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<b>Roll Number: 45</b>		<b>Lab Assignment Number: 1</b>
<b>Title of Lab Assignment: Introduction to AWS signup and Service Legal Agreement, Introduction to AWS sagemaker (Signup, freetier, billing &amp; iam), AIML components in AWS, Simple Storage Service (S3) and Elastic Computing Cloud (EC2) Introduction.</b>		
<b>DOP: 25-01-2024</b>		<b>DOS: 06-02-2024</b>
<b>CO Mapped:</b> <b>CO1</b>	<b>PO Mapped:</b> <b>PO1, PO2, PO3, PSO1, PSO2</b>	<b>Signature:</b>

**Practical No. 1**

**Aim: Introduction to AWS signup and Service Legal Agreement, Introduction to AWS sagemaker (Signup, freetier, billing & iam), AIML components in AWS, Simple Storage Service (S3) and Elastic Computing Cloud (EC2) Introduction.**

**Description:**

**Introduction to AWS Sign Up and Service Legal Agreement:** When signing up for Amazon Web Services (AWS), users embark on a streamlined process that involves creating an AWS account. This account provides access to a comprehensive suite of cloud services. During the signup, users must agree to AWS's Service Legal Agreement, which outlines terms and conditions governing the use of AWS services, ensuring a clear understanding of responsibilities and obligations.

Here's a step-by-step guide to help you with the AWS sign-up process:

**1. Visit the AWS Website:**

Open your web browser and go to the official AWS website at <https://aws.amazon.com/>

**2. Choose "Sign in to the Console":**

On the AWS homepage, click on the "Sign in to the Console" button located in the top right corner.

**3. Create an AWS Account:**

If you don't already have an AWS account, click on the "Create a new AWS account" button. If you have an existing AWS account, you can sign in with your credentials.

**4. Provide Your Email Address:**

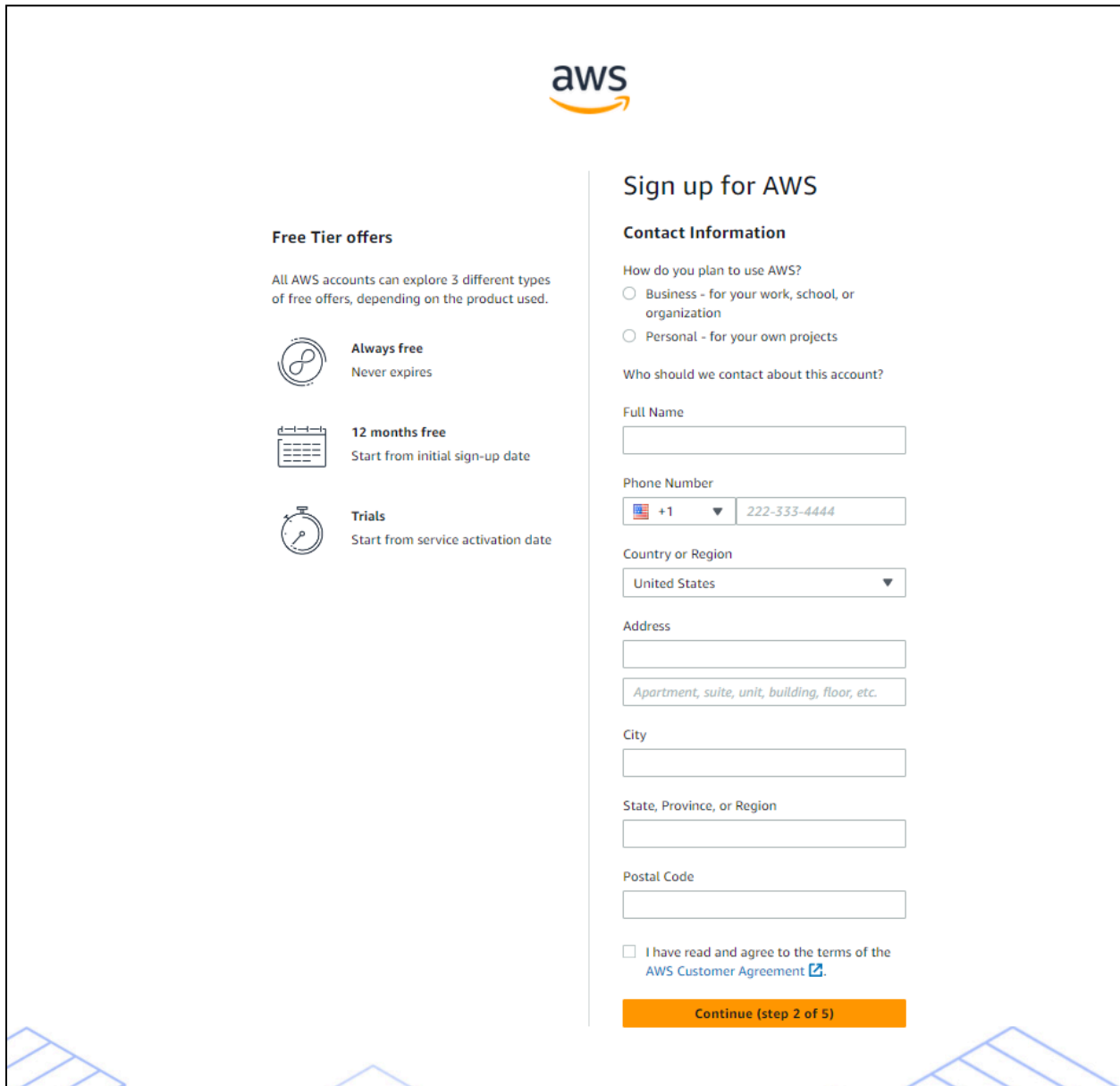
Enter the email address you want to associate with your AWS account. Make sure to use a valid email address as AWS will send important notifications and account-related information to this address.

