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<b>Exp.No.</b>	<b>01</b>	<b>Cloud Account Setup and Services Overview</b>	<b>Year/Sem</b>	I/2
<b>Date</b>	08/03/2025		<b>Branch</b>	AIDS

## Aim:

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

## Procedure:

### 1. Create an AWS Account

- Go to [AWS Official Website](#).
- Click on "Create an AWS Account" and enter the required details (email, password, account name).
- Choose "Personal" or "Business" account type and provide billing information.
- Complete identity verification using a phone number.
- Select a support plan (Free Tier recommended for beginners).
- Log in to the AWS Management Console.

### 2. Exploring AWS Services

- Navigate through the AWS Management Console to explore services.
- Access different categories such as Compute, Storage, Database, Networking, and Security.
- Experiment with services like EC2 (Elastic Compute Cloud), S3 (Simple Storage Service), and RDS (Relational Database Service) using Free Tier options.

## AWS:

Amazon Web Services (AWS) is a cloud computing platform that provides on-demand computing power, storage, and various services for businesses and developers.

## Services in AWS:

<b>Compute</b> EC2 Lambda Batch Elastic Beanstalk Serverless Application Repository AWS Outposts EC2 Image Builder AWS App Runner AWS Sinspace Weaver EC2 Global View Parallel Computing Service	<b>Developer Tools</b> CodeCommit CodeBuild CodeDeploy CodePipeline Cloud9 CloudShell X-Ray AWS FIS CodeArtifact Amazon CodeCatalyst AWS AppConfig Amazon Q Developer (Including Amazon CodeWhisperer) Infrastructure Composer AWS App Studio	<b>Machine Learning</b> Amazon SageMaker AI Amazon Augmented AI Amazon CodeGuru Amazon DevOps Guru Amazon Comprehend Amazon Forecast Amazon Fraud Detector Amazon Kendra Amazon Personalize Amazon Polly Amazon Rekognition Amazon Textract Amazon Transcribe Amazon Translate AWS DeepComposer AWS DeepRacer AWS Panorama Amazon Monitron AWS HealthLake Amazon Lookout for Vision Amazon Lookout for Equipment Amazon Lookout for Metrics Amazon Lex Amazon Comprehend Medical AWS HealthOmics Amazon Bedrock AWS HealthImaging Amazon Q Amazon Q Business	<b>Cloud Financial Management</b> AWS Marketplace AWS Billing Conductor Billing and Cost Management <b>Front-end Web &amp; Mobile</b> AWS Amplify AWS AppSync Device Farm Amazon Location Service <b>Application Integration</b> Step Functions Amazon AppFlow Amazon MQ Simple Notification Service Simple Queue Service SWF Managed Apache Airflow Amazon EventBridge AWS B2B Data Interchange <b>Business Applications</b> Amazon Connect Amazon Chime Amazon Simple Email Service Amazon WorkDocs Amazon WorkMail AWS Supply Chain AWS AppFabric AWS Wicket Amazon Chime SDK Amazon One Enterprise Amazon Pinpoint AWS End User Messaging <b>End User Computing</b> WorkSpaces AppStream 2.0 WorkSpaces Secure Browser WorkSpaces Thin Client <b>Internet of Things</b> IoT Analytics IoT Device Defender IoT Device Management IoT Greengrass IoT SiteWise IoT Core IoT Events AWS IoT FleetWise IoT TwinMaker <b>Game Development</b> Amazon GameLift Servers Amazon GameLift Sessions
<b>Containers</b> Elastic Container Service Elastic Kubernetes Service Red Hat OpenShift Service on AWS Elastic Container Registry	<b>Customer Enablement</b> AWS IQ Managed Services Activate for Startups Support AWS rePost Private	<b>Analytics</b> Athena Amazon Redshift CloudSearch Amazon OpenSearch Service Kinesis QuickSight AWS Data Exchange AWS Lake Formation MSK AWS Glue DataBrew Amazon FinSpace AWS Glue Amazon Data Firehose EMR AWS Clean Rooms Amazon SageMaker AWS Entity Resolution Managed Apache Flink Amazon DataZone	<b>Security, Identity, &amp; Compliance</b> Resource Access Manager Cognito Secrets Manager GuardDuty Amazon Inspector Amazon Macie IAM Identity Center Certificate Manager Key Management Service CloudHSM Directory Service AWS Firewall Manager AWS Artifact Detective AWS Signer AWS Private Certificate Authority Security Hub AWS Audit Manager Security Lake WAF & Shield Amazon Verified Permissions AWS Payment Cryptography AWS Security Incident Response IAM
<b>Storage</b> S3 EFS FSx S3 Glacier Storage Gateway AWS Backup AWS Elastic Disaster Recovery	<b>Blockchain</b> Amazon Managed Blockchain	<b>Management &amp; Governance</b> AWS Organizations CloudWatch AWS Auto Scaling CloudFormation AWS Config OpsWorks Service Catalog Systems Manager Trusted Advisor Control Tower AWS Well-Architected Tool Amazon Q Developer in chat applications (previously AWS Chatbot) Launch Wizard AWS Compute Optimizer Resource Groups & Tag Editor Amazon Grafana Amazon Prometheus AWS Resilience Hub Incident Manager AWS License Manager Service Quotas AWS Proton CloudTrail AWS Resource Explorer AWS User Notifications AWS Health Dashboard AWS Telco Network Builder	<b>Game Development</b> Amazon GameLift Servers Amazon GameLift Sessions
<b>Database</b> Aurora and RDS ElastiCache Neptune Amazon QLDB Amazon DocumentDB Amazon Keyspaces Amazon TimeStream DynamoDB Amazon MemoryDB Amazon Aurora SQL Oracle Database@AWS	<b>Satellite</b> Ground Station	<b>Quantum Technologies</b> Amazon Braket	
<b>Migration &amp; Transfer</b> AWS Migration Hub AWS Application Migration Service Application Discovery Service Database Migration Service AWS Transfer Family AWS Snow Family DataSync AWS Mainframe Modernization Amazon Elastic VMware Service (Preview)	<b>Media Services</b> Kinesis Video Streams MediaConvert MediaLive MediaPackage MediaStore MediaTailor Elemental Appliances & Software Elastic Transcoder MediaConnect Amazon Interactive Video Service AWS Deadline Cloud		
<b>Networking &amp; Content Delivery</b> VPC CloudFront API Gateway Direct Connect AWS App Mesh Global Accelerator AWS Cloud Map Amazon Application Recovery Controller AWS Private 5G Route 53 AWS Data Transfer Terminal			

