-xr-x 3 ubuntu ubuntu 4096 Oct 29 06:10 ../
drwxr-xr-x 3 root root 4096 Oct 29 06:05 ../.
drwxr-xr-x 2 root root 16384 Oct 29 06:04 lost+found/
-rw-r--r-- 1 root root 0 Oct 29 06:10 testfile1.txt
-rw-r--r-- 1 root root 0 Oct 29 06:10 testfile2.txt
root@ip-172-31-35-242:/mnt/mydata# cat testfile1.txt
root@ip-172-31-35-242:/mnt/mydata# vim testfile1.txt
root@ip-172-31-35-242:/mnt/mydata# cat testfile1.txt
Hello Ec2
I am Spandana Baindia :)
root@ip-172-31-35-242:/mnt/mydata# ll
total 23
drwxr-xr-x 3 ubuntu ubuntu 4096 Oct 29 06:39 ../
drwxr-xr-x 3 root root 4096 Oct 29 06:05 ../.
drwxr-xr-x 2 root root 16384 Oct 29 06:04 lost+found/
-rw-r--r-- 1 root root 35 Oct 29 06:29 testfile1.txt
-rw-r--r-- 1 root root 0 Oct 29 06:10 testfile2.txt
root@ip-172-31-35-242:/mnt/mydata# ls -h
lost+found testfile1.txt testfile2.txt
root@ip-172-31-35-242:/mnt/mydata# df -h
Filesystem      Size   Used  Avail Use% Mounted on
/dev/root       6.8G  1.6G  5.2G  24% /
tmpfs          479M    0  479M   0% /dev/shm
tmpfs          192M  888K  191M   1% /run
tmpfs          5.0M    0  5.0M   0% /run/lock
/dev/xvda16     881M   76M  744M  10% /boot
/dev/xvda15     105M   6.1M  99M   6% /boot/efi
tmpfs          96M   12K  96M   1% /run/user/1000
/dev/xvdf       4.9G  28K  4.6G  1% /mnt/mydata
root@ip-172-31-35-242:/mnt/mydata#

```

```

buntu@ip-172-31-35-242:~$ sudo mkdir /mnt/mydata
buntu@ip-172-31-35-242:~$ ll
total 28
rwxr-x--- 4 ubuntu ubuntu 4096 Oct 29 05:58 ../
rwxr-xr-x 3 root root 4096 Oct 29 04:52 ../.
rw-r--r-- 1 ubuntu ubuntu 220 Mar 31 2024 .bash_logout
rw-r--r-- 1 ubuntu ubuntu 3771 Mar 31 2024 .bashrc
rwx----- 2 ubuntu ubuntu 4096 Oct 29 04:59 .cache/
rw-r--r-- 1 ubuntu ubuntu 807 Mar 31 2024 .profile
rwx----- 2 ubuntu ubuntu 4096 Oct 29 04:52 .ssh/
rw-r--r-- 1 ubuntu ubuntu 0 Oct 29 05:58 .sudo_as_admin_successful
buntu@ip-172-31-35-242:~$ sudo mount /dev/xvdf /mnt/data
ount: /mnt/data: mount point does not exist.
      dmesg(1) may have more information after failed mount system call.
buntu@ip-172-31-35-242:~$ sudo mount /dev/xvdf /mnt/mydata
buntu@ip-172-31-35-242:~$ df -h
Filesystem      Size   Used  Avail Use% Mounted on
dev/root       6.8G  1.6G  5.2G  24% /
mpfs          479M    0  479M   0% /dev/shm
mpfs          192M  888K  191M   1% /run
mpfs          5.0M    0  5.0M   0% /run/lock
dev/xvda16     881M   76M  744M  10% /boot
dev/xvda15     105M   6.1M  99M   6% /boot/efi
mpfs          96M   12K  96M   1% /run/user/1000
dev/xvdf       4.9G  24K  4.6G  1% /mnt/mydata
buntu@ip-172-31-35-242:~$ cd /mnt/mydata
buntu@ip-172-31-35-242:/mnt/mydata$ ll
total 24
rwxr-xr-x 3 root root 4096 Oct 29 06:04 ../
rwxr-xr-x 3 root root 4096 Oct 29 06:05 ../.
rwx----- 2 root root 16384 Oct 29 06:04 lost+found/
buntu@ip-172-31-35-242:/mnt/mydata$ 

```

Go to volumes and select our 5Gib volume click on Actions > Modify volume change the size to 8Gib and click on

Modify. Confirm the modification. AWS will automatically resize the volume.

The screenshot shows the AWS EC2 Modify Volume page. The volume ID is `vol-05cc646ca7423c7b7`, type is General Purpose SSD (gp3), size is 8 GiB, IOPS is 3000, and throughput is 125 MiB/s. The status bar at the bottom indicates "Activate Windows Go to Settings to activate Windows."

In the below image we can able to see that the volume size has been increased from 5GiB to 8GiB.

The screenshot shows the AWS EC2 Volumes page. It lists two volumes: one with 5 GiB and another with 8 GiB. The status bar at the bottom indicates "Activate Windows Go to Settings to activate Windows."

Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot ID	Created
volume	<code>vol-032fe532202c98a5e</code>	gp3	5 GiB	3000	125	-	2024/10/29 10:41 GMT+5:30
-	<code>vol-0aa37c5122bad85ee</code>	gp3	8 GiB	3000	125	<code>snap-0bc7570...</code>	2024/10/29 10:40 GMT+5:30

Return to our PuTTY and use grow part to extend the partition to occupy the increased volume space and use resize2fs to extend the filesystem to utilize the full size in the below image.

```
lost+found testfile1.txt testfile2.txt
root@ip-172-31-35-242:/mnt/mydata# df -h
Filesystem      Size  Used Avail Use% Mounted on
/dev/root       6.8G   1.6G  5.2G  24% /
tmpfs          479M     0  479M   0% /dev/shm
tmpfs          192M   88K  191M   1% /run/lock
tmpfs          5.0M     0  5.0M   0% /run
/dev/xvda16    881M   76M  744M  10% /boot
/dev/xvda15   105M   6.1M  99M   6% /boot/efi
tmpfs          96M   12K  96M   1% /run/user/1000
/dev/xvdf      4.9G  288K  4.6G  1% /mnt/mydata
root@ip-172-31-35-242:/mnt/mydata# lsblk
NAME   MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
loop0    7:0    0 25.2M  1 loop /snap/amazon-ssm-agent/7993
loop1    7:1    0 38.8M  1 loop /snap/snapd/21759
loop2    7:2    0 55.7M  1 loop /snap/core18/2829
xvda   202:0    0   8G  0 disk 
└─xvda1  202:1    0   7G  0 part /
└─xvda14 202:14   0   4M  0 part 
└─xvda15 202:15   0 106M 0 part /boot/efi
└─xvda16 259:0    0  913M 0 part /boot
xvdf   202:80   0   8G  0 disk /mnt/mydata
root@ip-172-31-35-242:/mnt/mydata# 
```

Go to volumes in the EC2 select the volume click on Action > Create snapshot enter a description click on create snapshot. Snapshot will appear under the snapshots in the Elastic Block Store section.

The screenshot shows the AWS EC2 Volumes page. On the left, there's a navigation sidebar with options like EC2 Dashboard, Services, and a search bar. The main area displays two volumes in a table:

Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot ID	Created
volume	vol-032fe532202c98a5e	gp3	8 GiB	3000	125	-	2024/10/29 10:41 GMT+5:...
-	vol-0aa37c512bad85ee	gp3	8 GiB	3000	125	snap-0bc7570...	2024/10/29 10:40 GMT+5:...

Below the volumes, there's a section titled "Fault tolerance for all volumes in this Region". Under "Snapshot summary", it says "Recently backed up volumes / Total # volumes" followed by "0 / 2". There's also a note about Data Lifecycle Manager default policy for EBS Snapshots status.

Select the snapshot you created earlier with the snapshot selected click > Action > Create Volume in that Select Availability Zone as your EC2 instance select Volume size and Volume type Choose the desired type Click create Volume to create a new volume from the snapshot.

Successfully created snapshot snap-0c764d4bc6e15ce31 from volume vol-032fe532202c98a5e.
If you need your snapshot to be immediately available consider using Fast Snapshot Restore.

Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot ID	Created
volume	vol-032fe532202c98a5e	gp3	8 GiB	3000	125	-	2024/10/29 10:41 GMT+5:30
-	vol-0aa37c5122bad85ee	gp3	8 GiB	3000	125	snap-0bc7570...	2024/10/29 10:40 GMT+5:30

Fault tolerance for all volumes in this Region

Snapshot summary

Recently backed up volumes / Total # volumes
0 / 2

Last updated on Tue, Oct 29, 2024, 10:41:19 AM (GMT+05:30)

Data Lifecycle Manager default policy for EBS Snapshots status
No default policy set up | Create policy

Activate Windows
Go to Settings to activate Windows.

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CloudShell Feedback
30°C Sunny
Search

In the Volumes section under Elastic Block Store find the newly created volume click Action > Attach Volume select our EC2 instance and choose a device name Click on Attach Volume to attach it to your instance.

Successfully attached Volume to EC2 instance.

Successfully created volume vol-03f1cc37270f91bac.

Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot ID	Created
-	vol-0b39e64a442c04c01	gp3	8 GiB	3000	125	snap-0bc7570...	2024/10/28 12:07 GMT+5:30
-	vol-0cfb8ceab419759e8	gp3	8 GiB	3000	125	snap-0bc7570...	2024/10/28 12:00 GMT+5:30
-	vol-03f1cc37270f91bac	gp3	8 GiB	3000	125	-	2024/10/28 12:32:32 PM (GMT+05:30)

Fault tolerance for all volumes in this Region

Snapshot summary

Recently backed up volumes / Total # volumes
0 / 2

Last updated on Mon, Oct 28, 2024, 12:32:32 PM (GMT+05:30)

Data Lifecycle Manager default policy for EBS Snapshots status
No default policy set up | Create policy

Activate Windows
Go to Settings to activate Windows.

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CloudShell Feedback
12:35 28/10/2024

Open PuTTY and connect to our instance run the lsblk command to verify the attached volume. We will see the new volume listed.

```
root@ip-172-31-35-242: ~
[1] login as: ubuntu
[2] Authenticating with public key "imported-openssh-key"
Welcome to Ubuntu 24.04.1 LTS (GNU/Linux 6.8.0-1016-aws x86_64)

 * Documentation: https://help.ubuntu.com
 * Management: https://landscape.canonical.com
 * Support: https://ubuntu.com/pro

System information as of Tue Oct 29 06:49:07 UTC 2024

System load: 0.0          Processes:           116
Usage of /: 23.2% of 6.71GB  Users logged in: 1
Memory usage: 22%          IPv4 address for enX0: 172.31.35.242
Swap usage: 0%

* Ubuntu Pro delivers the most comprehensive open source security and
  compliance features.

https://ubuntu.com/aws/pro

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

Last login: Tue Oct 29 05:53:18 2024 from 49.206.59.74
ubuntu@ip-172-31-35-242:~$ sudo su -
root@ip-172-31-35-242:~# lsblk
NAME   MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
loop0    7:0    0 25.2M  1 loop /snap/amazon-ssm-agent/7993
loop1    7:1    0 38.9M  1 loop /snap/snapd/21759
loop2    7:2    0 55.7M  1 loop /snap/core18/2829
xvda   202:0    0   8G  0 disk
└─xvda1 202:1    0   7G  0 part /
  ├─xvda14 202:14   0   4M  0 part
  ├─xvda15 202:15   0 106M 0 part /boot/efi
  └─xvda16 259:0    0 913M 0 part /boot
xvdf   202:80   0   8G  0 disk /mnt/mydata
root@ip-172-31-35-242:~#
```

LAB 7- AMI (AMAZON MACHINE IMAGE)

Select the instance and with the instance selected, click Actions > Image and templates > Create image. In the Create Image name image description optionally, add a description instance volumes verify that the root volume and any additional volumes you want are selected. You can adjust the size or add new volumes as needed. No reboot check this option if you want to avoid a reboot during image creation.

Currently creating AMI ami-0a25737b15efc693e from instance i-0d6e7a0910c254b06. Check that the AMI status is 'Available' before deleting the instance or carrying out other actions related to this AMI.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IP
p-1	i-0d6e7a0910c254b06	Running	t2.micro	us-east-1d	ec2-54-245-132-143

i-0d6e7a0910c254b06 (p-1)

Details | Status and alarms | Monitoring | Security | Networking | Storage | Tags

Instance summary | **Info**

Instance details | **Info**

Platform	Amazon Linux	AMI ID	ami-06b21ccaeff8cd686	Monitoring
Platform details	Linux/UNIX	AMI name	al2023-ami-2023.6.20241010.0-kernel-6.1-x86_64	Termination protection
Stop protection		Launch time		AMI location

Activate Windows
Go to Settings to activate Windows.

Successfully created Amazon Machine Image we can able to see in the below image.

Amazon Machine Images (AMIs) (1/1) | **Info**

Owned by me | Find AMI by attribute or tag

Name	AMI ID	Source	Owner	Visibility
pinku	ami-0a25737b15efc693e	058264135441/pinku	058264135441	Private

AMI ID: ami-0a25737b15efc693e

Details | Permissions | Storage | Tags

AMI ID	ami-0a25737b15efc693e	Image type	machine	Platform details	Linux/UNIX	Root device type	EBS
AMI name	pinku	Owner account ID	058264135441	Architecture	x86_64	Usage operation	RunInstances
Root device name	/dev/xvda	Status	Pending	Source	058264135441/pinku	Virtualization type	hvm
Boot mode	uefi-preferred	State reason	-	Creation date	2024-10-29T06:17:31.000Z	Kernel ID	

Activate Windows
Go to Settings to activate Windows.

LAB 8 – LOAD BALANCER

Launch two EC2 instances ensure both instances are in same availability zone for simplicity and assign security groups to the instances that allows only inbound traffic from load balancer on port 80.

The screenshot shows the AWS EC2 Instances page. The left sidebar lists services like Images, Elastic Block Store, Network & Security, Load Balancing, and Auto Scaling. The main content area displays a table of instances:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 D
nginx	i-0ad36bbc8e224301b	Running	t2.micro	2/2 checks passed	View alarms	us-east-1f	ec2-44-222-1
HTTPD	i-0e2d55b33f21e4f05	Running	t2.micro	2/2 checks passed	View alarms	us-east-1f	ec2-98-82-13

A modal window titled "Select an instance" is open at the bottom, showing the same list of instances.

In the below image we can see that inbound traffic on port 80 (http)

The below image shows that the before modification of inbound rules.

The below image shows that the inbound rules has been successfully updated.

Connect both instances using PuTTY and installing web server using ec2-user for nginx. Switch to root user through **sudo su -**, update the package index using **yum install update -y**, Install nginx using **yum install nginx -y** and start and enable nginx server using **systemctl start nginx && systemctl enable nginx**.