**5. Set up a Password:**

Choose a secure password for your AWS account. AWS has specific requirements for passwords, so ensure that your chosen password meets the criteria.

**6. Enter Your Account Information:**

Fill in your account information, including your account name (which will be used as your AWS account alias), full name, and contact information.



**Free Tier offers**

All AWS accounts can explore 3 different types of free offers, depending on the product used.

- Always free**  
Never expires
- 12 months free**  
Start from initial sign-up date
- Trials**  
Start from service activation date

**Sign up for AWS**

**Contact Information**

How do you plan to use AWS?

☐ Business - for your work, school, or organization

☐ Personal - for your own projects

Who should we contact about this account?

Full Name

Phone Number

+1 222-333-4444

Country or Region

United States

Address

Apartment, suite, unit, building, floor, etc.

City

State, Province, or Region

Postal Code

☐ I have read and agree to the terms of the [AWS Customer Agreement](#)

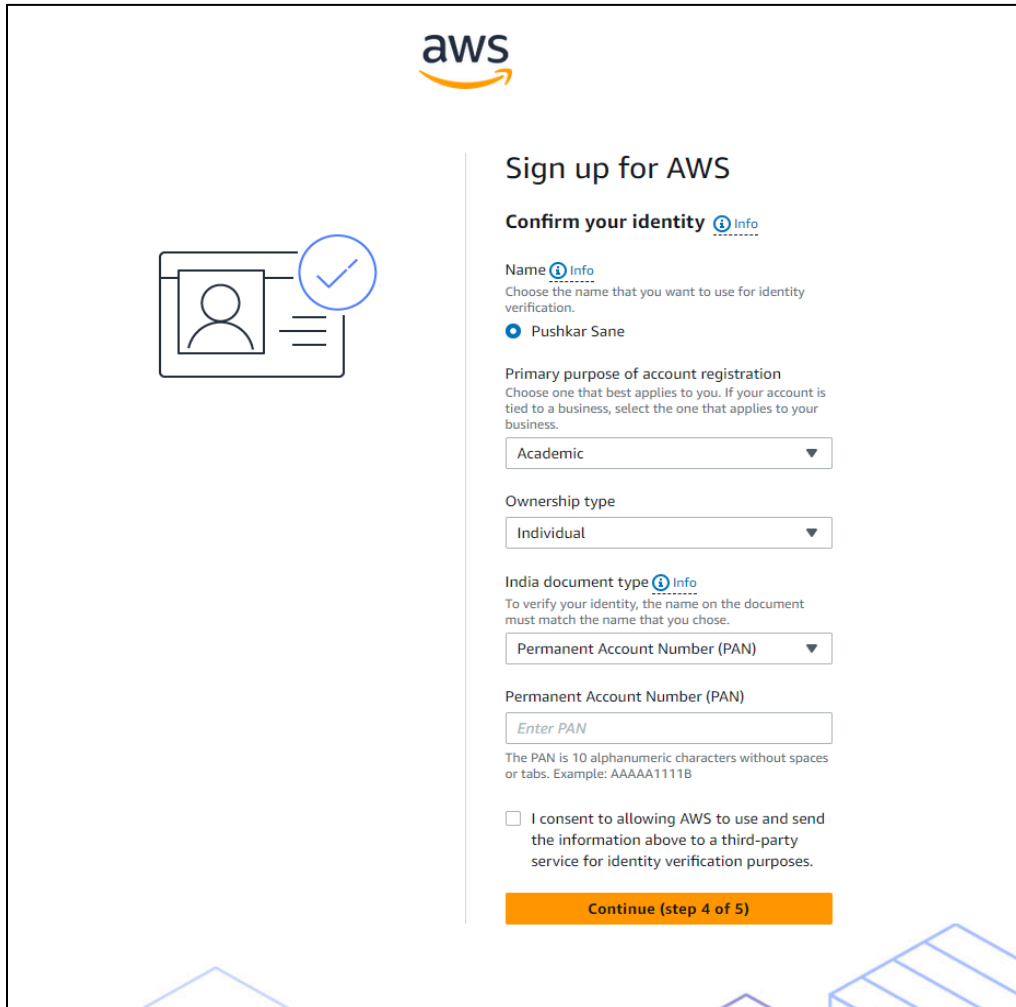
**Continue (step 2 of 5)**

**7. Payment Information:**

Provide your payment information. AWS requires valid payment details even if you plan to use free-tier services. This is to verify your identity and prevent misuse of AWS resources.

**8. Identity Verification:**

AWS may perform an identity verification process to ensure the security of your account. This may involve a phone call or text message verification.



The screenshot shows the AWS sign-up process at the 'Confirm your identity' step. On the left is an illustration of a document with a person icon and a checkmark. The main content area is titled 'Sign up for AWS' and 'Confirm your identity'. It includes a 'Name' field with 'Pushkar Sane' selected, a 'Primary purpose of account registration' dropdown set to 'Academic', an 'Ownership type' dropdown set to 'Individual', and an 'India document type' dropdown set to 'Permanent Account Number (PAN)'. Below these is a text input for the PAN, a consent checkbox, and a 'Continue (step 4 of 5)' button. The AWS logo is at the top left of the form area.

