Exp.No.	01	Cloud Account Setup and Services Overview	Year/Sem	II/IV
Date	08/03/2025		Branch	B.Tech IT

Aim:

To create an AWS cloud account and explore its various services.

Procedure:

Account Creation

1. Open your web browser and go to the official AWS website: https://aws.amazon.com/.
2. Click on the **"Create an AWS Account"** button on the top-right corner.
3. Enter a valid **email address** and choose an **AWS account name**.
4. Create a **strong password** that meets AWS security requirements.
5. Fill in your **contact information** (name, phone number, country/region).
6. Provide **payment details** (credit/debit card) for verification.
7. Enter your **billing address** and confirm the details.
8. AWS will send a **One-Time Password (OTP)** to your email or phone.
9. Enter the OTP in the verification field to confirm your identity.
10. Choose the **Basic (Free) Plan** to access AWS Free Tier services.
11. Accept the **terms and conditions** and click **"Continue"**.
12. After account creation, you will receive a **confirmation email**.
13. Go to the **AWS Management Console login page**.
14. Enter your **email address and password** to log in.

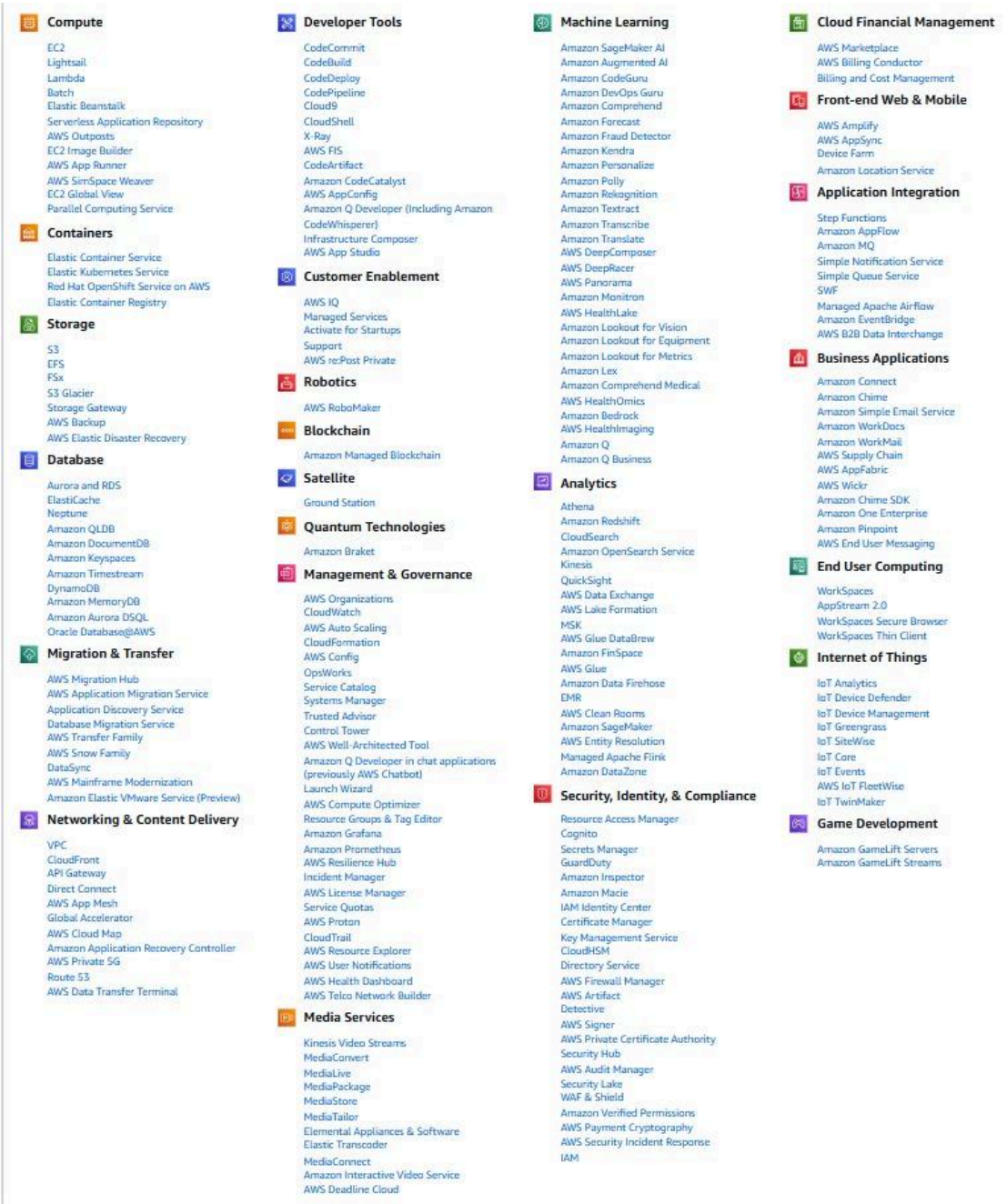
Exploring AWS Management Console

1. After logging in, access the **AWS Management Console dashboard**.
2. Use the **navigation pane** to explore AWS services like EC2, S3, and Lambda.
3. Use the **search bar** at the top to quickly find AWS services.
4. Click on any service to view its features and functionalities.
5. Customize your **dashboard layout** to prioritize frequently used services.
6. Visit the **Billing Dashboard** via the account menu to monitor usage.
7. Set up **billing alerts** to notify you of high usage.
8. Track **AWS Free Tier usage** to avoid unexpected charges.
9. Access **AWS documentation** and tutorials for guidance.
10. Experiment with different services using the Free Tier.