```

root@ip-172-31-19-221:~#
[ec2-user login as: ec2-user
Authenticating with public key "imported-openssh-key"
.
.
.
Amazon Linux 2023
https://aws.amazon.com/linux/amazon-linux-2023
[ec2-user@ip-172-31-19-221 ~]$ sudo su -
[root@ip-172-31-19-221 ~]# yum update -y
Last metadata expiration check: 0:02:10 ago on Tue Oct 29 11:07:44 2024.
Dependencies resolved.
Nothing to do.
Complete!
[root@ip-172-31-19-221 ~]# yum install nginx -y
Last metadata expiration check: 0:02:20 ago on Tue Oct 29 11:07:44 2024.
Dependencies resolved.
=====
Package           Arch   Version        Repository      Size
=====
Installing:
nginx             x86_64  1:1.24.0-1.amzn2023.0.4    amazonlinux   33 k
Installing dependencies:
generic-logos-httd noarch  18.0.0-12.amzn2023.0.3    amazonlinux   19 k
gperftools-libs   x86_64  2.9.1-1.amzn2023.0.3    amazonlinux   308 k
libunwind          x86_64  1.4.0-5.amzn2023.0.2    amazonlinux   66 k
nginx-core         x86_64  1:1.24.0-1.amzn2023.0.4    amazonlinux   586 k
nginx-filesystem  noarch  1:1.24.0-1.amzn2023.0.4    amazonlinux   9.8 k
nginx-mimetypes   noarch  2.1.49-3.amzn2023.0.3    amazonlinux   21 k
Transaction Summary
=====
Install 7 Packages

Total download size: 1.0 M
Installed size: 3.4 M
Downloading Packages:
(1/7): libunwind-1.4.0-5.amzn2023.0.2.x86_64.rpm 1.2 MB/s | 66 kB  00:00
(2/7): generic-logos-httd-18.0.0-12.amzn2023.0.3.x86_64.rpm 4.4 MB/s | 308 kB  00:00
(3/7): gperftools-libs-2.9.1-1.amzn2023.0.3.x86_64.rpm 1.6 MB/s | 33 kB  00:00
(4/7): nginx-1.24.0-1.amzn2023.0.4.x86_64.rpm 9.8 kB  00:00
(5/7): nginx-filesystem-1.24.0-1.amzn2023.0.4.n.425 kB/s | 9.8 kB  00:00
(6/7): nginx-mimetypes-2.1.49-3.amzn2023.0.3.no 975 kB/s | 21 kB  00:00
(7/7): nginx-core-1.24.0-1.amzn2023.0.4.x86_64. 13 MB/s | 586 kB  00:00
Total                                         6.8 MB/s | 1.0 MB  00:00
Running transaction check
transaction check succeeded.

```

We can able to check the status through systemctl status and we can able to see nginx server is in active state in below image.

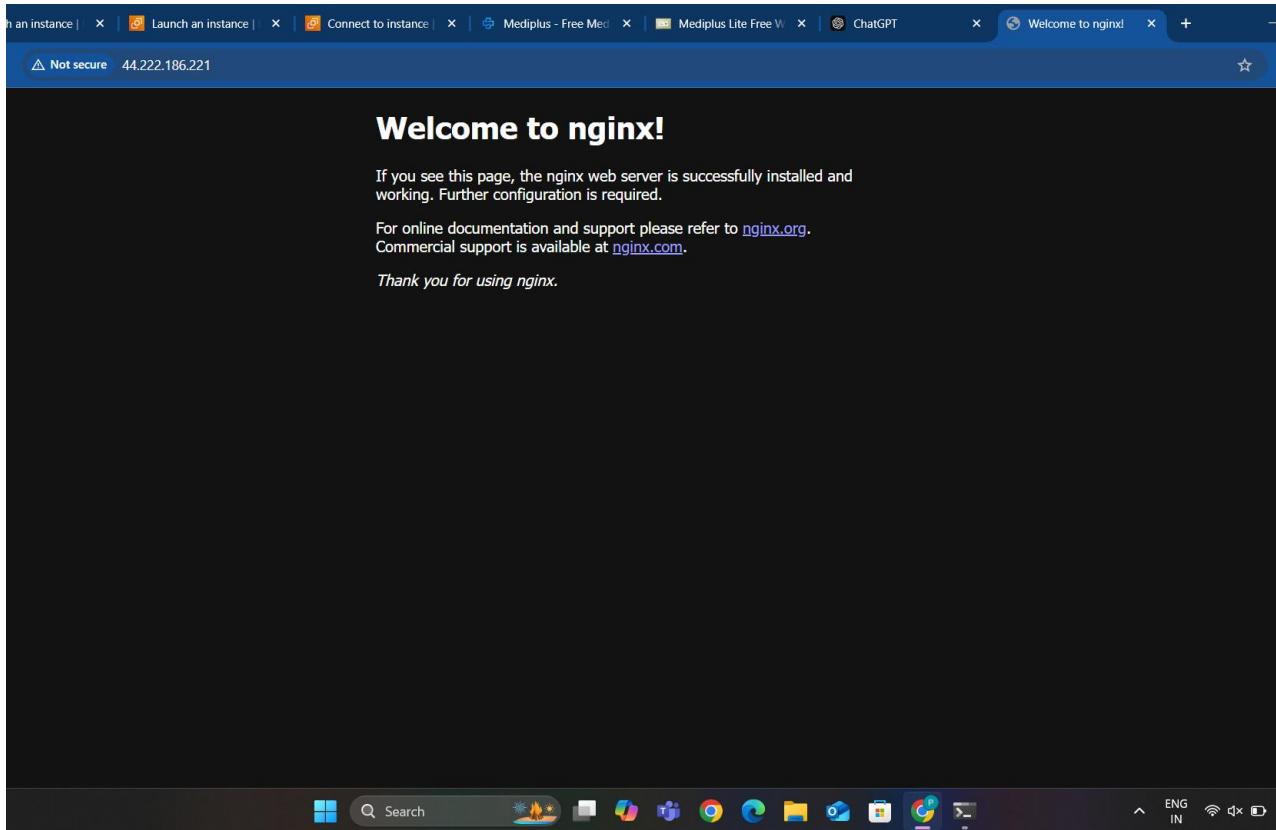
```

[root@ip-172-31-19-221 ~]# systemctl status nginx
● nginx.service - The nginx HTTP and reverse proxy server
   Loaded: loaded (/usr/lib/systemd/system/nginx.service; enabled; preset: disabled)
   Active: active (running) since Tue 2024-10-29 11:05:54 UTC; 1min 6s ago
     Process: 25684 ExecStartPre=/usr/bin/rm -f /run/nginx.pid (code=exited, status=0/SUCCESS)
     Process: 25685 ExecStartPre=/usr/sbin/nginx -t (code=exited, status=0/SUCCESS)
     Process: 25686 ExecStart=/usr/sbin/nginx (code=exited, status=0/SUCCESS)
   Main PID: 25687 (nginx)
      Tasks: 2 (limit: 1112)
     Memory: 2.2M
       CPU: 49ms
      CGroup: /system.slice/nginx.service
              ├─25687 "nginx: master process /usr/sbin/nginx"
              └─25688 "nginx: worker process"

Oct 29 11:10:54 ip-172-31-19-221.ec2.internal systemd[1]: Starting nginx.service - The nginx HTTP and reverse proxy server...
Oct 29 11:10:54 ip-172-31-19-221.ec2.internal nginx[25685]: nginx: the configuration file /etc/nginx/nginx.conf syntax is ok
Oct 29 11:10:54 ip-172-31-19-221.ec2.internal nginx[25685]: nginx: configuration file /etc/nginx/nginx.conf test is successful
Oct 29 11:10:54 ip-172-31-19-221.ec2.internal systemd[1]: Started nginx.service - The nginx HTTP and reverse proxy server.
[root@ip-172-31-19-221 ~]# 

```

Access nginx web server through copy each instance's public IP address in browser to verify. If the server is properly connected then we can able to see like a below image and we can confirm that nginx server is connected.



Connect both instances using PuTTY and installing web server using ec2-user for Apache. Switch to root user through **sudo su -**, update the package index using **yum install update -y**, Install Apache using **yum install httpd -y**.

```

root@ip-172-31-22-170:~#
[ec2-user@ip-172-31-22-170 ~]$ login as: ec2-user
[ec2-user@ip-172-31-22-170 ~]$ authenticating with public key "imported-openssh-key"
[ec2-user@ip-172-31-22-170 ~]$ 
[ec2-user@ip-172-31-22-170 ~]$ 
[ec2-user@ip-172-31-22-170 ~]$ 
[ec2-user@ip-172-31-22-170 ~]$ sudo su -
[ec2-user@ip-172-31-22-170 ~]# yum update -y
Last metadata expiration check: 0:02:32 ago on Tue Oct 29 11:14:01 2024.
Dependencies resolved.
Nothing to do.
Nothing to do.
Completed.
[ec2-user@ip-172-31-22-170 ~]# yum install httpd -y
Last metadata expiration check: 0:02:40 ago on Tue Oct 29 11:14:01 2024.
Dependencies resolved.

=====
Package           Architecture      version       Repository    Size
=====
Installing:
httpd            x86_64          2.4.62-1.amzn2023
Installing dependencies:
apr              x86_64          1.7.2-2.amzn2023.0.2
apr-util         x86_64          1.6.3-1.amzn2023.0.1
generic-logos-httpd noarch        18.0.0-12.amzn2023.0.3
httpd-core       x86_64          2.4.62-1.amzn2023.0.2
httpd-filesystem noarch        2.4.62-1.amzn2023.0.2
httpd-tools      x86_64          2.4.62-1.amzn2023.0.2
libprotol        x86_64          1.0.9-4.amzn2023.0.2
mailcaw          noarch        2.1.1.49-3.amzn2023.0.3
Installing weak dependencies:
apr-util-openssl x86_64          1.6.3-1.amzn2023.0.1
mod_http2        x86_64          2.0.27-1.amzn2023.0.3
mod_lua          x86_64          2.4.62-1.amzn2023.0.2

Transaction Summary
=====
Install 12 Packages

Total download size: 2.3 M
Installed size: 6.9 M
Downloading Packages:
(1/12): apr-util-openssl-1.6.3-1.amzn2023.0.1.x86_64.rpm 266 kB/s | 17 kB 00:00
(2/12): apr-1.7.2-2.amzn2023.0.2.x86_64.rpm 1.7 MB/s | 129 kB 00:00
(3/12): generic-logos-httpd-18.0.0-12.amzn2023.0.3.noarch.rpm 1.0 MB/s | 19 kB 00:00
(4/12): httpd-2.4.62-1.amzn2023.0.2.x86_64.rpm 2.1 MB/s | 48 kB 00:00
(5/12): httpd-filesystem-2.4.62-1.amzn2023.0.2.noarch.rpm 719 kB/s | 14 kB 00:00

```

Start and enable httpd server using **systemctl start httpd && systemctl enable httpd**.