aws

## Sign up for AWS

### Confirm your identity [Info](#)

Name [Info](#)  
Choose the name that you want to use for identity verification.

☒ Pushkar Sane

Primary purpose of account registration  
Choose one that best applies to you. If your account is tied to a business, select the one that applies to your business.

Academic ▼

Ownership type

Individual ▼

India document type [Info](#)  
To verify your identity, the name on the document must match the name that you chose.

Permanent Account Number (PAN) ▼

Permanent Account Number (PAN)

Enter PAN


The PAN is 10 alphanumeric characters without spaces or tabs. Example: AAAA1111B

☐ I consent to allowing AWS to use and send the information above to a third-party service for identity verification purposes.

Continue (step 4 of 5)


### 9. Choose a Support Plan:

AWS offers different support plans, including a free basic plan and various premium plans with additional features. Choose the plan that best fits your needs.




## Sign up for AWS

### Select a support plan

Choose a support plan for your business or personal account. [Compare plans and pricing examples](#)  
 You can change your plan anytime in the AWS Management Console.


☒ **Basic support - Free**

- Recommended for new users just getting started with AWS
- 24x7 self-service access to AWS resources
- For account and billing issues only
- Access to Personal Health Dashboard & Trusted Advisor




☐ **Developer support - From \$29/month**


- Recommended for developers experimenting with AWS
- Email access to AWS Support during business hours
- 12 (business)-hour response times




☐ **Business support - From \$100/month**

- Recommended for running production workloads on AWS
- 24x7 tech support via email, phone, and chat
- 1-hour response times
- Full set of Trusted Advisor best-practice recommendations





#### Need Enterprise level support?

From \$15,000 a month you will receive 15-minute response times and concierge-style experience with an assigned Technical Account Manager. [Learn more](#) 