## i. Compute & Networking

These services provide cloud computing power and networking capabilities to support scalable applications.

- **Amazon EC2 (Elastic Compute Cloud)** – Scalable virtual servers in the cloud.
- **AWS Lambda** – Serverless computing that runs code in response to events.
- **Amazon VPC (Virtual Private Cloud)** – Secure and customizable cloud networks.
- **AWS Fargate** – Serverless compute engine for containers.
- **Amazon Elastic Load Balancer (ELB)** – Distributes incoming traffic across multiple EC2 instances.
- **AWS Auto Scaling** – Automatically adjusts compute resources based on demand.
- **Amazon Lightsail** – Simplified cloud hosting with virtual servers, databases, and networking.
- **AWS Batch** – Batch processing at any scale without managing infrastructure.
- **AWS Outposts** – AWS infrastructure and services on-premises for hybrid cloud environments.

## ii. Storage & Content Delivery

These services handle scalable storage, data backup, and content delivery.

- **Amazon S3 (Simple Storage Service)** – Scalable object storage for data backup and hosting.
- **Amazon EBS (Elastic Block Store)** – Persistent block storage for EC2 instances.
- **Amazon CloudFront** – Global content delivery network (CDN) for faster content delivery.
- **Amazon Glacier** – Low-cost archival storage for long-term backups.
- **AWS Snowball** – Physical data transfer device for migrating large datasets to AWS.
- **AWS Storage Gateway** – Hybrid cloud storage integration for on-premises applications.
- **Amazon FSx** – Fully managed Windows and Lustre file systems.
- **Amazon Elastic File System (EFS)** – Scalable file storage for Linux-based applications.

## iii. Database

AWS provides managed databases for different workloads, from relational to NoSQL and data warehousing.

- **Amazon RDS (Relational Database Service)** – Managed relational databases (MySQL, PostgreSQL, SQL Server, Oracle).
- **Amazon DynamoDB** – Fully managed NoSQL database for key-value storage.
- **Amazon Redshift** – Data warehouse for large-scale analytics and business intelligence.
- **Amazon ElastiCache** – In-memory caching using Redis and Memcached.
- **Amazon Neptune** – Managed graph database for relationship-based applications.
- **Amazon Aurora** – High-performance relational database compatible with MySQL and PostgreSQL.
- **Amazon Keyspaces (for Apache Cassandra)** – Managed Cassandra-compatible database.

## iv. Deployment & Management

AWS simplifies application deployment and infrastructure management.

- **AWS Elastic Beanstalk** – Automated deployment and scaling for web applications.
- **AWS CloudFormation** – Infrastructure as code (IaC) for provisioning AWS resources.
- **AWS OpsWorks** – Configuration management with Chef and Puppet.
- **AWS Systems Manager** – Centralized management for AWS resources.
- **AWS CodeDeploy** – Automates code deployments across instances.
- **AWS CodePipeline** – CI/CD service for automating application delivery.
- **AWS CloudTrail** – Tracks API activity and user actions in AWS.
- **AWS Config** – Monitors and audits AWS resource configurations.

## v. Analytics & AI

AWS provides powerful analytics and AI tools for processing and analyzing large datasets.