```

root@ip-172-31-22-170:~#
(6/12): httpd-core-2.4.62-1.amzn2023.x86_64.rpm
(7/12): apr-util-1.6.3-1.amzn2023.0.1.x86_64.rpm
(8/12): httpd-tools-2.4.62-1.amzn2023.x86_64.rpm
(9/12): mailcap-2.1.49-3.amzn2023.0.3.noarch.rpm
(10/12): libbrotli-1.0.9-4.amzn2023.0.2.x86_64.rpm
(11/12): mod_http2-2.0.27-1.amzn2023.0.3.x86_64.rpm
(12/12): mod_lua-2.4.62-1.amzn2023.x86_64.rpm
Total
Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction
Preparing transaction
  Installing : apr-1.7.2-2.amzn2023.0.2.x86_64
  Installing : apr-util-openssl-1.6.3-1.amzn2023.0.1.x86_64
  Installing : apr-util-1.6.3-1.amzn2023.0.1.x86_64
  Installing : mailcap-2.1.49-3.amzn2023.0.3.noarch
  Installing : httpd-tools-2.4.62-1.amzn2023.x86_64
  Installing : libbrotli-1.0.9-4.amzn2023.0.2.x86_64
  Running scriptlet: httpd-filesystem-2.4.62-1.amzn2023.noarch
  Installing : httpd-filesystem-2.4.62-1.amzn2023.noarch
  Installing : httpd-core-2.4.62-1.amzn2023.x86_64
  Installing : mod_http2-2.0.27-1.amzn2023.0.3.x86_64
  Installing : mod_lua-2.4.62-1.amzn2023.x86_64
  Installing : generic-logos-httpd-18.0.0-12.amzn2023.0.3.noarch
  Installing : httpd-2.4.62-1.amzn2023.x86_64
  Running scriptlet: httpd-2.4.62-1.amzn2023.0.2.x86_64
  Verifying   : apr-1.7.2-2.amzn2023.0.2.x86_64
  Verifying   : apr-util-1.6.3-1.amzn2023.0.1.x86_64
  Verifying   : apr-util-openssl-1.6.3-1.amzn2023.0.1.x86_64
  Verifying   : generic-logos-httpd-18.0.0-12.amzn2023.0.3.noarch
  Verifying   : httpd-2.4.62-1.amzn2023.x86_64
  Verifying   : httpd-filesystem-2.4.62-1.amzn2023.x86_64
  Verifying   : httpd-tools-2.4.62-1.amzn2023.x86_64
  Verifying   : libbrotli-1.0.9-4.amzn2023.0.2.x86_64
  Verifying   : mailcap-2.1.49-3.amzn2023.0.3.noarch
  Verifying   : mod_http2-2.0.27-1.amzn2023.0.3.x86_64
  Verifying   : mod_lua-2.4.62-1.amzn2023.x86_64
Installed:
  apr-1.7.2-2.amzn2023.0.2.x86_64      apr-util-openssl-1.6.3-1.amzn2023.0.1.x86_64      generic-logos-httpd-18.0.0-12.amzn2023.0.3.noarch
  httpd-2.4.62-1.amzn2023.x86_64       httpd-core-2.4.62-1.amzn2023.x86_64      httpd-filesystem-2.4.62-1.amzn2023.noarch
  libbrotli-1.0.9-4.amzn2023.0.2.x86_64  mailcap-2.1.49-3.amzn2023.0.3.noarch      mod_http2-2.0.27-1.amzn2023.0.3.x86_64
                                          mod_lua-2.4.62-1.amzn2023.x86_64
Complete!
[root@ip-172-31-22-170 ~]# systemctl enable httpd
Created symlink /etc/systemd/system/multi-user.target.wants/httpd.service → /usr/lib/systemd/system/httpd.service.
[root@ip-172-31-22-170 ~]# systemctl start httpd
[root@ip-172-31-22-170 ~]# 

```

Copy the public IP of your instance and paster it in our browser so that we can able to see like a below image if it is like this then the server is connected properly.



If you are a member of the general public:

The fact that you are seeing this page indicates that the website you just visited is either experiencing problems, or is undergoing routine maintenance.

If you would like to let the administrators of this website know that you've seen this page instead of the page you expected, you should send them e-mail. In general, mail sent to the name "webmaster" and directed to the website's domain should reach the appropriate person.

For example, if you experienced problems while visiting www.example.com, you should send e-mail to "webmaster@example.com".

If you are the website administrator:

You may now add content to the directory /var/www/html/. Note that until you do so, people visiting your website will see this page, and not your content. To prevent this page from ever being used, follow the instructions in the file /etc/httpd/conf.d/welcome.conf.

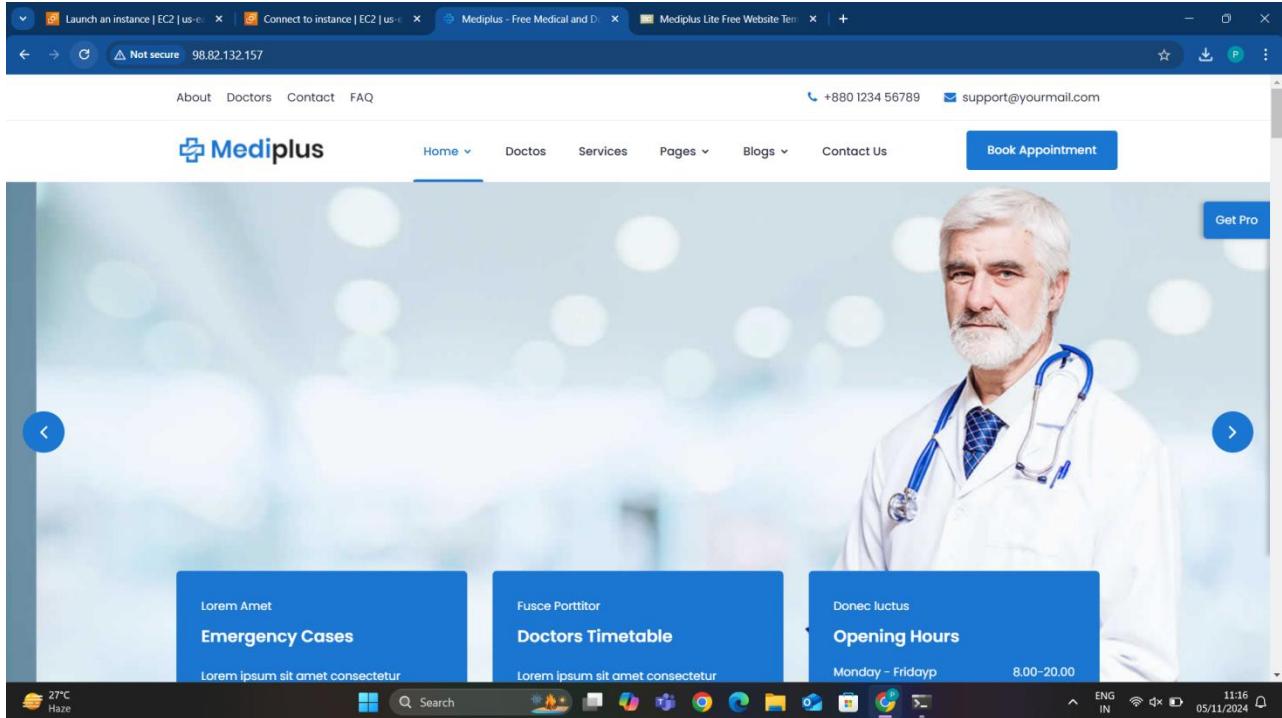
You are free to use the image below on web sites powered by the Apache HTTP Server:



Deploying one application through Apache (httpd):

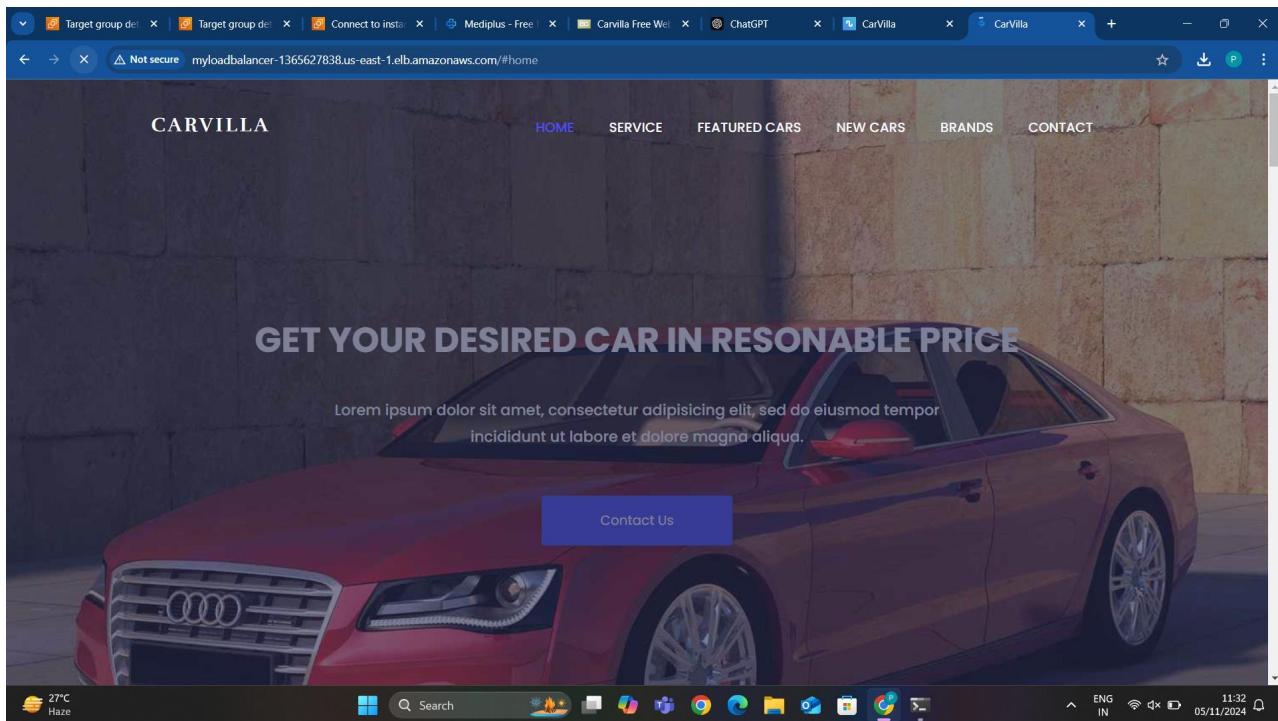
Setting Up the Apache (HTTP) Server with "Antique Cafe" Template Connect to the Apache EC2 instance using SSH

(ec2-user). Open Antique Cafe and click and copy the link and go to PuTTY and paste using wget <link> we will get one zip file that is **antique-café.zip** unzip the file using **unzip <filename>** after that we will get another file and go to that file and check through ll we will find some files move all files for the httpd path usually /var/www/html/ this is the default path for httpd. After that copy the public IP and paster it our browser so that we can able to see the application as shown in the below images.



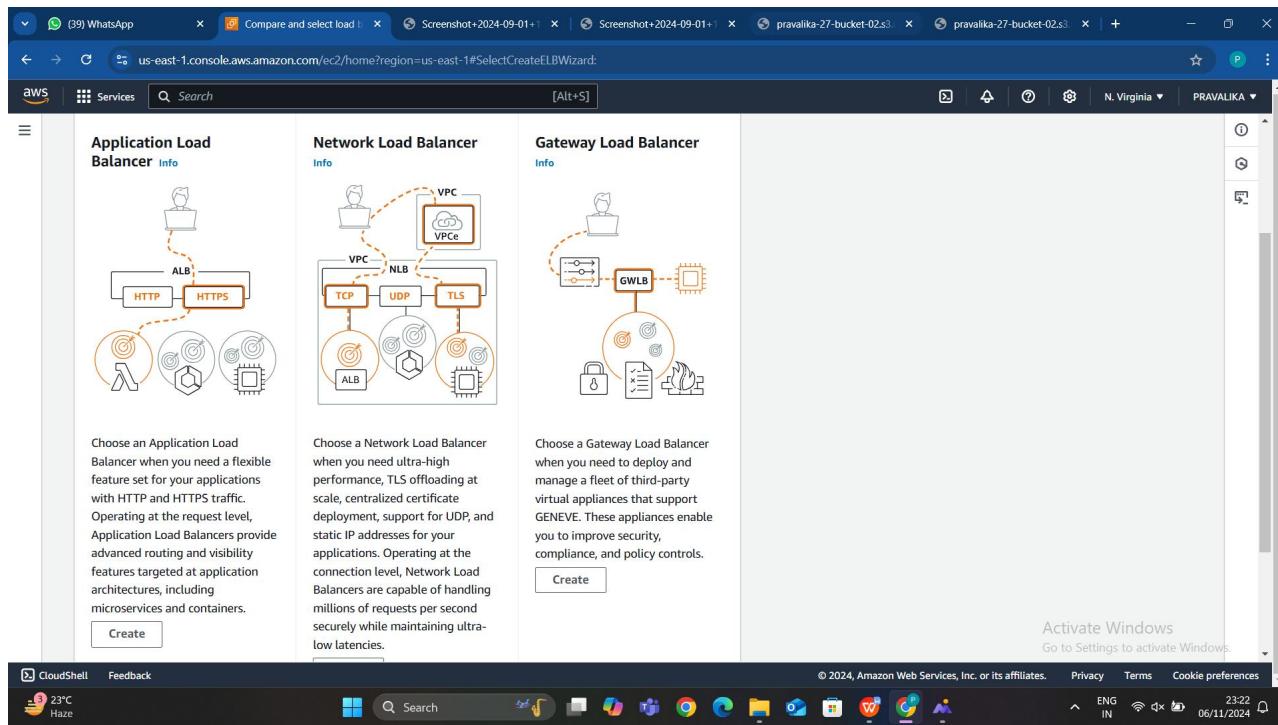
Setting Up the Nginx Server with Application.

Setting Up the nginx Server with "Grand Coffee" Template Connect to the nginx EC2 instance using SSH (ec2-user). Open Grand Coffee and click and copy the link and go to PuTTY and paste using wget <link> we will get one zip file that is **file.zip** unzip the file using **unzip <filename>** after that we will get another file and go to that file and check through ll we will find some files move all files for the nginx path usually /var/www/html/ or /usr/share/nginx/html this is the default path for nginx. After that copy the public IP and paster it our browser so that we can able to see the application as shown in the below images.



ATTACHING LOAD BALANCER TO SERVERS:

Go to EC2 Dashboard > Load Balancers and click Create Load Balancer. Choose Application Load Balancer or Classic Load Balancer.



Configure the load balancer give name for the load balancer Scheme we have to select **Internet-facing** IP Address Type is IPv4. Listeners Set the listener protocol to HTTP and port to 80.

Create a target group

The screenshot shows the AWS EC2 Target Groups page. A green success message at the top states: "Successfully created the target group: mytarget. Anomaly detection is automatically applied to all registered targets. Results can be viewed in the Targets tab." The main section displays the target group details for "mytarget".
Details:
- Target type: Instance
- Protocol: Port
- IP address type: IPv4
- Load balancer: None associated
- Protocol version: HTTP1
- VPC: vpc-034ea5ce7cce0aef8
Statistics:
- Total targets: 2
- Healthy: 0
- Unhealthy: 0
- Unused: 2
- Initial: 0
- Draining: 0
A note below the statistics says: "► Distribution of targets by Availability Zone (AZ)
Select values in this table to see corresponding filters applied to the Registered targets table below."

Availability Zones Select the availability zone where your EC2 instances are located and select one extra availability zone. If not it will through an error

Configure Security Groups for the Load Balancer create a security group for the load balancer, allowing inbound HTTP traffic on port 80. If we have already then we can able to select it. Before creating Load balancer we need to create a target group if not we can able to create a target group directly. I am creating directly from configurations page after creating target group selecting target group.

WE NEED TO SELECT THE TARGET GROUP

In the Registry targets we need to select our instances and we need to click on create target group which is shown in below images.

Successfully created Target group we can able to see in the below image.

Ports for the selected instances
Ports for routing traffic to the selected instances.
80
1-65535 (separate multiple ports with commas)

Include as pending below

2 selections are now pending below. Include more or register targets when ready.

Review targets

Targets (2)

Instance ID	Name	Port	State	Security groups	Zone	Private IPv4 address	Subnet ID	Launch time
i-0f48c2e8e61b2872b	s-1	80	Running	launch-wizard-1	us-east-1c	172.31.29.230	subnet-08efbdd23c535c6e7	October 29, 2024, 17:00
i-0e7784bad65f3ced6	s-2	80	Running	launch-wizard-1	us-east-1c	172.31.31.236	subnet-08efbdd23c535c6e7	October 29, 2024, 17:00

2 pending

Cancel Register pending targets Go to Settings to activate Windows.

Click on target group go to targets and check our two instances are Healthy so again go to the configuration page.

We need to assign a target group at the configuration of load balancer.

In the below image I have assigned a target group for load balancer. After that click on create Load balancer.

In the below image we can able to see our load balancer has been created Successfully.

Successfully created load balancer: myloadbalancer
It might take a few minutes for your load balancer to fully set up and route traffic. Targets will also take a few minutes to complete the registration process and pass initial health checks.

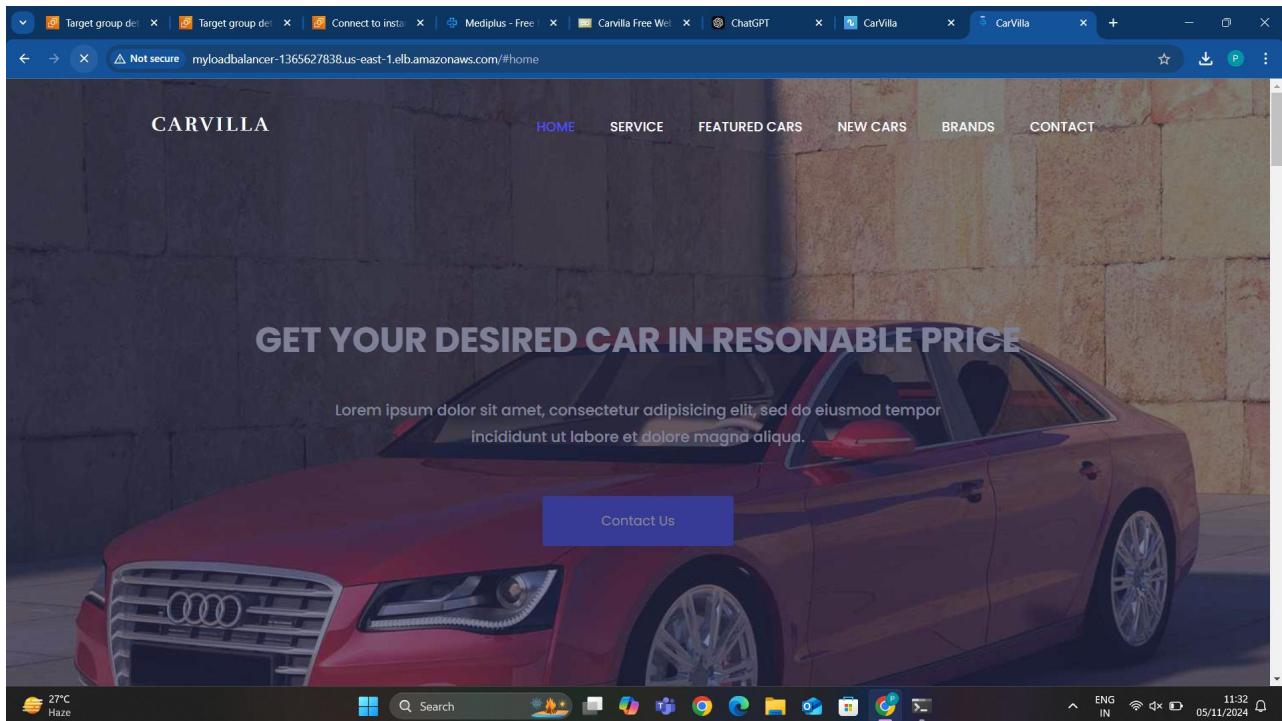
myloadbalancer

Details

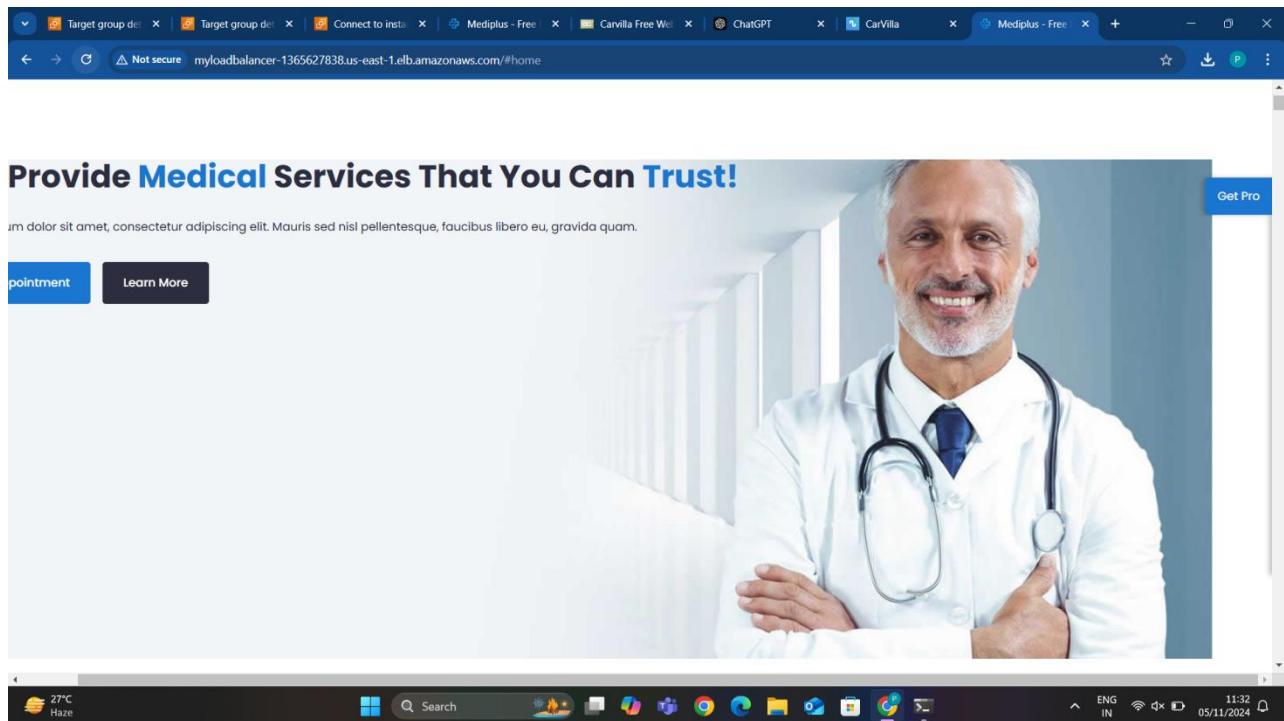
Load balancer type Application	Status Provisioning	VPC vpc-034ea5ce7cce0aef8	Load balancer IP address type IPv4
Scheme Internet-facing	Hosted zone Z35SXDOTRQ7X7K	Availability Zones	Date created November 5, 2024, 11:27 (UTC+05:30)

We need to copy DNS url and paste it in browser we can able to see Grand Coffee first and click on reload option

provided at the top left corner.



After reloading we can able to see the Antique Cafe so that repeat it two or three types load is fluctuate and we can able to see two applications alternatively. From this we can able to see Load is distributing.



LAB 9 – AUTO SCALING GROUPS (ASG)

Create an Auto Scaling Group (ASG) go to Auto Scaling Groups in the EC2 Dashboard. Click Create Auto Scaling group. Select Launch template and choose the template you created earlier. Auto Scaling group name: Give it a descriptive name, like UbuntuAutoScalingGroup. VPC and Subnet Select the VPC and the subnets where you want the instances to launch.

Successfully template has been created.

The screenshot shows the AWS EC2 console with a green success banner at the top stating "Successfully created mytemplate(lt-0f2aea7890703d197).". Below the banner, there's a link to "Actions log". A "Next Steps" section follows, containing links to "Launch an instance", "Create an Auto Scaling group from your template", "Create a Spot Fleet", and "Create Spot Fleet". At the bottom, there's a toolbar with icons for CloudShell, Feedback, and various services like Lambda, S3, and CloudWatch.

Configure ASG Size and Scaling Policies Set the Desired Capacity:

- Minimum capacity: 1
- Desired capacity: 2
- Maximum capacity: 3

The screenshot shows the AWS Auto Scaling Groups creation wizard at Step 5: Configure group size and scaling. It asks for the desired capacity, which is set to 1. Below this, it shows scaling limits with min desired capacity at 1 and max desired capacity at 3. Under automatic scaling, the "No scaling policies" option is selected. The "Scaling - Info" section indicates that the group can be resized manually or automatically. The bottom right corner shows a message to activate Windows.

Scaling policies for simplicity, you can use the default setting, which keeps instances at the desired capacity. If you

want more control, you can set policies based on CPU utilization or other metrics.

Review and create Auto Scaling Group below we can see that Auto Scaling Group has been created.

The screenshot shows the AWS Auto Scaling Groups page. At the top, there are tabs for Launch an instance | EC2, Instances | EC2 | us-east-1, Auto Scaling groups | EC2, Create launch template | E, Launch an instance | EC2, ChatGPT, and a search bar. Below the tabs, the URL is us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#AutoScalingGroups:id=auto%2520scaling%2520group:view=details. The main content area displays 'Auto Scaling groups (1/1) Info'. A search bar and a table with one row are shown. The table columns include Name, Launch template/configuration, Instances, Status, Desired capacity, Min, Max, and Available. The single row shows 'auto scaling group' with 'mytemplate | Version Default' under Launch template/configuration, 1 instance, and 1 desired capacity. The status is '-' and the availability is 'us-east-1c'. Below this, a modal window titled 'Auto Scaling group: auto scaling group' is open, showing 'Group details' with fields for Auto Scaling group name (auto scaling group), Desired capacity (1), Desired capacity type (Units (number of instances)), and Amazon Resource Name (ARN) (arn:aws:autoscaling:us-east-1:058264135441:autoScalingGroups:f745bd4-77e0-4c07-b56e-8...). The modal has tabs for Details, Activity, Automatic scaling, Instance management, Monitoring, and Instance refresh, with 'Details' selected. The bottom of the screen shows a Windows taskbar with various icons and system information.

Verify Auto Scaling Behaviour after the ASG is created WS will automatically launch instances based on the desired capacity.

The screenshot shows the AWS Instances page. The left sidebar includes EC2 Dashboard, EC2 Global View, Events, Instances (selected), Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity, Reservations (New), Images, Elastic Block Store (Volumes, Snapshots, Lifecycle Manager), and Network & Security (Security Groups). The main content area displays 'Instances (4) Info' with a table of four instances. The table columns are Name, Instance ID, Instance state, Instance type, Status check, Alarm status, Availability Zone, and Public IP. The instances are: s-1 (terminated), s-2 (terminated), ubuntu (running), and another unnamed instance (running). Below the table, a message says 'Select an instance'. The bottom of the screen shows a Windows taskbar with various icons and system information.

Delete existing instances and monitor

Auto Scaling Group start launching additional instances to reach the capacity.

The screenshot shows the AWS EC2 Instances page. On the left, there's a navigation sidebar with options like EC2 Dashboard, EC2 Global View, Events, Instances (selected), Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity, and Reservations. Below that are sections for Images, Elastic Block Store, Network & Security, and CloudShell. The main content area displays a table of instances:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4
s-1	i-0f48c2ebe61b2872b	Terminated	t2.micro	-	View alarms +	us-east-1c	-
s-2	i-0e7784bad65f3ced6	Terminated	t2.micro	-	View alarms +	us-east-1c	-
ubuntu	i-0003cbadab39ef534	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1c	ec2-54-17-
	i-03dafd106857481dd	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1c	ec2-34-22-
	i-0477b58795e9d4217	Running	t2.micro	Initializing	View alarms +	us-east-1c	ec2-98-84-

At the bottom, a modal window titled "Select an instance" is open. The status bar at the bottom right shows "Activate Windows" and the date "29/10/2024".

LAB-10 RDS

Amazon RDS is a managed database service supporting multiple engines (e.g., MySQL, PostgreSQL). It automates backups, patching, and scaling, while offering high availability with Multi-AZ deployment and robust security features.

Firstly we have to create one EC2 instance.

The screenshot shows the Amazon RDS Databases page. On the left, there's a navigation sidebar with options like Dashboard, Databases (selected), Query Editor, Performance insights, Snapshots, Exports in Amazon S3, Automated backups, Reserved instances, Proxies, Subnet groups, Parameter groups, Option groups, Custom engine versions, Zero-ETL integrations, and Events. The main content area displays a table of databases:

DB identifier	Status	Role	Engine	Region ...	Size	Recommendations
database-1	Creating	Instance	MySQL Co...	us-east-1f	db.t4g.mi...	

A modal window titled "Creating database database-1" is open, stating "Your database might take a few minutes to launch. You can use settings from database-1 to simplify configuration of suggested database add-ons while we finish creating your DB for you." Another modal window titled "Introducing Global Database writer endpoint" explains the writer endpoint feature. A notification bar at the bottom indicates "Consider creating a Blue/Green Deployment to minimize downtime during upgrades". The status bar at the bottom right shows "Activate Windows" and the date "29/10/2024".

In the console search for RDS service and click on Databases and click on create databases.

We have to give configurations for databases choose data creation method and choose Database Engine as MYSQL .

Select DB instance specifications and provide DB instance identifier optional and Provide Master username and Master password for security purpose.

Choose EC2 instance and computer resource as Connect to an EC2 Compute resource after that click on create database.

Database has been creating in the below image check the status. The status of the below image is creating.

The status of the below image is Backing-up.

The status of the below image is Modifying.

At last the database status is Available.

The screenshot shows the AWS RDS Management console with the URL us-east-1.console.aws.amazon.com/rds/home?region=us-east-1#databases. The left sidebar is titled 'Amazon RDS' and includes options like Dashboard, Databases (which is selected), Query Editor, Performance insights, Snapshots, Exports in Amazon S3, Automated backups, Reserved instances, Proxies, Subnet groups, Parameter groups, Option groups, Custom engine versions, and Zero-ETL integrations. The main content area is titled 'Successfully deleted DB instance database1' and shows the 'Databases' page. The table lists one database entry:

DB identifier	Status	Role	Engine	Region ...	Size	Recommendations
database2	Available	Instance	MySQL Co...	us-east-1d	db.t4g.mi...	

The status column shows a green checkmark next to 'Available'. The top navigation bar includes tabs for 'RDS' and 'Databases', and buttons for 'Group resources', 'Modify', 'Actions', 'Restore from S3', and 'Create database'. The bottom navigation bar includes links for 'CloudShell', 'Feedback', 'Search', and various system icons.

Click in the database it will open the below page and copy the Endpoint & port and paste it in PuTTY or terminal using command.

In Terminal install MySQL and using mysql -h <RDS-Endpoint> -u admin -P and provide password so we can able to access this RDS database from EC2 instance.