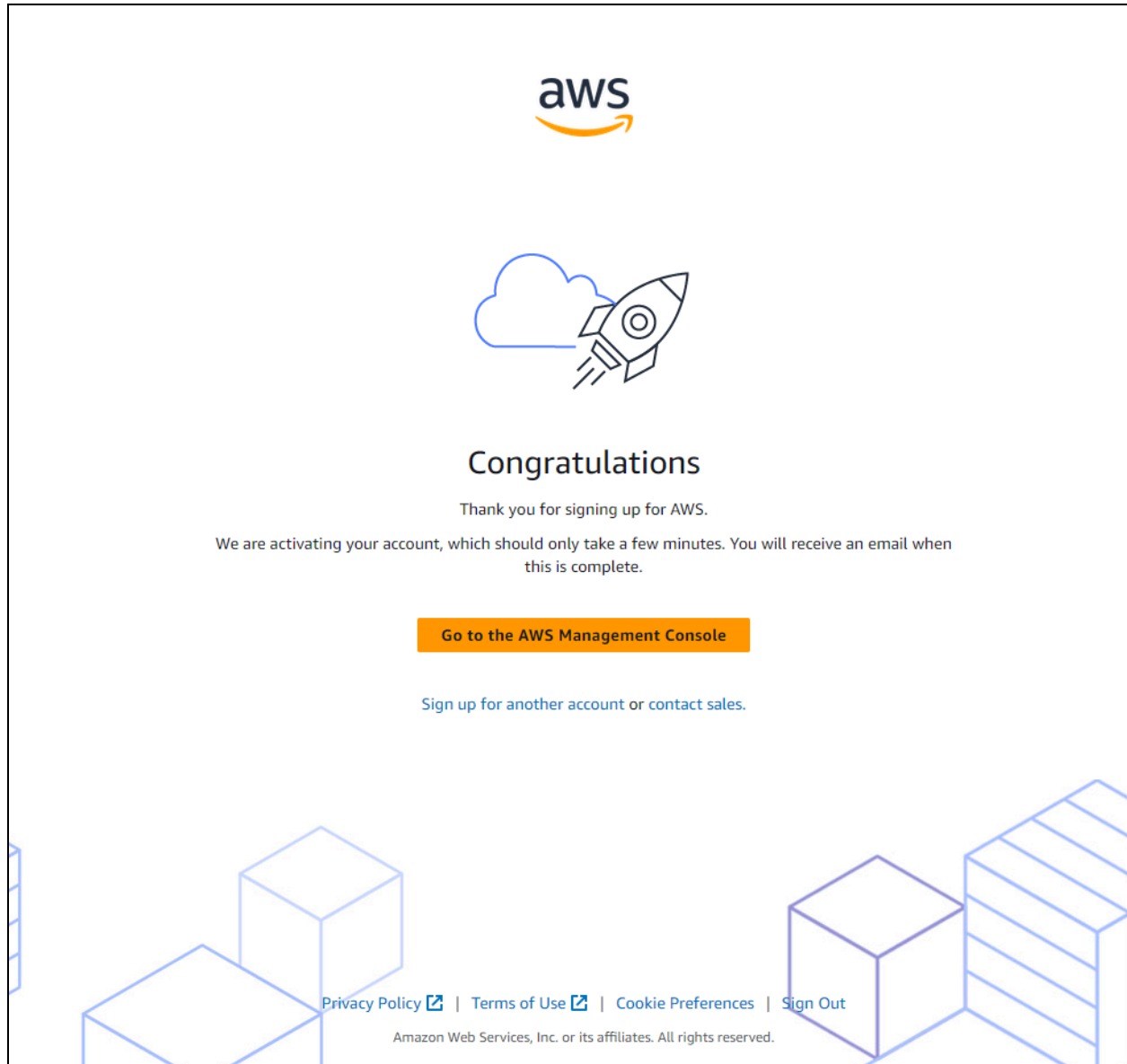
**Complete sign up**

### 10. Review and Confirm:

Review the information you provided, including your email address, account details, and payment information. Once you are satisfied, click on the "Create Account and Continue" button.

**11. Confirmation Email:**

AWS will send a confirmation email to the address you provided. Open the email and click on the confirmation link to verify your email address.

**12. Set up Multi-Factor Authentication (Optional):**

For added security, consider setting up Multi-Factor Authentication (MFA) for your AWS account. This can be done during the sign-up process or later within the AWS Management Console.

Once you've completed these steps, your AWS account will be created, and you can start using the AWS services. Keep your account credentials secure, and consider enabling additional security measures, such as IAM (Identity and Access Management) policies, for better control over your AWS resources.

## Service Legal Agreement:

**aws**

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## AWS Service Terms

Last Updated: January 25, 2024

### 1. Universal Service Terms (Applicable to All Services)

The Service Terms below govern your use of the Services. Capitalized terms used in these Service Terms but not defined below are defined in the [AWS Customer Agreement](#) or other agreement with us governing your use of the Services (the "Agreement"). For purposes of these Service Terms, "Your Content" includes any "Company Content" and any "Customer Content," and "AWS Content" includes "Amazon Properties."

**1.1.** You may not transfer outside the Services any software (including related documentation) you obtain from us or third party licensors in connection with the Services without specific authorization to do so.

**1.2.** You must comply with current technical documentation applicable to the Services (including applicable user, admin, and developer guides) posted on the AWS Site at <https://docs.aws.amazon.com/index.html> (and any successor or related locations designated by us).

**1.3.** You will provide information or other materials related to Your Content (including copies of any client-side applications) as reasonably requested by us to verify your compliance with the Agreement. You will reasonably cooperate with us to identify the source of any problem with the Services that we reasonably believe may be attributable to Your Content or any end-user materials that you control.

**1.4.** In connection with your use of the Services, you are responsible for maintaining licenses and adhering to the license terms of any software you run. If we reasonably believe any of Your Content violates the law, infringes or misappropriates the rights of any third party, or otherwise violates a material term of the Agreement (including the Service Terms, or the Acceptable Use Policy) ("Prohibited Content"), we will notify you of the Prohibited Content and may request that such content be removed from the Services or access to it be disabled. If you do not remove or disable access to the Prohibited Content within 2 business days of our notice, we may remove or disable access to the Prohibited Content or suspend the Services to the extent we are not able to remove or disable access to the Prohibited Content. Notwithstanding the foregoing, we may remove or disable access to any Prohibited Content without prior notice in connection with illegal content, where the content may disrupt or threaten the Services or in accordance with applicable law or any judicial, regulatory

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**1.5.** You will ensure that all information you provide to us via the AWS Site (e.g., information provided in connection with your registration for the Services, requests for increased usage limits) is accurate, complete, and not misleading.