AWS:

Amazon Web Services (AWS) is a cloud service provider that offers computing services over the internet. It provides a platform for businesses to access IT resources like servers, storage, and databases.It is the world's most comprehensive and broadly adopted cloud platform, offering over 200 services including compute, storage, and databases.

Services in AWS:



i)**Compute Service ;**

Compute services are a set of cloud-based services that provide computing power for building, deploying, and managing applications. They are also known as Infrastructure-as-a-Service (IaaS).

- Amazon EC2 - Amazon EC2 stands for Amazon Elastic Compute Cloud.Provides virtual machines (VMs) with storage, memory, central processing units (CPUs), and networking capabilities.
- Amazon Lambda -A cloud computing service that allows developers to run code without managing servers.Allows users to run code without managing or provisioning servers.
- Amazon Lightsail - A cloud service offered by Amazon Web Services (AWS) that provides a simplified way to launch and manage virtual private servers (VPS).A virtual private server (VPS) that allows users to build websites and applications.Allows users to deploy web app tech stacks like Node.js, LAMP, Nginx, and MEAN.
- Amazon Elastic Kubernetes Service - A service that allows users to run Kubernetes in AWS and on-premises data centers. It automates the management of Kubernetes clusters. Allows users to manage and run their infrastructure in a Kubernetes environment.Kubernetes is an open-source tool that helps users automate, scale, deploy, and operate containerized applications

ii)**Storage Services** :

Cloud-based services that provide storage for data. These services are designed to be reliable, scalable, and secure.

- Amazon S3 - Amazon Simple Storage Service (S3) is a cloud storage service that lets users store and access data online.
- Amazon Elastic Block Store (EBS) - Amazon Elastic Block Store (EBS) is a cloud-based storage service that allows users to create and manage storage volumes for Amazon EC2 instances. These volumes can be used to store files, install applications, and more.
- Amazon Glacier - Amazon Glacier is a cloud storage service that is used to archive and back up data that is not used frequently
- Amazon Elastic File System (EFS) - Amazon Elastic File System (EFS) is a cloud-based file storage service offered by Amazon Web Services (AWS) that allows users to create and access shared file systems that can be easily scaled up or down based on their needs, without the need to manage underlying storage infrastructure

iii) **Database:**

AWS offers a variety of cloud database services, including relational databases, key-value databases, and graph databases. These databases are designed to be secure, reliable, and high-performing.

- Amazon Relational Database Service (RDS) - A managed service that includes options like PostgreSQL, MySQL, and Aurora
- Amazon Aurora - A fully managed relational database built for the cloud.
- Amazon DynamoDB - A purpose-built NoSQL database

iv) **Deployment & Management:**

Amazon Web Services (AWS) offers a variety of deployment and management tools, including services for code management, application delivery, and infrastructure management.

Deployment Tools -

- Amazon Elastic Container Service:
- AWS Elastic Beanstalk
- AWS CodeDeploy.

Management Tools -

- AWS CodePipeline
- AWS CodeCommit
- AWS Management Console

v)**Analytics & AI in AWS:**

A comprehensive set of capabilities for every analytics workload, optimized for price performance and scale

- **AWS Glue – ETL (Extract, Transform, Load) Service -** AWS Glue is a serverless data integration service used for data extraction, transformation, and loading (ETL).It automates data preparation for analytics and machine learning.
- **Amazon Kinesis – Real-time Data Streaming -** Amazon Kinesis allows businesses to collect, process, and analyze real-time data streams.It is commonly used for log analytics, IoT data processing, and live video streaming.
- **Amazon QuickSight – Business Intelligence & Visualization** -Amazon QuickSight is a cloud-powered BI tool for creating interactive dashboards and reports.It helps organizations visualize data and uncover insights.

vi)**Mobile & Application Services in AWS:**

AWS offers a suite of tools to help developers build, deploy, and manage mobile and web applications efficiently. These services provide scalability, security, and seamless integration with other AWS services.

Applications of AWS:

Amazon Web Services (AWS) provides a robust cloud platform that supports a wide range of applications across various industries.