```
root@ip-172-31-40-82:~ + - X
Running transaction test
Transaction test succeeded
Running transaction
  Installing : 1:mariadb-5.5.68-1.amzn2.0.1.x86_64 1/1
  Verifying  : 1:mariadb-5.5.68-1.amzn2.0.1.x86_64 1/1

Installed:
  mariadb.x86_64 1:5.5.68-1.amzn2.0.1

Complete!
[root@ip-172-31-40-82 ~]# mysql -h database1.cz0q0wiegvl6.us-east-1.rds.amazonaws.com -u admin -p
Enter password:
^Z
[2]+  Stopped                  mysql -h database1.cz0q0wiegvl6.us-east-1.rds.amazonaws.com -u admin -p
[root@ip-172-31-40-82 ~]# mysql -h database1.cz0q0wiegvl6.us-east-1.rds.amazonaws.com -u admin -p
Enter password:
^Z
[3]+  Stopped                  mysql -h database1.cz0q0wiegvl6.us-east-1.rds.amazonaws.com -u admin -p
[root@ip-172-31-40-82 ~]# sleep 300
[root@ip-172-31-40-82 ~]# mysql -h database2.cz0q0wiegvl6.us-east-1.rds.amazonaws.com -u admin -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MySQL connection id is 27
Server version: 8.0.39 Source distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MySQL [(none)]>
```

Activate Windows
Go to Settings to activate Windows.



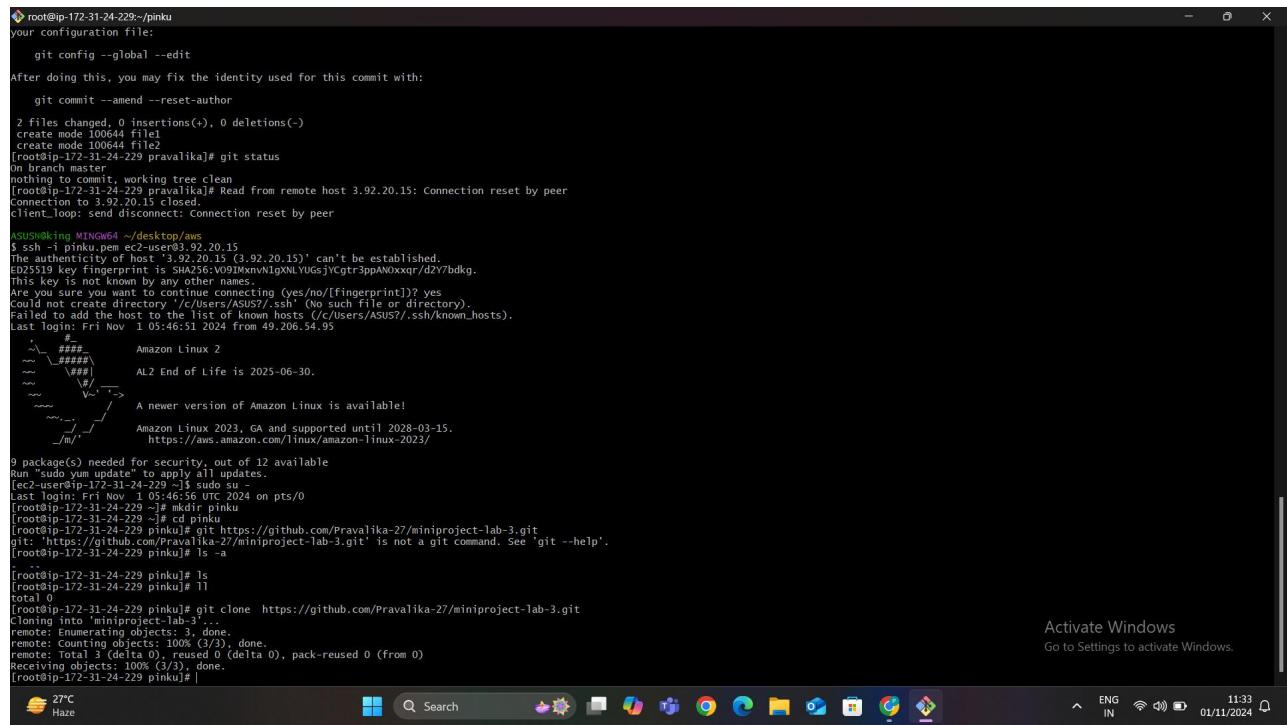
MINI PROJECT – 2

GIT-VERSION CONTROL SYSTEM(VCS) BY USING AMAZON WEB SERVICES

LAB-1 CREATING INSTANCE

Go to AWS Management console and navigate to EC2 in the AWS console search for EC2 and select it click on launch instance and give instance name select IAM based on preference choose instance type t2.micro key pair security group allow SSH access from IP address once configured click on launch instance.

Copy public IP of our instance and connect by using git bash



```
root@ip-172-31-24-229:~/pinku
your configuration file:
git config --global --edit
After doing this, you may fix the identity used for this commit with:
git commit --amend --reset-author
2 files changed, 0 insertions(+), 0 deletions(-)
create mode 100644 file1
create mode 100644 file2
[root@ip-172-31-24-229 pravalika]# git status
On branch master
nothing to commit, working tree clean
[root@ip-172-31-24-229 pravalika]# Read from remote host 3.92.20.15: Connection reset by peer
Connection to 3.92.20.15 closed.
client_loop: send disconnect: Connection reset by peer