**1.6.** From time to time, we may apply upgrades, patches, bug fixes, or other maintenance to the Services and AWS Content ("Maintenance"). We agree to use reasonable efforts to provide you with prior notice of any scheduled Maintenance (except for emergency Maintenance), and you agree to use reasonable efforts to comply with any Maintenance requirements that we notify you about.

**1.7.** If your Agreement does not include a provision on AWS Confidential Information, and you and AWS do not have an effective non-disclosure agreement in place, then you agree that you will not disclose AWS Confidential Information (as defined in the AWS Customer Agreement), except as required by law.

**1.8.** You may perform benchmarks or comparison tests or evaluations (each, a "Benchmark") of the Services, if you perform or disclose, or direct or permit any third party to perform or disclose, any Benchmark of any of the Services, you (i) will include in any disclosure, and will disclose to us, all information necessary to replicate such Benchmark, and (ii) agree that we may perform and disclose the results of Benchmarks of your products or services, irrespective of any restrictions on Benchmarks in the terms governing your products or services.

**1.9.** Only the applicable AWS Contracting Party (as defined in the AWS Customer Agreement) will have obligations with respect to each AWS account, and no other AWS Contracting Party has any obligation with respect to such account. The AWS Contracting Party for an account may change as described in the Agreement. Invoices for each account will reflect the AWS Contracting Party that is responsible for that account during the applicable billing period.

If, at the time of a change of the AWS Contracting Party responsible for your account, you have made an up-front payment for any Services under such account, then the AWS Contracting Party you paid such up-front payment to may remain the AWS Contracting Party for the applicable account only with respect to the Services related to such up-front payment.

**1.10.** When you use a Service, you may be able to use or be required to use one or more other Services (each, an "Associated Service"), and when you use an Associated Service, you are subject to the terms and fees that apply to that Associated Service.

**1.11.** If you process the personal data of End Users or other identifiable individuals in your use of a Service, you are responsible for providing legally adequate privacy notices and obtaining necessary consents for the processing of such data. You represent to us that you have provided all necessary privacy notices and obtained all necessary consents. You are responsible for processing such data in accordance with applicable law.

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**1.12.4** These Service Terms incorporate the [AWS UK GDPR Addendum](#) to the DPA, when the UK GDPR applies to your use of the AWS Services to process UK Customer Data (as defined in the AWS UK GDPR Addendum), and the [AWS Swiss Addendum](#) to the DPA, when the GDPR applies to your use of the AWS Services to process Swiss Customer Data (as defined in the AWS Swiss Addendum).

**1.12.5** These Service Terms incorporate the [AWS CCPA Terms](#) ("CCPA Terms"), when the CCPA applies to your use of the AWS Services to process Personal Information (as defined in the CCPA Terms).

**1.15.** Following closure of your AWS account, we will delete Your Content in accordance with the technical documentation applicable to the Services.

**1.16.** Your receipt and use of any Promotional Credits is subject to the [AWS Promotional Credit Terms & Conditions](#).

**1.17. Payment Currency**

**1.17.1** AWS provides a Service that enables payment in certain currencies ("Payment Currency") other than United States dollars when you purchase certain Services from AWS (the "Currency Service"). When you purchase Services in certain countries outside of the United States, we may require you, because of currency controls or other factors, to use the Currency Service. When using the Currency Service you are not tendering payment in one currency and receiving from us another currency.

**1.17.2** When you use the Currency Service, service fees and charges will automatically be invoiced in the Payment Currency. You must pay invoices in the currency specified on each invoice, but, for credit card or debit card purchases, you may only make payments in currencies supported by the issuer of your card. If the issuer of your credit card or debit card does not support the required Payment Currency, you must use a different payment method that does support paying in the Payment Currency.