- **AWS Glue** – ETL (Extract, Transform, Load) service for data integration.
- **Amazon Kinesis** – Real-time data streaming and analytics.
- **Amazon QuickSight** – Business intelligence (BI) for data visualization.
- **AWS Lake Formation** – Automates the setup of a secure data lake.
- **Amazon Elasticsearch Service** – Managed search and log analytics.
- **Amazon Athena** – Serverless SQL querying for S3-based data lakes.
- **Amazon SageMaker** – AI/ML model training and deployment.
- **AWS DeepLens** – AI-powered deep learning camera for developers.
- **Amazon Comprehend** – Natural language processing (NLP) for sentiment analysis.
- **Amazon Polly** – Text-to-speech conversion.
- **Amazon Rekognition** – Image and video analysis using AI.

## vi. Mobile & Application Services

AWS provides tools to build, deploy, and manage mobile and web applications.

- **AWS Amplify** – Full-stack mobile and web app development.
- **Amazon Cognito** – User authentication and identity management.
- **Amazon API Gateway** – Managed API hosting and management.
- **AWS AppSync** – GraphQL API service for real-time data sync.
- **AWS Device Farm** – Testing mobile apps on real devices in the cloud.
- **Amazon Simple Notification Service (SNS)** – Push notifications for mobile and web apps.
- **Amazon Simple Queue Service (SQS)** – Message queue service for microservices.
- **AWS Step Functions** – Serverless orchestration of AWS services.

## vii. Security, Identity & Compliance

AWS provides services to protect cloud resources and ensure security compliance.

- **AWS Identity and Access Management (IAM)** – Manages access to AWS services securely.
- **AWS Shield** – DDoS protection for applications.
- **AWS Web Application Firewall (WAF)** – Protects applications from common web attacks.
- **AWS Security Hub** – Centralized security monitoring across AWS accounts.
- **AWS Artifact** – Provides compliance and security reports for audits.
- **Amazon GuardDuty** – Threat detection service using AI.
- **AWS Secrets Manager** – Securely stores API keys, passwords, and credentials.
- **AWS Key Management Service (KMS)** – Manages encryption keys for data security.

## viii. Internet of Things (IoT)

AWS provides IoT services for connecting and managing smart devices.

- **AWS IoT Core** – Connects IoT devices securely to AWS.
- **AWS IoT Greengrass** – Extends AWS capabilities to edge devices.
- **AWS IoT Analytics** – Analyzes IoT data for insights.
- **AWS IoT Device Defender** – Secures and monitors IoT devices.
- **AWS IoT SiteWise** – Industrial IoT for monitoring equipment performance.

## ix. Machine Learning

AWS offers tools for training and deploying AI models.

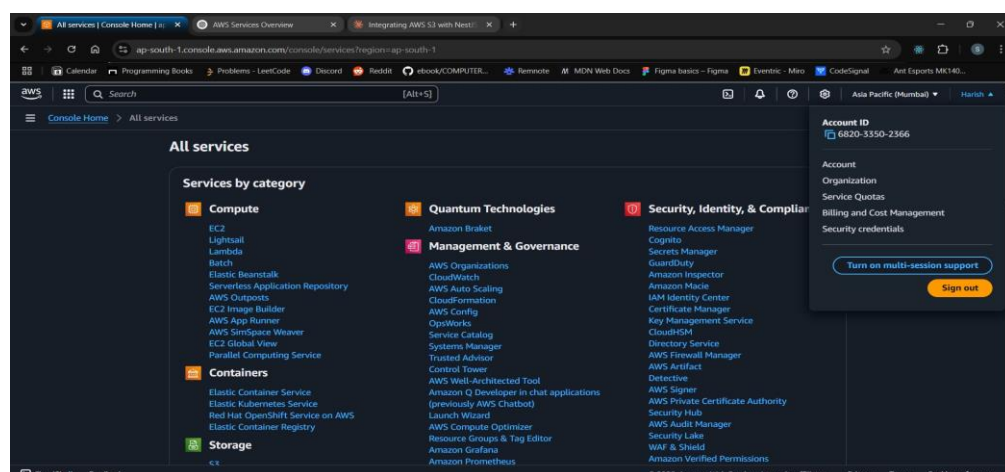
- **Amazon SageMaker** – End-to-end ML model training and deployment.
- **AWS Deep Learning AMIs** – Pre-configured environments for AI workloads.
- **Amazon Textract** – Extracts text from scanned documents.
- **Amazon Lex** – AI-powered chatbot development.
- **Amazon Forecast** – Predictive analytics for business trends.
- **Amazon Personalize** – AI-driven recommendations engine.

## x. Business Applications

AWS provides cloud applications for enterprise productivity and collaboration.

- **Amazon WorkSpaces** – Virtual desktop service for remote work.
- **Amazon Chime** – Cloud-based video conferencing and chat.
- **Amazon Connect** – Cloud contact center solution for customer service.
- **Amazon WorkMail** – Secure email and calendar service.
- **AWS Directory Service** – Active Directory integration for enterprise users.

Output:



Snapshot 1 : cloud account creation in AWS platform.

## Conclusion:

AWS provides a wide range of cloud services that enable businesses and developers to build, deploy, and manage applications efficiently. Exploring AWS services gives hands-on experience in cloud computing, storage, networking, and security.

References:

## Result:

Successfully created an AWS account and explored various AWS services.