ASUSW8LKing MINGW64 ~/desktop/aws
$ ssh -i pinku.pem ec2-user@3.92.20.15
The authenticity of host '3.92.20.15 (3.92.20.15)' can't be established.
ECDSA key fingerprint is SHA256:VO9tMxnvUlgKNUYGs\yCgtR3ppANxxgr/dZYbdkg.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Could not create directory '/c/Users/ASUS7/.ssh'. (No such file or directory).
Failed to add the host to the list of known hosts (/c/Users/ASUS7/.ssh/known_hosts).
Last logon: Fri Nov  1 05:46:51 2024 from 49.206.54.95
#
      #####
      \####)
      \##)
      \  \
      V- .-->
      /   /
     _m/  Amazon Linux 2
     _m/  AL2 End of Life is 2025-06-30.
     _m/  A newer version of Amazon Linux is available!
     _m/  Amazon Linux 2023, GA and supported until 2028-03-15.
     _m/  https://aws.amazon.com/linux/amazon-linux-2023/
9 package(s) needed for security, out of 12 available
Run "sudo yum update" to apply all updates.
[ec2-user@ip-172-31-24-229 ~]$ sudo su -
Last login: Fri Nov  1 05:46:51 2024 on pts/0
[root@ip-172-31-24-229 ~]# mkdir pinku
[root@ip-172-31-24-229 ~]# cd pinku
[root@ip-172-31-24-229 pinku]# git https://github.com/Pravalika-27/miniproject-lab-3.git
git: https://github.com/Pravalika-27/miniproject-lab-3.git' is not a git command. See 'git --help'.
[root@ip-172-31-24-229 pinku]# ls -a
[root@ip-172-31-24-229 pinku]# ls
[root@ip-172-31-24-229 pinku]# ll
total 0
[root@ip-172-31-24-229 pinku]# git clone https://github.com/Pravalika-27/miniproject-lab-3.git
Cloning into 'miniproject-lab-3'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
receiving objects: 100% (3/3), done.
[root@ip-172-31-24-229 pinku]# 
```

Activate Windows
Go to Settings to activate Windows.

11:33 01/11/2024

LAB-2 CREATING REPO IN LOCAL MACHINE

First install git in our local machine using yum install git -y and create one folder on local machine and navigate to that folder inside the folder initialize it using **git init**. This will create a hidden .git folder and set up the directory run the **git status** command to check the status.

The terminal window shows the following output:

```
Total download size: 7.1 M
Installed size: 34 M
Downloaded: 1/8 : perl-Error-0.17029-5.amzn2023.0.2.noarch.rpm
(1/8) : git-2.40.1-1.amzn2023.0.3.x86_64.rpm
(2/8) : perl-File-Find-1.37-477.amzn2023.0.6.noarch.rpm
(3/8) : perl-Git-2.40.1-1.amzn2023.0.3.noarch.rpm
(4/8) : perl-Git-Core-2.40.1-1.amzn2023.0.2.noarch.rpm
(5/8) : perl-TermReadkey-2.38-9.amzn2023.0.2.x86_64.rpm
(6/8) : perl-TermReadkey-2.38-9.amzn2023.0.2.x86_64.rpm
(7/8) : perl-Error-0.65-477.amzn2023.0.6.x86_64.rpm
(8/8) : git-core-doc-2.40.1-1.amzn2023.0.3.noarch.rpm
Total                                         968 kB/s | 54 kB   00:00
1.9 MB/s | 41 kB   00:00
1.0 MB/s | 26 kB   00:00
1.1 MB/s | 42 kB   00:00
1.2 MB/s | 41 kB   00:00
725 kB/s | 15 kB   00:00
677 kB/s | 15 kB   00:00
10 MB/s | 2.6 MB   00:00
23 MB/s | 7.1 MB   00:00

Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction
  Preparing:          1/1
    Installing : git-core-2.40.1-1.amzn2023.0.3.x86_64
  Installing : git-core-doc-2.40.1-1.amzn2023.0.3.noarch
  Installing : perl-Error-0.65-477.amzn2023.0.6.x86_64
  Installing : perl-TermReadkey-2.38-9.amzn2023.0.2.x86_64
  Installing : perl-File-Find-1.37-477.amzn2023.0.6.noarch
  Installing : perl-Error-1.0.17029-5.amzn2023.0.2.noarch
  Installing : perl-Git-2.40.1-1.amzn2023.0.3.noarch
  Installing : git-2.40.1-1.amzn2023.0.3.x86_64
  Running scriptlets: git-2.40.1-1.amzn2023.0.3.x86_64
  Verifying  : git-2.40.1-1.amzn2023.0.3.x86_64
  Verifying  : git-core-2.40.1-1.amzn2023.0.3.x86_64
  Verifying  : git-core-doc-2.40.1-1.amzn2023.0.3.noarch
  Verifying  : perl-Error-1.0.17029-5.amzn2023.0.2.noarch
  Verifying  : perl-File-Find-1.37-477.amzn2023.0.6.noarch
  Verifying  : perl-Git-2.40.1-1.amzn2023.0.3.noarch
  Verifying  : perl-TermReadkey-2.38-9.amzn2023.0.2.x86_64
  Verifying  : perl-Error-0.65-477.amzn2023.0.6.x86_64
Completed!
[root@ip-172-31-35-128 pinku]# git init pinku
fatal: 'init' is not a git command.  See 'git --help'.
[root@ip-172-31-35-128 pinku]# git init pinku
hint: Using 'master' as the name for the initial branch. This default branch name
hint: is subject to change. To configure the initial branch name to use in all
hint: of your new repositories, which will suppress this warning, call:
hint:     git config --global init.defaultBranch <name>
hint: Names commonly chosen instead of 'master' are 'main', 'trunk' and
hint: 'development'. The just-created branch can be renamed via this command:
hint:     git branch -m <name>
Initialized empty Git repository in /root/pinku/pinku/.git/
[root@ip-172-31-35-128 pinku]#
```

Activate Windows
Go to Settings to activate Windows.

30°C Haze

ENG IN 16:25 31/10/2024

Create one empty file using touch command **touch <filename>** run **git status** and see we will see that file as a untracked file. Now we need to stage the file for that we need to **git add <filename>** running this command the file will be moved to the staging area and start tracking. Again check the **git status** now the file will be appear in green including it's staged and ready to be committed. Now commit the changes using **git commit -m "message"** to save the changes to local repo and run **git status** it will show working tree is clean. Check **git log** to check the commits have been done or not.

```

Initialized empty Git repository in /root/pinku/pinku/.git/
[root@ip-172-31-35-128 pinku]# git status
fatal: not a git repository (or any of the parent directories): .git
[root@ip-172-31-35-128 pinku]# git init pinku
Reinitialized existing Git repository in /root/pinku/pinku/.git/
[root@ip-172-31-35-128 pinku]# git status
fatal: not a git repository (or any of the parent directories): .git
[root@ip-172-31-35-128 pinku]# .git
fatal: git command not found
[root@ip-172-31-35-128 pinku]# touch file1 file2
[root@ip-172-31-35-128 pinku]# ls -l
total 0
-rw-r--r-- 1 root root 0 Oct 31 10:57 file1
-rw-r--r-- 1 root root 0 Oct 31 10:57 file2
drwxr-xr-x 3 root root 18 Oct 31 10:55 pinku
[root@ip-172-31-35-128 pinku]# git status
fatal: not a git repository (or any of the parent directories): .git
[root@ip-172-31-35-128 pinku]# Ac
[root@ip-172-31-35-128 pinku]# pwd
/root/pinku
[root@ip-172-31-35-128 pinku]# git init
hint: Using 'master' as the name for the initial branch. This default branch name
hint: is subject to change, to configure the initial branch to go in all
hint: branches of your new repositories, which will suppress this warning, call:
hint: 
hint:   git config --global init.defaultBranch <name>
hint: 
hint: Names commonly chosen instead of 'master' are 'main', 'trunk' and
hint: 'development'. The just-created branch can be renamed via this command:
hint: 
hint:   git branch -m <name>
Initialized empty Git repository in /root/pinku/.git/
[root@ip-172-31-35-128 pinku]# git push
error: could not find your current branch, see 'git --help'.
[root@ip-172-31-35-128 pinku]# git init pinku
Reinitialized existing Git repository in /root/pinku/pinku/.git/
[root@ip-172-31-35-128 pinku]# ls -a
. .. .git file1 file2 pinku
[root@ip-172-31-35-128 pinku]# git status
On branch master
No commits yet
Untracked files:
  (use "git add <file>..." to include in what will be committed)
    file1

```

LAB-3 CREATING REPO IN REMOTE LOCATION- GITHUB

Open GitHub account we can able to see the below page after opening GitHub in the upper left corner we have a new click on that and create new repository.

The screenshot shows the GitHub Home page. At the top, there's a search bar and a 'Type [] to search' placeholder. Below the search bar, there's a 'Send feedback' button and a 'Filter' icon. On the left, there's a sidebar titled 'Top repositories' with a 'New' button and a 'Find a repository...' search input. The main area has several sections: 'Start a new repository for Spandana115', 'Introduce yourself with a profile README', 'Latest changes' (listing recent activity), 'Explore repositories' (listing repositories like 'cgeo / cgeo', 'Rdatatable / data.table', and 'inertiajs / inertia'), and 'Use tools of the trade' (sections for GitHub Desktop and AI-based coding suggestions). The 'Create a new repository' form is prominently displayed in the center, asking for a 'Repository name' (with a placeholder 'name your new repository...') and a choice between 'Public' and 'Private'. A 'Create' button is at the bottom of the form.

Setup our new repository enter a name for repository in the repository field name choose wheather the repository should be public or private I have choosen private repository. Initialize it with README.md this file is a place to describe our project and easy to get started and initializing.

Create a new repository

A repository contains all project files, including the revision history. Already have a project repository elsewhere? [Import a repository.](#)

Required fields are marked with an asterisk (*).

Owner * **Repository name ***

Spandana115 / my_project_repo
my_project_repo is available.

Great repository names are short and memorable. Need inspiration? How about [glowing-chainsaw](#)?

Description (optional)

Public Anyone on the internet can see this repository. You choose who can commit.
Private You choose who can see and commit to this repository.

Initialize this repository with:

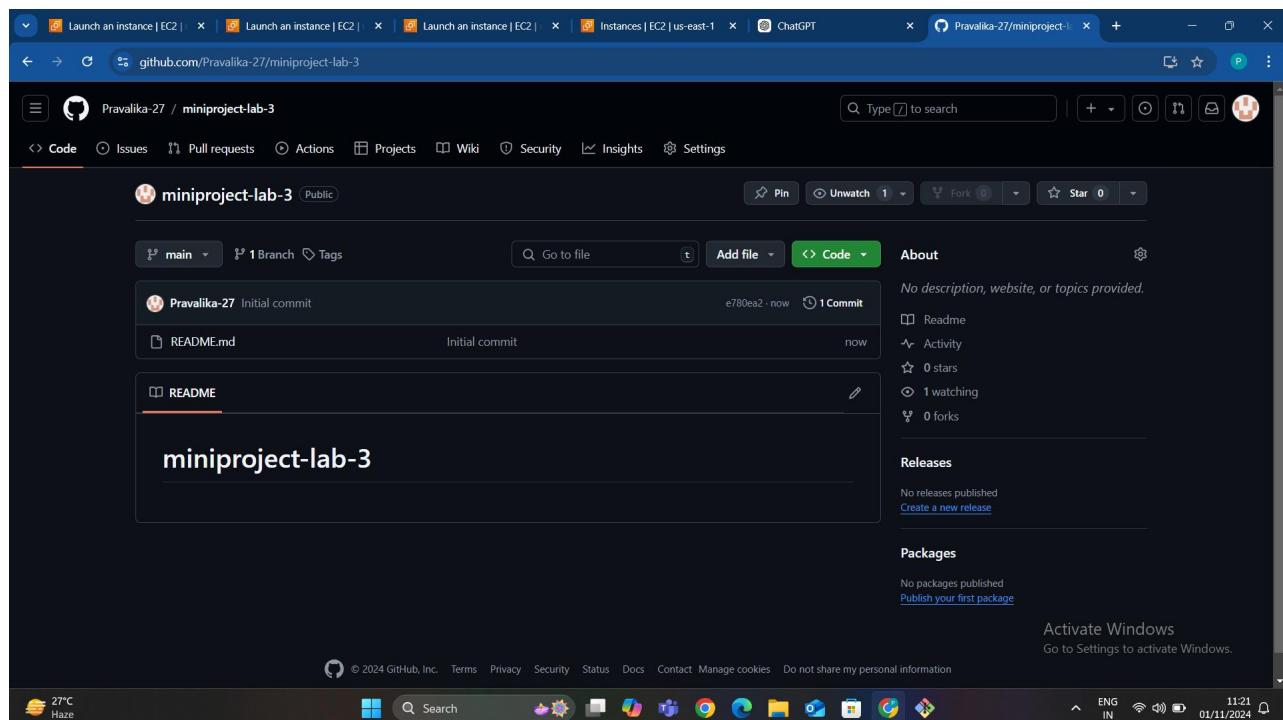
Add a README file
This is where you can write a long description for your project. [Learn more about READMEs.](#)

Add .gitignore
.gitignore template: None

Choose which files not to track from a list of templates. [Learn more about ignoring files.](#)

Choose a license
Unlicense

At the last we have Create repository button so click on that button then new repository has been created it will directly taken to the repository main page.



LAB-4 WORKING WITH REMOTE REPOSITORY

Go to repository page on GitHub and click on code button and copy the repository url use HTTPS. Open the

terminal of our local machine run the command **git clone <repo url>** it will ask for username and password in the place of password it will throw an error.so we need to create personal access token for that.