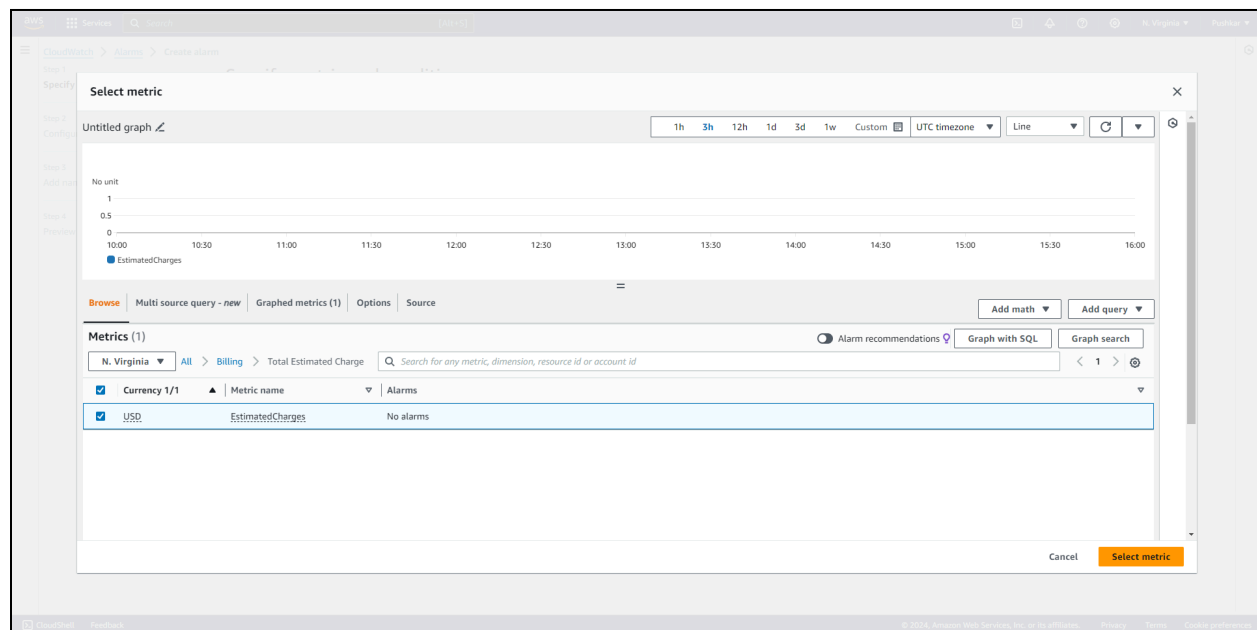
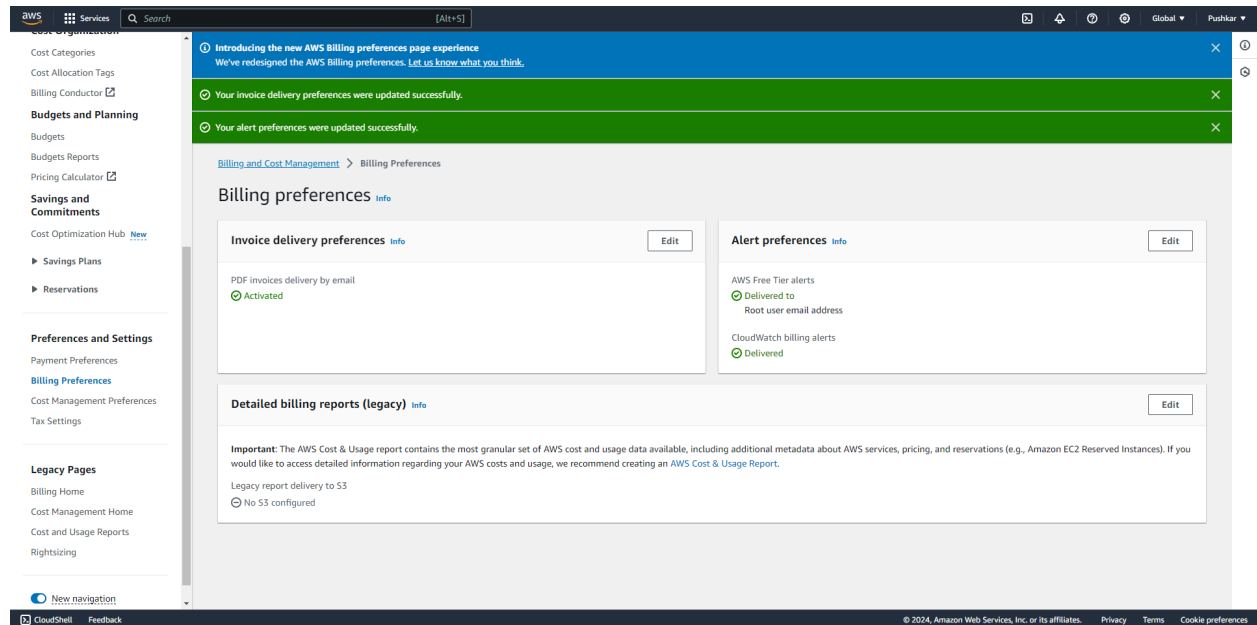
**1.17.3** Our fees and charges for your use of the Currency Service, if any, are included in the exchange rate applied to your invoice (the "Applicable Exchange Rate"). Third parties, such as your bank, credit card issuer, debit card issuer, or card network, may charge you additional fees. The Applicable Exchange Rate is determined at the time your invoice is generated and, for invoices covering usage of Services over a period of time, will apply to all usage and Service charges listed on that invoice.