1.Web Hosting and Content Delivery:

- Static Websites: AWS S3 can host static websites, serving HTML, CSS, and JavaScript files directly from the cloud.
- Dynamic Websites: AWS EC2 can run web applications using various frameworks (e.g., Node.js, Django, Ruby on Rails).
- Content Delivery: Amazon CloudFront, a content delivery network (CDN), caches content at edge locations to reduce latency and improve load times for users globally.

2. Data Storage and Backup:

- Backup Solutions: AWS Backup automates backup processes across AWS services, ensuring data durability and compliance.
- Archiving: Amazon S3 Glacier provides low-cost storage for data archiving and long-term backup.
- Data Lakes: AWS S3 can be used to create data lakes for storing vast amounts of structured and unstructured data, enabling analytics and machine learning.

3. Big Data and Analytics:

- Data Warehousing: Amazon Redshift is a fully managed data warehouse service that allows for complex queries and analytics on large datasets.
- Real-Time Analytics: Amazon Kinesis enables real-time data streaming and analytics, allowing businesses to process and analyze data as it arrives.
- Data Processing: AWS Glue is a fully managed ETL (Extract, Transform, Load) service that prepares data for analytics.

4. Machine Learning and Artificial Intelligence:

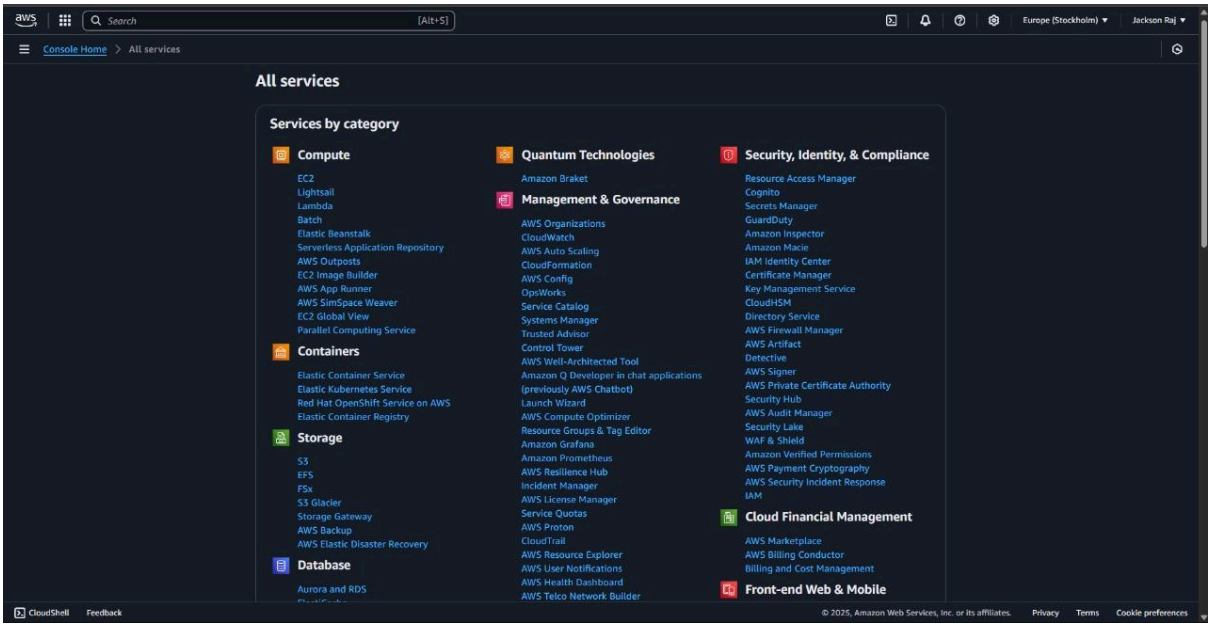
- Pre-trained AI Services: AWS offers various AI services like Amazon Rekognition (image and video analysis), Amazon Comprehend (natural language processing), and Amazon Polly (text-to-speech).
- Data Labeling: Amazon SageMaker Ground Truth helps in building highly accurate training datasets for machine learning.
- Model Training and Deployment: Amazon SageMaker provides tools to build, train, and deploy machine learning models at scale.

5. DevOps and Continuous Integration/Continuous Deployment (CI/CD):

Infrastructure as Code: AWS CloudFormation allows users to define and provision AWS infrastructure using code, enabling version control and automation.

- CI/CD Pipelines: AWS CodePipeline automates the build, test, and deployment phases of application development, facilitating rapid delivery.
- Monitoring and Logging: Amazon CloudWatch provides monitoring and logging services, allowing teams to track application performance and troubleshoot issues.
- Infrastructure as Code: AWS CloudFormation allows users to define and provision AWS infrastructure using code, enabling version control and automation.

Conclusion:



Cloud computing is a fantastic platform that offers servers, storage, and applications helpful for managing the business in a secure way from anywhere in the world. It requires a good internet connection to offer highly secure, cost-effective, and scalable resources.

Result:

Thus, An AWS cloud account is successfully created and explored various AWS services.