```

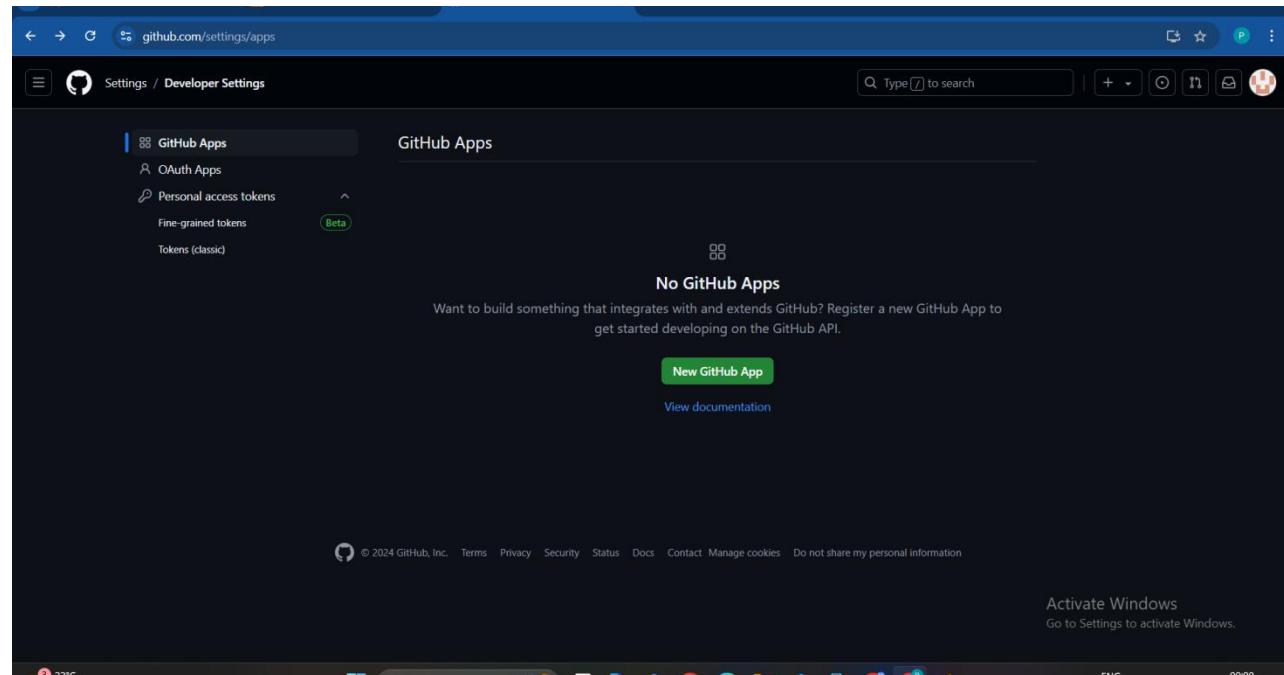
root@ip-172-31-24-229:~/pinku
your configuration file:
git config --global --edit
After doing this, you may fix the identity used for this commit with:
git commit --amend --reset-author
2 files changed, 0 insertions(+), 0 deletions(-)
create mode 100644 file1
create mode 100644 file2
[root@ip-172-31-24-229 pinku]# git status
On branch master
nothing to commit, working tree clean
[root@ip-172-31-24-229 pinku]# Read from remote host 3.92.20.15: Connection reset by peer
Connection to 3.92.20.15 closed.
client_loop: send disconnect: Connection reset by peer
ASUSWIKING MINGW64 ~/Desktop/aws
$ ssh -i pinku.pem ec2-user@3.92.20.15
The authenticity of host '3.92.20.15 (3.92.20.15)' can't be established.
ED25519 key fingerprint is SHA256:9MvnvN1gKNLYUGsJyGt3jpAOKxxrJdZY7bdkg.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Could not create directory '/c/Users/ASUS7/.ssh'. (No such file or directory).
Failed to add the host to the list of known hosts (/c/Users/ASUS7/.ssh/known_hosts).
Last logon: Fri Nov  1 05:46:51 2024 from 49.206.54.95
# 
```
 ~\#### Amazon Linux 2
 ~~ \#### AL2 End of Life is 2025-06-30.
 ~~ \### A newer version of Amazon Linux is available!
 ~~ \### Amazon Linux 2023, GA and supported until 2028-03-15.
 ~~ \### https://aws.amazon.com/linux/amazon-linux-2023/
```
9 package(s) needed for security, out of 12 available
Run "sudo yum update" to apply all updates.
[ec2-user@ip-172-31-24-229 ~]$ sudo su -
last login: Fri Nov  1 05:46:51 UTC 2024 on pts/0
[root@ip-172-31-24-229 ~]# cd pinku
[root@ip-172-31-24-229 ~]# cd pinku
[root@ip-172-31-24-229 pinku]# git https://github.com/Pravalika-27/miniproject-lab-3.git
git: 'https://github.com/Pravalika-27/miniproject-lab-3.git' is not a git command. See 'git --help'.
[root@ip-172-31-24-229 pinku]# ls -a
[root@ip-172-31-24-229 pinku]# ll
total 0
[root@ip-172-31-24-229 pinku]# git clone https://github.com/Pravalika-27/miniproject-lab-3.git
Cloning into 'miniproject-lab-3'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
Receiving objects: 100% (3/3), done.
[root@ip-172-31-24-229 pinku]# 

```

Activate Windows
Go to Settings to activate Windows.

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To create personal access token first we need to click on profile and go to settings in that it we have to select Developer settings after that click on personal access token (classic) as shown below image.



Click on generate new token provide a Note to label token we have to provide expiration date scope select repo check box for full access and then click on generate token.

Now the token has been created successfully copy that token immediately and paste it in one place because we won't be able to view it again later.

New personal access token (classic)

Personal access tokens (classic) function like ordinary OAuth access tokens. They can be used instead of a password for Git over HTTPS, or can be used to [authenticate to the API over Basic Authentication](#).

Note

token

What's this token for?

Expiration *

30 days The token will expire on Sat, Dec 7 2024

Select scopes

Scopes define the access for personal tokens. [Read more about OAuth scopes](#).

<input checked="" type="checkbox"/> repo	Full control of private repositories
<input type="checkbox"/> <code>repository</code>	Access commit status
<input type="checkbox"/> <code>repo_deployment</code>	Access deployment status
<input type="checkbox"/> <code>public_repo</code>	Access public repositories
<input type="checkbox"/> <code>repo_invite</code>	Access repository invitations
<input type="checkbox"/> <code>security_events</code>	Read and write security events
<input type="checkbox"/> workflow	Update GitHub Action workflows
<input type="checkbox"/> write:packages	Upload packages to GitHub Package Registry
<input type="checkbox"/> <code>read:packages</code>	Download packages from GitHub Package Registry
<input type="checkbox"/> delete:packages	Delete packages from GitHub Package Registry

Activate Windows
Go to Settings to activate Windows.

Now we again we need to clone it asks for username and password at the userame we have to provide our GitHub account username and at the place of password we have to provide a token that we are generated previously.

```

root@ip-172-31-32-87:~/pinku/pinku#
hint: git config --global init.defaultBranch <name>
hint: Names commonly chosen instead of 'master' are 'main', 'trunk' and
hint: 'development'. The just-created branch can be renamed via this command:
hint: git branch -m <name>
Initialized empty Git repository in /root/pinku/pinku/.git/
[root@ip-172-31-32-87 pinku]# git status
fatal: No names were specified for committing to the parent directories): .git
[root@ip-172-31-32-87 pinku]# cd pinku
[root@ip-172-31-32-87 pinku]# git status
On branch master
No commits yet

nothing to commit (create/copy files and use "git add" to track)
[root@ip-172-31-32-87 pinku]# touch aws1 aws2
[root@ip-172-31-32-87 pinku]# git status
On branch master
No commits yet

Untracked files:
  (use "git add <file>..." to include in what will be committed)
    aws1
    aws2

nothing added to commit but untracked files present (use "git add" to track)
[root@ip-172-31-32-87 pinku]# git add aws1 aws2
[root@ip-172-31-32-87 pinku]# git status
On branch master
No commits yet

Changes to be committed:
  (use "git rm --cached <file>..." to unstaged)
    new file: aws1
    new file: aws2

[root@ip-172-31-32-87 pinku]# git commit -m "committing the files"
[master (root-commit) 72b0ba3] committing the files
Committer: root <root@ip-172-31-32-87.ec2.internal>
Your name and email address were configured automatically based
on your permanent hostname. Please check that they're correct.
You can suppress this message by setting them explicitly. Run the
following command and follow the instructions in your editor to edit
your configuration file:
  git config --global --edit

After doing this, you may fix the identity used for this commit with:
  git commit --amend --reset-author
2 files changed, 0 insertions(+), 0 deletions(-)
create mode 100644 aws1
create mode 100644 aws2
[root@ip-172-31-32-87 pinku]#

```

Activate Windows
Go to Settings to activate Windows.

Go to new cloned repository folder use **touch** command and create some empty files. Add the new files to the staging area using **git add <file names>** after staging commit the changes using **git commit -m "message"**

The screenshot shows a terminal window with the following session:

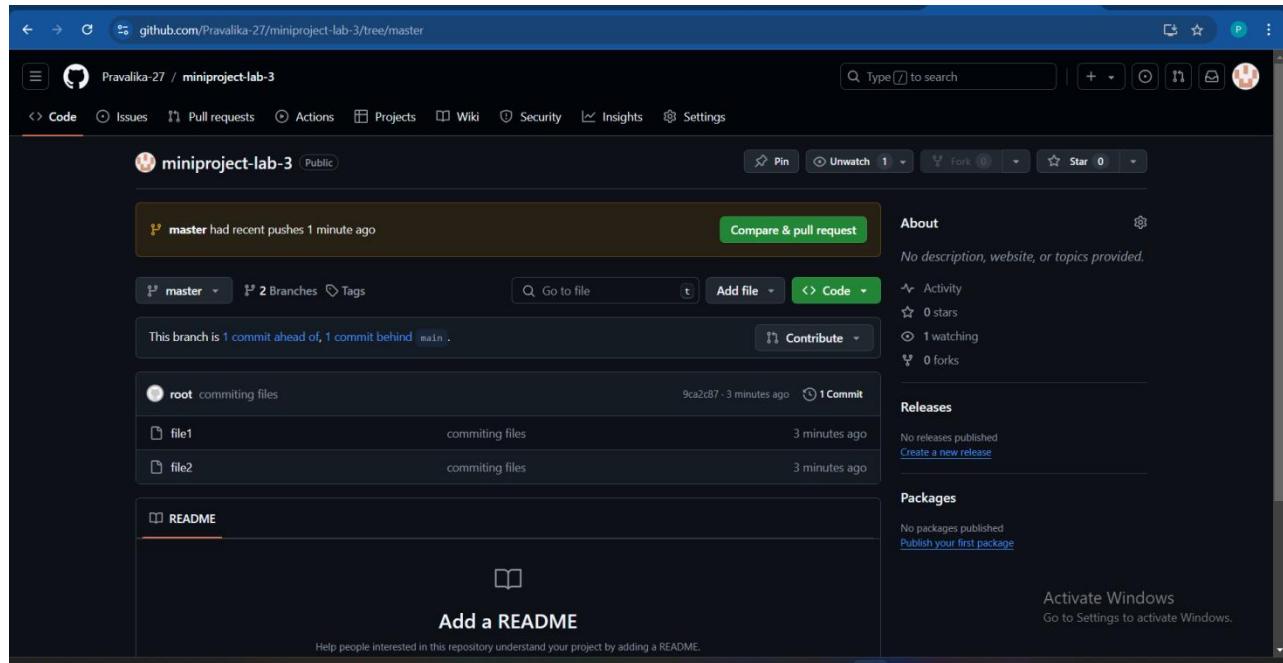
```
root@ip-172-31-32-87:~/pinku/pinku
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
amzn2-core           | 3.6 kB   00:00
package git-2.40.1-1.amzn2.0.3.x86_64 already installed and latest version
root@ip-172-31-32-87:~# 11
total 0
drwxr-xr-x 3 root root 19 Nov  2 04:48 pinku
[root@ip-172-31-32-87 pinku]# git init
[root@ip-172-31-32-87 pinku]# git init
hint: Using 'master' as the name for the initial branch. This default branch nam
e
hint: is subject to change. To configure the initial branch name to use in all
hint: of your new repositories, which will suppress this warning, call:
hint:     git config --global init.defaultBranch <name>
hint:
hint: Names commonly chosen instead of 'master' are 'main', 'trunk' and
hint: 'development'. The just-created branch can be renamed via this command:
hint:     git branch -m <name>
Initialized empty Git repository in /root/pinku/.git/
[root@ip-172-31-32-87 pinku]# git remote add origin https://github.com/Pravalika
-27/git-lab-3.git
[root@ip-172-31-32-87 pinku]# 11
total 0
drwxr-xr-x 3 root root 42 Nov  2 04:49 pinku
[root@ip-172-31-32-87 pinku]# cd pinku
[root@ip-172-31-32-87 pinku]# 11
total 0
-rw-r--r-- 1 root root 0 Nov  2 04:49 aws1
-rw-r--r-- 1 root root 0 Nov  2 04:49 aws2
[root@ip-172-31-32-87 pinku]# git push -u origin --all
fatal: 'origin' does not appear to be a git repository
fatal: Could not read from remote repository.

Please make sure you have the correct access rights
and the repository exists.
[root@ip-172-31-32-87 pinku]# cd .
[root@ip-172-31-32-87 pinku]# git remote add origin https://github.com/Pravalika
-27/git-lab-3.git
[root@ip-172-31-32-87 pinku]# git push -u origin --all
Username for 'https://github.com': Pravalika-27
Password for 'https://Pravalika-27@github.com':
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 228 bytes | 220.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
remote:
remote: Create a pull request for 'master' on GitHub by visiting:
remote:   https://github.com/Pravalika-27/git-lab-3/pull/new/master
remote:
To https://github.com/Pravalika-27/git-lab-3.git
 * [new branch]    master -> master
branch 'master' set up to track 'origin/master'.
[root@ip-172-31-32-87 pinku]# ]
```

The terminal shows the user navigating through a directory, initializing a git repository, adding a remote origin, and attempting to push changes. It also shows the creation of two files named 'aws1' and 'aws2'. Finally, it pushes the changes to the 'origin' remote, which fails because 'origin' is not a valid git repository. The user then adds 'origin' as a remote again and successfully pushes the changes.

After committing changes we need to push changes to the Remote Repository using **git push** while pushing it asks for username and password so provide username and token in the place of password and push.The new files should be uploaded in remote GitHub repository.

Go to GitHub account and open our newly created repository and check the repository the new files have been pushed to remote server we will find a new changes.



LAB-5 PUSHING A LOCALLY CREATED REPO TO GITHUB

Create a repository in local machine and go to GitHub click on new repository name the repository the same as your local repository we do not initialize this repo with a README.is selected click on create repo.

```

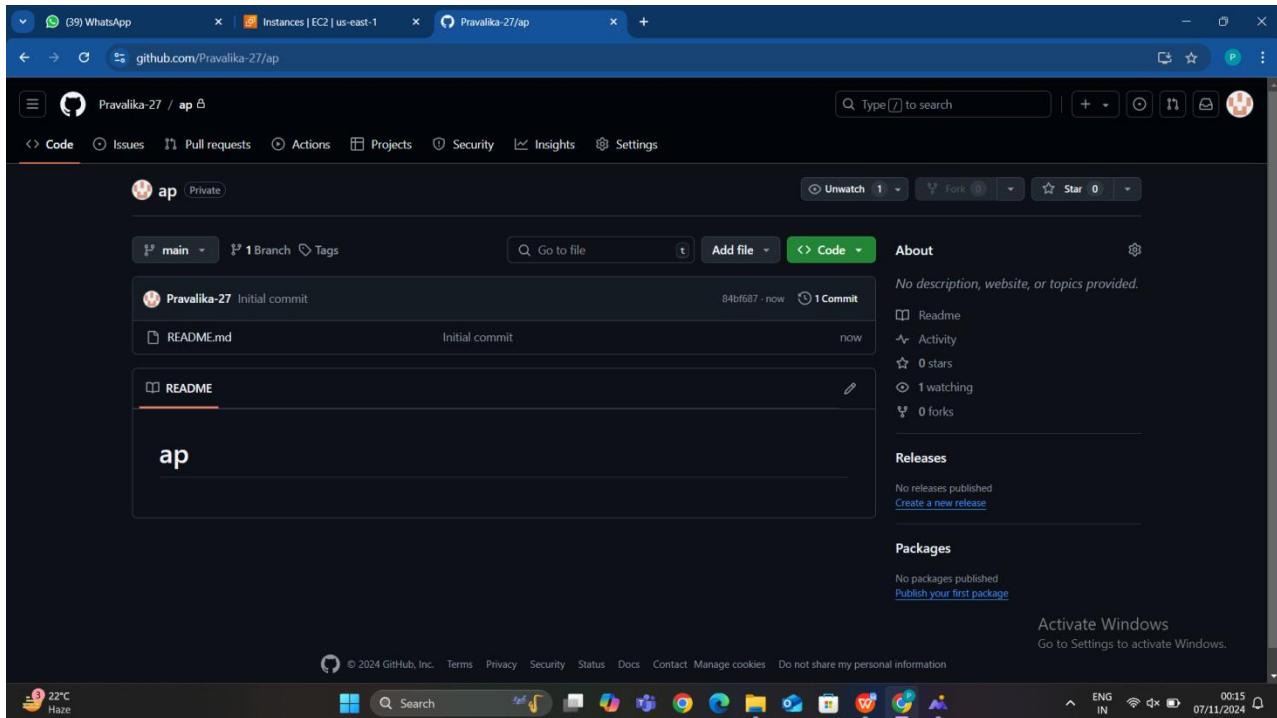
root@ip-172-31-24-229:~/amnu
Untracked files:
  (use "git add <file>..." to include in what will be committed)
    file1
    file2
nothing added to commit but untracked files present (use "git add" to track)
[root@ip-172-31-24-229 amnu]# git add file1 file2
[root@ip-172-31-24-229 amnu]# git status
On branch master
No commits yet

Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
    new file:   file1
    new file:   file2

[root@ip-172-31-24-229 amnu]# git commit -m "committing files"
[master (root-commit) 9ca2c87] committing files
  Committed from https://github.com/Pravalika-27/miniproject-lab-3.git
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly. Run the
following command and follow the instructions in your editor to edit
your configuration file:
  git config --global --edit
After doing this, you may fix the identity used for this commit with:
  git commit --amend --reset-author
  2 files changed, 0 insertions(+), 0 deletions(-)
  create mode 100644 file1
  create mode 100644 file2
[root@ip-172-31-24-229 amnu]# git status
On branch master
nothing to commit, working tree clean
[root@ip-172-31-24-229 amnu]# git push -u origin https://github.com/Pravalika-27/miniproject-lab-3.git
remote: Create a pull request for 'master' on GitHub by visiting:
remote:   https://github.com/Pravalika-27/miniproject-lab-3/pull/new/master
remote:
To https://github.com/Pravalika-27/miniproject-lab-3.git
 * [new branch]      master -> master
branch 'master' set up to track 'origin/master'.
[root@ip-172-31-24-229 amnu]#

```

Activate Windows
Go to Settings to activate Windows.



Rename the Default Branch to main **git branch -M main** and use the repository url get from GitHub creating remote repository run the following command to add the GitHub repository as the remote **git remote add origin <remote-repo-url>** we will get an error because we did not committed any files so after adding and committing any file it will be pushed.