**1.17.4** All refunds processed against an invoice will be provided in the currency in which the invoice was generated and reflected as a credit memo or a payment in your Payment Currency.

## Introduction to AWS SageMaker:

Amazon SageMaker is a managed machine learning service by AWS. It streamlines the entire machine learning workflow, from data labeling and model training to deployment and monitoring. With built-in algorithms, hyperparameter optimization, and easy integration with AWS ecosystem, SageMaker makes machine learning accessible to developers and data scientists.

## Billing Process:





### Conditions

**Threshold type**

☒ **Static**  
Use a value as a threshold

☐ **Anomaly detection**  
Use a band as a threshold

**Whenever EstimatedCharges is...**  
Define the alarm condition.

☒ **Greater**  
> threshold

☐ **Greater/Equal**  
>= threshold

☐ **Lower/Equal**  
<= threshold

☐ **Lower**  
< threshold

**than...**  
Define the threshold value.

**USD**

Must be a number

► **Additional configuration**

Cancel Next

CloudWatch

Alarms

Create alarm

Step 1  
Specify metric and conditions

Step 2  
Configure actions

Step 3  
Add name and description

Step 4  
Preview and create

### Configure actions

**Notification**

Remove

**Alarm state trigger**  
Define the alarm state that will trigger this action.

☒ **In alarm**  
The metric or expression is outside of the defined threshold.

☐ **OK**  
The metric or expression is within the defined threshold.

☐ **Insufficient data**  
The alarm has just started or not enough data is available.

**Send a notification to the following SNS topic**  
Define the SNS (Simple Notification Service) topic that will receive the notification.

☐ Select an existing SNS topic

☒ Create new topic

☐ Use topic ARN to notify other accounts

**Create a new topic...**  
The topic name must be unique.

SNS topic names can contain only alphanumeric characters, hyphens (-) and underscores (\_).

**Email endpoints that will receive the notification...**  
Add a comma-separated list of email addresses. Each address will be added as a subscription to the topic above.

user1@example.com, user2@example.com

Create topic Add notification

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Services

Search

[Alt+S]

CloudWatch > Alarms > Create alarm

Step 1  
Specify metric and conditions

Step 2  
Configure actions

Step 3  
**Add name and description**

Step 4  
Preview and create

## Add name and description

### Name and description

Alarm name

Alarm description - optional [View formatting guidelines](#)

Edit

Preview

# This is an H1  
\*\*double asterisks will produce strong character\*\*  
This is [an example](https://example.com/) inline link.

Up to 1024 characters (0/1024)

Markdown formatting is only applied when viewing your alarm in the console. The description will remain in plain text in the alarm notifications.

Cancel

Previous

Next

Step 2: Configure actions

Edit

### Actions

Notification  
When In alarm, send a notification to "Default\_CloudWatch\_Alarms\_Topic"

Step 3: Add name and description

Edit

### Name and description

Name  
BillExceed

Description  
-

Cancel

Previous

Create alarm

The screenshot shows the AWS CloudWatch Alarms console. A green banner at the top states "Successfully created alarm BillExceed." Below this, a blue banner indicates "Some subscriptions are pending confirmation" with a note that "Amazon SNS doesn't send messages to an endpoint until the subscription is confirmed." The main area displays a table of alarms. One alarm, "BillExceed", is listed with the following details:

Name	State	Last state update	Conditions	Actions
BillExceed	Insufficient data	2024-02-06 16:58:26	EstimatedCharges >= 1 for 1 datapoints within 6 hours	Actions enabled <span>Warning</span>

## IAM User:

The screenshot shows the "Specify user details" page in the AWS IAM console. The page is divided into two main sections: "User details" and "Console password".

**User details**

- User name:** Pushkar
- Provide user access to the AWS Management Console - optional:** Checked. A note states: "If you're providing console access to a person, it's a best practice to manage their access in IAM Identity Center."
- Are you providing console access to a person?**
  - User type:**
    - ☐ Specify a user in Identity Center - Recommended
    - ☒ I want to create an IAM user

**Console password**

- Autogenerated password:** Selected. A note states: "You can view the password after you create the user."
- Custom password:** Not selected. A note states: "Enter a custom password for the user."
- Show password:** Not checked.
- Users must create a new password at next sign-in - Recommended:** Checked. A note states: "Users automatically get the IAMUserChangePassword policy to allow them to change their own password."

IAM > Users > Create user

Step 1  
Specify user details

Step 2  
Set permissions

Step 3  
Review and create

Step 4  
Retrieve password

## Set permissions

Add user to an existing group or create a new one. Using groups is a best-practice way to manage user's permissions by job functions. [Learn more](#)

**Permissions options**

☐ Add user to group

Add user to an existing group, or create a new group. We recommend using groups to manage user permissions by job function.

☐ Copy permissions

Copy all group memberships, attached managed policies, and inline policies from an existing user.

☒ Attach policies directly

Attach a managed policy directly to a user. As a best practice, we recommend attaching policies to a group instead. Then, add the user to the appropriate group.

**Permissions policies (1/1175)**

Choose one or more policies to attach to your new user.

Filter by Type  
All types

< 1 2 3 4 5 6 7 ... 59 >

<input type="checkbox"/>	Policy name	Type	Attached entities
<input type="checkbox"/>	<a href="#">AccessAnalyzerServiceRolePolicy</a>	AWS managed	0
<input checked="" type="checkbox"/>	<a href="#">AdministratorAccess</a>	AWS managed - job function	0
<input type="checkbox"/>	<a href="#">AdministratorAccess-Amplify</a>	AWS managed	0
<input type="checkbox"/>	<a href="#">AdministratorAccess-AWSElasticBeanstalk</a>	AWS managed	0
<input type="checkbox"/>	<a href="#">AlexaForBusinessDeviceSetup</a>	AWS managed	0
<input type="checkbox"/>	<a href="#">AlexaForBusinessFullAccess</a>	AWS managed	0
<input type="checkbox"/>	<a href="#">AlexaForBusinessGatewayExecution</a>	AWS managed	0
<input type="checkbox"/>	<a href="#">AlexaForBusinessLifecycleDelegatedAccessPolicy</a>	AWS managed	0

IAM > Users > Create user

Step 1  
Specify user details

Step 2  
Set permissions

Step 3  
Review and create

Step 4  
Retrieve password

## Review and create

Review your choices. After you create the user, you can view and download the autogenerated password, if enabled.

**User details**

User name	Console password type	Require password reset
Pushkar	Autogenerated	Yes

**Permissions summary**

Name	Type	Used as
<a href="#">AdministratorAccess</a>	AWS managed - job function	Permissions policy
<a href="#">IAMUserChangePassword</a>	AWS managed	Permissions policy

**Tags - optional**

Tags are key-value pairs you can add to AWS resources to help identify, organize, or search for resources. Choose any tags you want to associate with this user.

No tags associated with the resource.

Add new tag

You can add up to 50 more tags.

CancelPreviousCreate user

✔ User created successfully

You can view and download the user's password and email instructions for signing in to the AWS Management Console.

View user

IAM > Users > Create user

Step 1  
Specify user details

Step 2  
Set permissions

Step 3  
Review and create

Step 4  
Retrieve password

## Retrieve password

You can view and download the user's password below or email users instructions for signing in to the AWS Management Console. This is the only time you can view and download this password.

**Console sign-in details**

Email sign-in instructions

Console sign-in URL

<https://058264423218.signin.aws.amazon.com/console>

User name

Pushkar

Console password

\*\*\*\*\* Show

CancelDownload .csv fileReturn to users list



**AIML Components in AWS:**

AWS provides a robust set of Artificial Intelligence and Machine Learning (AIML) services. These components include Amazon SageMaker for end-to-end machine learning workflows, Amazon Comprehend for natural language processing, Amazon Rekognition for image and video analysis, and more. These AIML services empower users to integrate powerful machine learning capabilities into their applications without the need for extensive expertise in the field.

**Simple Storage Service (S3) Introduction:**

Amazon S3 (Simple Storage Service) is a scalable object storage service in AWS, designed to store and retrieve any amount of data from anywhere on the web. S3 offers industry-leading durability, availability, and scalability, making it ideal for diverse storage needs. Users can organize data in buckets, control access through flexible permissions, and leverage features like versioning and lifecycle policies.

**Elastic Computing Cloud (EC2) Introduction:**

Amazon EC2 (Elastic Compute Cloud) forms the backbone of AWS's compute services, offering resizable virtual servers in the cloud. Users can choose from a variety of instance types based on their specific computational requirements. EC2 instances provide flexibility, scalability, and control over computing resources, enabling users to run applications efficiently and cost-effectively in the AWS cloud.

**Conclusion:** In conclusion, this practical provided an introduction to essential aspects of Amazon Web Services (AWS), beginning with the sign-up process and familiarization with service legal agreements. It then delved into Amazon SageMaker, emphasizing its ease of access, free tier availability, billing structure, and integration with AWS Identity and Access Management (IAM). Additionally, the practical covered key components of artificial intelligence and machine learning (AIML) within AWS, followed by an overview of fundamental services like Simple Storage Service (S3) and Elastic Compute Cloud (EC2). These foundational concepts equip users with the knowledge necessary to leverage AWS effectively for their computing and machine learning needs.