```
root@ip-172-31-29-63:~/my_repo
commit 34d63c25c3530f24998065489cdf900124df061 (origin/main, origin/HEAD)
Author: Spandanall15 <bainlaspandanall15@gmail.com>
Date: Mon Nov 4 14:59:03 2024 +0530

    Initial commit
[root@ip-172-31-29-63 my_project_repo]# git push
Username for 'https://github.com': spandanall15
Password for 'https://spandanall15@github.com':
remote: Invalid username or password.
fatal: Authentication failed for 'https://github.com/Spandanall15/my_project_repo.git'
[root@ip-172-31-29-63 my_project_repo]# git push
Username for 'https://github.com': Spandanall15
Password for 'https://Spandanall15@github.com':
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3) 296 bytes | 296.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/Spandanall15/my_project_repo.git
  34d63c... main -> main
[root@ip-172-31-29-63 my_project_repo]# cd
[root@ip-172-31-29-63 ~]# mkdir my_repo
[root@ip-172-31-29-63 ~]# cd my_repo/
[root@ip-172-31-29-63 my_repo]# ll
total 0
[root@ip-172-31-29-63 my_repo]# git init
hint: Using 'master' as the name for the initial branch. This default branch name
hint: is subject to change. To configure the initial branch name to use in all
hint: of your new repositories, which will suppress this warning, call:
hint:
hint:   git config --global init.defaultBranch <name>
hint:
hint: Names commonly chosen instead of 'master' are 'main', 'trunk' and
hint: 'development'. The just-created branch can be renamed via this command:
hint:
hint:   git branch -m <name>
Initialized empty Git repository in /root/my_repo/.git/
[root@ip-172-31-29-63 my_repo]# git branch -M main
[root@ip-172-31-29-63 my_repo]# git remote add origin https://github.com/Spandanall15/my_repo.git
[root@ip-172-31-29-63 my_repo]# git push -u origin main
error: src refspec main does not match any
error: failed to push some refs to 'https://github.com/Spandanall15/my_repo.git'
[root@ip-172-31-29-63 my_repo]# git push -u origin main
error: src refspec main does not match any
error: failed to push some refs to 'https://github.com/Spandanall15/my_repo.git'
[root@ip-172-31-29-63 my_repo]# git push
fatal: The current branch main has no upstream branch.
To push the current branch and set the remote as upstream, use

  git push --set-upstream origin main
```

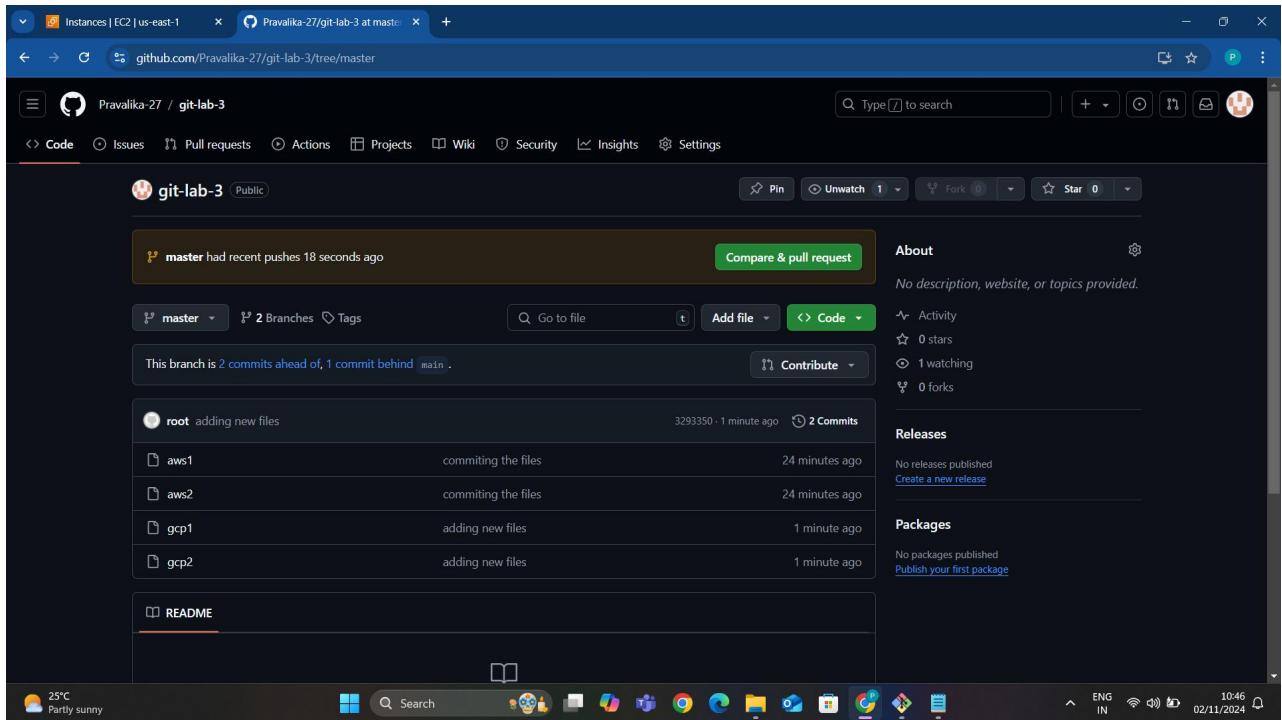
Push your local branch(main) to GitHub git push -u origin main -u flag sets the upstream branch linking your local branch to the remote.

```
root@ip-172-31-32-87:~/pravalika/pravalika
git pull <remote> <branch>
If you wish to set tracking information for this branch you can do so with:
  git branch --set-upstream-to=<origin/><branch> main
[root@ip-172-31-32-87 pravalika]# git pull origin master
From https://github.com/Pravalika-27/pravalika
 * branch    master      -> FETCH_HEAD
fatal: Not possible to fast-forward, aborting.
[root@ip-172-31-32-87 pravalika]# cd pravalika
[root@ip-172-31-32-87 pravalika]# git branch
* main
  master
  new-feature
[root@ip-172-31-32-87 pravalika]# git pull origin master
From https://github.com/Pravalika-27/pravalika
 * branch    master      -> FETCH_HEAD
fatal: Not possible to fast-forward, aborting.
[root@ip-172-31-32-87 pravalika]# git checkout main
Already up-to-date.
[root@ip-172-31-32-87 pravalika]#
[root@ip-172-31-32-87 pravalika]# git fetch origin
[root@ip-172-31-32-87 pravalika]# git merge origin/master
fatal: refusing to merge unrelated histories.
[root@ip-172-31-32-87 pravalika]# git add . <files-with-conflicts>
-bash: syntax error near unexpected token `newline'
[root@ip-172-31-32-87 pravalika]# git add jesus
fatal: pathspec 'jesus' did not match any files
[root@ip-172-31-32-87 pravalika]# git add jesus1
fatal: pathspec 'jesus1' did not match any files
[root@ip-172-31-32-87 pravalika]# git add shiloh1
fatal: pathspec 'shiloh1' did not match any files
[root@ip-172-31-32-87 pravalika]# sleep 300
[root@ip-172-31-32-87 pravalika]# sleep 300
[1]+  Stopped                  sleep 300
[root@ip-172-31-32-87 pravalika]# git branch
* main
  master
  new-feature
[root@ip-172-31-32-87 pravalika]# git checkout master
Switched to branch "master"
Your branch is up to date with "origin/master".
[root@ip-172-31-32-87 pravalika]# git pull origin main
From https://github.com/Pravalika-27/pravalika
 * branch    main      -> FETCH_HEAD
Updating c69ad76..77d364b
Fast-forward
[root@ip-172-31-32-87 pravalika]# |
```

The terminal shows the creation of a new branch 'main' from the existing 'master' branch. It then attempts to pull from GitHub, which fails due to a fast-forward merge. The user then merges 'origin/master' into the local 'main' branch. After a sleep command, the user switches back to the 'master' branch and performs another pull operation, successfully updating to the latest changes from GitHub.

Open GitHub repository click on main branch in the dropdown type the name of new branch select the option and create new branch form main branch.

In the below image we can able to see that master branch has been created successfully.



Switch to new branch and go to the any file edit that file or write a content in that file with in new repository make changes and click on commit changes.

Switch back to main branch and using branch dropdown check the file that has been updated or modified we can see that remains unchanged in file1 in main branch in the below image. Go back to the previous image and see that stores some content in the file1.

LAB -7 PULL ALL THE BRANCHES IN YOUR LOCAL MACHINES

Open PuTTY we have to go to where git repository located we have to run the following commands to fetch the branches from remote repository **git pull** list all branches using **git branch -a**.

```

root@ip-172-31-32-87:/pinku
adding new files

commit 6384b2b2465c3dc5abc15f1f0b3567ea1e36d61
Author: root <root@ip-172-31-32-87.ec2.internal>
Date: Sat Nov 2 05:23:39 2024 +0000

    adding google file

commit 38f34614849425dbbf81841e7321e2a5afea7cd6 (origin/main)
Author: Pravalika-27 <112800726+Pravalika-27@users.noreply.github.com>
Date: Sat Nov 2 10:49:34 2024 +0530

    Initial commit

[root@ip-172-31-32-87 pravalika]# git branch -r
  origin/main
  origin/master
  origin/feature
[root@ip-172-31-32-87 pravalika]# cd
[root@ip-172-31-32-87 ~]# ll
total 0
drwxr-xr-x 4 root root 78 Nov 2 06:37 ammu
drwxr-xr-x 4 root root 31 Nov 2 05:08 pinku
drwxr-xr-x 3 root root 23 Nov 2 05:17 pravalika
[root@ip-172-31-32-87 ~]# git branch
fatal: not a git repository (or any of the parent directories): .git
[root@ip-172-31-32-87 ~]# ll
total 0
drwxr-xr-x 4 root root 78 Nov 2 06:37 ammu
drwxr-xr-x 4 root root 31 Nov 2 05:08 pinku
drwxr-xr-x 3 root root 23 Nov 2 05:17 pravalika
[root@ip-172-31-32-87 ~]# git branch
fatal: not a git repository (or any of the parent directories): .git
[root@ip-172-31-32-87 ~]# ll
total 0
drwxr-xr-x 4 root root 83 Nov 2 05:14 pinku
[root@ip-172-31-32-87 pinku]# git branch
fatal: pathspec 'branch' did not match any file(s) known to git
fatal: pathspec 'origin --all' did not match any file(s) known to git
[root@ip-172-31-32-87 pinku]# git pull origin main
remote: Enumerating objects: 3, done.
remote: Counting objects: 1000 (3/3), done.
remote: Total 1000 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
Unpacking objects: 1000 (delta 0), 864 bytes | 864.00 kB/s, done.
From https://github.com/Pravalika-27/git-lab-3
 * [new branch]      main          -> origin/main
[root@ip-172-31-32-87 pinku]# git branch -a
* master
  remotes/origin/main
[root@ip-172-31-32-87 pinku]# git checkout feature branch
error: pathspec 'feature' did not match any file(s) known to git
error: pathspec 'branch' did not match any file(s) known to git
[root@ip-172-31-32-87 pinku]# git checkout master
Already on 'master'
[root@ip-172-31-32-87 pinku]# git branch
* master
[root@ip-172-31-32-87 pinku]#

```

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Switch to newly created branch using git checkout <master> confirm that we are on a new branch by using git branch the active branch is marked with *

```

root@ip-172-31-32-87~/pravalika/pravalika
hint: invocation.
fatal: Need to specify how to reconcile divergent branches.
[root@ip-172-31-32-87 pinku]# git push -u origin master
Username for 'https://github.com': Pravalika-27
Password for 'https://Pravalika-27@github.com':
To https://github.com/Pravalika-27/git-lab-3.git
 ! [rejected]      master -> master (non-fast-forward)
error: failed to push some refs to 'https://github.com/Pravalika-27/git-lab-3.git'
hint: Updates were rejected because the tip of your current branch is behind
hint: its remote counterpart. Integrate the remote changes (e.g.
hint: git pull ...) before pushing again.
hint: See the 'Note about Fast-Forwards' in 'git push --help' for details.
[root@ip-172-31-32-87 pinku]# cd
[root@ip-172-31-32-87 ~]# ll
total 0
drwxr-xr-x 4 root root 78 Nov 2 06:37 ammu
drwxr-xr-x 3 root root 23 Nov 2 05:17 pravalika
[root@ip-172-31-32-87 ~]# cd pravalika
fatal: not a git repository (or any of the parent directories): .git
[root@ip-172-31-32-87 pravalika]# cd pravalika
[root@ip-172-31-32-87 pravalika]# git branch
* master
  new-feature
[root@ip-172-31-32-87 pravalika]# touch shiloh1
[root@ip-172-31-32-87 pravalika]# git add shiloh1
[root@ip-172-31-32-87 pravalika]# git commit -m "adding new file"
[master 301299d] adding new file
 1 file changed, 0 insertions(+), 0 deletions(-)
create mode 100644 shiloh1
[root@ip-172-31-32-87 pravalika]# git push -u origin master
Username for 'https://github.com': Pravalika-27
Password for 'https://Pravalika-27@github.com':
Enumerating objects: 3, done.
Counting objects: 1000 (3/3), done.
Compressing objects: 100% (2/2), done.
Writing objects: 100% (2/2), 245 bytes | 245.00 kB/s, done.
Total 2 (delta 1), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To https://github.com/Pravalika-27/pravalika.git
 ! [rejected]      master -> master (branch 'master' set up to track 'origin/master')
[root@ip-172-31-32-87 pravalika]#

```

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Add some files to the branch you can create empty files with the touch command **touch file3.txt file4.txt** and stage the new files by **git add <file names>** and commit changes using **git commit -m “message”** after committing check logs if

everythhing correct push the committed changes to remote feature branch.

```
root@ip-172-31-32-87:~/pinku
Author: root <root@ip-172-31-32-87.ec2.internal>
Date: Sat Nov 2 06:03:14 2024 +0000

    modifying jesus1

commit a25f57bcd43f0afcc1a8e7c509a330bf3c6
Author: <root@ip-172-31-32-87.ec2.internal>
Date: Sat Nov 2 05:39:10 2024 +0000

    adding new files

commit e3804b2b465c3d5c5b1c15ff0b3567ea1e36d61
Author: root <root@ip-172-31-32-87.ec2.internal>
Date: Sat Nov 2 05:23:39 2024 +0000

    adding google file

commit 38f3461a84042588fb1841e7321e2a5afea7c46 (origin/main)
Author: Pravalika-27 <112800726@users.noreply.github.com>
Date: Sat Nov 2 10:49:34 2024 +0530

    Initial commit
[root@ip-172-31-32-87 pinku]# git branch -r
origin/main
origin/master
origin/new-feature
[root@ip-172-31-32-87 pinku]# cd
[root@ip-172-31-32-87 ~]# ll
total 0
drwxr-xr-x 4 root root 78 Nov 2 06:37 ammu
drwxr-xr-x 4 root root 31 Nov 2 05:08 pinku
drwxr-xr-x 3 root root 23 Nov 2 05:17 pravalika
[root@ip-172-31-32-87 ~]# git branch
fatal: not a git repository (or any of the parent directories): .git
[root@ip-172-31-32-87 ~]# ll
total 0
drwxr-xr-x 4 root root 78 Nov 2 06:37 ammu
drwxr-xr-x 4 root root 31 Nov 2 05:08 pinku
drwxr-xr-x 3 root root 23 Nov 2 05:17 pravalika
[root@ip-172-31-32-87 ~]# cd pinku
[root@ip-172-31-32-87 pinku]# ll
total 0
drwxr-xr-x 4 root root 83 Nov 2 05:14 pinku
[root@ip-172-31-32-87 pinku]# git branch
[root@ip-172-31-32-87 pinku]# git pull origin --all
fatal: fetch --all does not take a repository argument
[root@ip-172-31-32-87 pinku]# git pull origin main
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
Unpacking objects: 100% (3/3), 864 bytes | 864.00 KiB/s, done.
From https://github.com/Pravalika-27/git-lab-3
 * [new branch]    main      -> origin/main
[root@ip-172-31-32-87 pinku]# git branch -a
* master
  remotes/origin/main
[root@ip-172-31-32-87 pinku]#
```

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Confirm no changes in main branch switch back to the main branch in GitHub and verify that the new files are not present in the main branch.

github.com/Pravalika-27/ap/tree/main

Pravalika-27 / ap

Code Issues Pull requests Actions Projects Security Insights Settings

main 2 Branches Tags

Pravalika-27 Initial commit 84bf687 · 7 minutes ago 1 Commit

README.md Initial commit 7 minutes ago

README

ap

About

No description, website, or topics provided.

Readme Activity 0 stars 0 watching 0 forks

Releases

No releases published Create a new release

Packages

No packages published Publish your first package

Activate Windows Go to Settings to activate Windows.

https://github.com/Pravalika-27/ap/tree/main#

22°C Haze

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Switch to master branch to verify that the new files are presented.

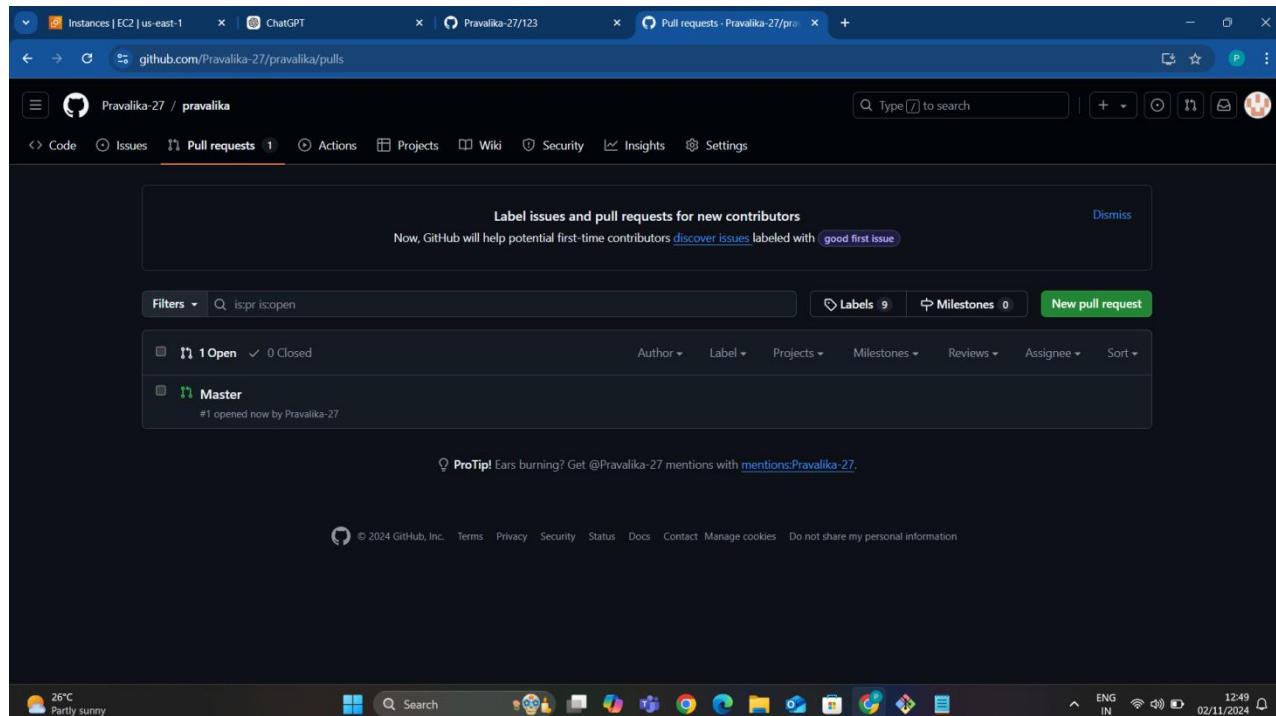
The screenshot shows a GitHub repository page for the user 'pravalika'. The repository name is 'Pravalika-27/pravalika'. The 'master' branch is selected. The commit history shows several commits from a user named 'new-feature' over the past 22 minutes. The commits include adding files like 'file2', 'google', 'jesus1', 'jesus2', 'pinku', and 'shiloh1', and modifying existing files. The repository has 3 branches and 0 forks. It includes sections for About, Releases, and Packages.

LAB-8 MERGE OUR FEATURE BRANCH WITH OUR MAIN BRANCH

Open your repository in GitHub where you have both the main and master branches. Click on the “Pull request” tab at the top of the repository page.

The screenshot shows a GitHub repository page for the user 'pravalika'. The repository name is 'Pravalika-27/pravalika'. The 'master' branch is selected. The commit history shows 6 commits ahead of the 'main' branch. The commits include adding files like 'file2', 'google', 'jesus1', 'jesus2', 'pinku', and 'shiloh1', and modifying existing files. The repository has 3 branches and 0 forks. It includes sections for About, Releases, and Packages.

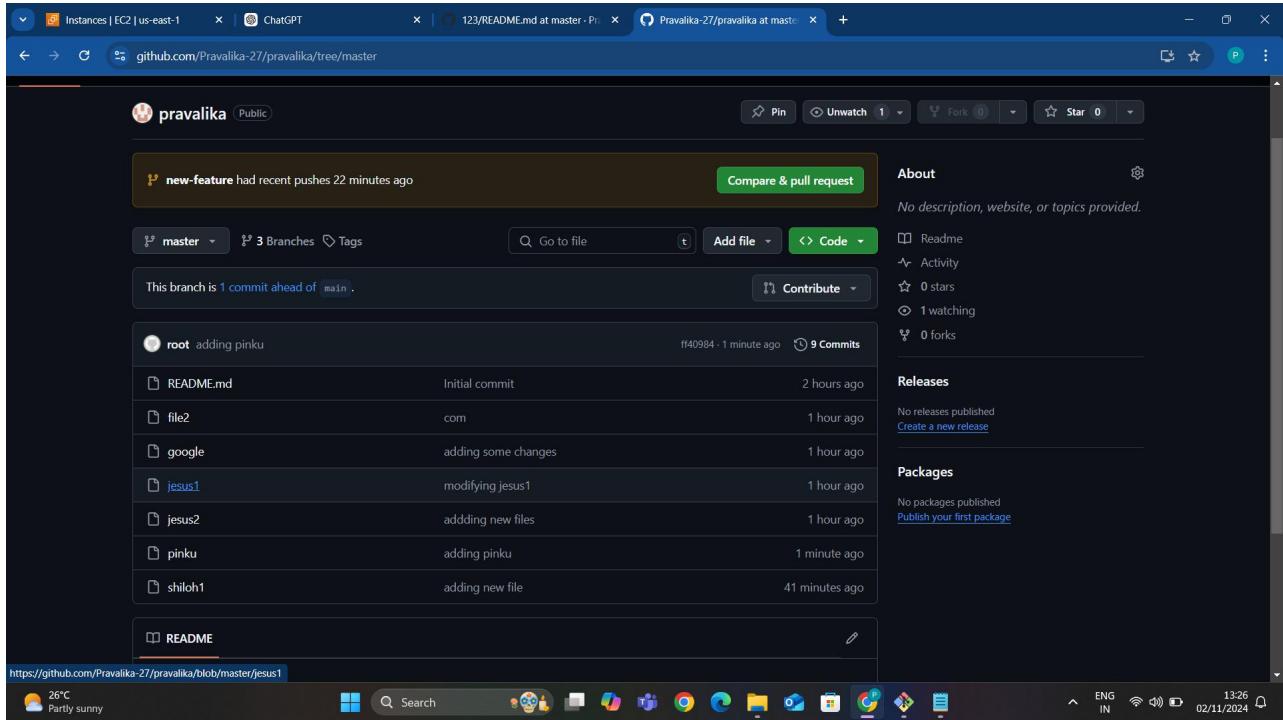
Click on the “New pull request” button to initiate a pull request.



Select branches for the Pull Request in the comparison options set base branch as main and set compare branch as a master click on create pull request and confirm.

In the pull request tab locate a newly created pull request. Click on the pull request to view details. Click on the “Merge pull request” button and confirm the merge by clicking on confirm merge.

We can able to see that the files are merged from master branch to main branch.



LAB-9 GO TO LOCAL MACHINE

Open PuTTY on local machine where you have a cloned version of remote repository. Checkout to the main branch using **git checkout main** this ensures we are working with the main branch before pulling any changes. To pull the latest changes from the remote repository using **git pull** this will fetch and merge any updates from the remote repository into local main branch. After the pull command is executed main branch will be up to date with the remote repository run the following command to check the status and confirm using **git status and git log**.

```

root@ip-172-31-32-87:~/pravalika/pravalika
77d364b (HEAD -> master, origin/main) Merge pull request #1 from Pravalika-27/master
c69ad76 (origin/master) adding new file
53012c9 com
6cd80b0 adding some changes
9316316 modifying jesus1
323e3f3 adding new file
6384b2b adding google file
38f3461 Initial commit
[root@ip-172-31-32-87 pravalika]# ll
total 16
-rw-r--r-- 1 root root 35 Nov 2 05:55 example.txt
-rw-r--r-- 1 root root 0 Nov 2 07:53 File2
-rw-r--r-- 1 root root 19 Nov 2 07:53 google
-rw-r--r-- 1 root root 42 Nov 2 07:53 jesus1
-rw-r--r-- 1 root root 0 Nov 2 07:53 jesus2
drwxr-xr-x 3 root root 12 Nov 2 07:53 pravalika
-rw-r--r-- 1 root root 11 Nov 2 07:53 README.md
-rw-r--r-- 1 root root 0 Nov 2 07:53 shiloh
[root@ip-172-31-32-87 pravalika]# touch pinku
[root@ip-172-31-32-87 pravalika]# git add pinku
error: pathspec 'adding pinku' did not match any file(s) known to git
[root@ip-172-31-32-87 pravalika]# git commit -m "adding pinku"
[master ff40984] adding pinku
Committer: root <root@ip-172-31-32-87.ec2.internal>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly. Run the
following command and follow the instructions in your editor to edit
your configuration file:
git config --global --edit
After doing this, you may fix the identity used for this commit with:
git commit --amend --reset-author
1 file changed, 0 insertions(+), 0 deletions(-)
create mode 100644 pinku
[root@ip-172-31-32-87 pravalika]# git push -u origin main
Username for 'https://github.com': Pravalika-27
Password for 'https://Pravalika-27@github.com':
Remote: Invalid username or password.
fatal: Authentication failed for 'https://github.com/Pravalika-27/pravalika.git/'
[root@ip-172-31-32-87 pravalika]# git push -u origin master
Username for 'https://github.com': Pravalika-27
Password for 'https://Pravalika-27@github.com':
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Compressing objects: 100% (2/2), done.
Written objects: 100% (2/2) 240 bytes | 240.00 KiB/s, done.
Total 2 (delta 1), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To https://github.com/Pravalika-27/pravalika.git
 * [new branch] master -> master
branch 'master' set up to track 'origin/master'.
[root@ip-172-31-32-87 pravalika]#

```

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```

root@ip-172-31-32-87:~/pravalika/pravalika
[root@ip-172-31-32-87 pravalika]# git log
commit 77d364b4680cc972d4bc6bcb4abd0efccf3ce1 (HEAD -> master, origin/main)
Merge: 38f3461 c69ad76
Author: Pravalika-27 <112800726+Pravalika-27@users.noreply.github.com>
Date: Sat Nov 2 07:55:06 2024 +0000

    Merge pull request #1 from Pravalika-27/master

    Master

commit c69ad76462c1675a04ec0bf4e87d182d67d144e
Author: root <root@ip-172-31-32-87.ec2.internal>
Date: Sat Nov 2 07:14:37 2024 +0000

    adding pinku

commit 53012c9ba3cf5c1438b64ef02096fa248abe7
Author: root <root@ip-172-31-32-87.ec2.internal>
Date: Sat Nov 2 06:53:53 2024 +0000

    com

commit 6cd80b05ecd2092cb3c0dc6fb8344383ecbb
Author: root <root@ip-172-31-32-87.ec2.internal>
Date: Sat Nov 2 06:05:09 2024 +0000

    adding some changes

commit 93163169862ef5a83c338378dfa6479be6c4088
Author: root <root@ip-172-31-32-87.ec2.internal>
Date: Sat Nov 2 06:03:14 2024 +0000

    modifying jesus1

commit 323e3f3afcc51a8ee73c992a330bf3ce
Author: root <root@ip-172-31-32-87.ec2.internal>
Date: Sat Nov 2 05:39:10 2024 +0000

    adding new files

commit 6384b2b2465cc3dc5ab15f1fb0356ea1e36d61
Author: root <root@ip-172-31-32-87.ec2.internal>
Date: Sat Nov 2 05:23:39 2024 +0000

    adding google file

commit 38f346184849425d8bf81841e7321e2a5afea/cd6
Author: Pravalika-27 <112800726+Pravalika-27@users.noreply.github.com>
Date: Sat Nov 2 10:49:34 2024 +0530

Initial commit
[root@ip-172-31-32-87 pravalika]#

```

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