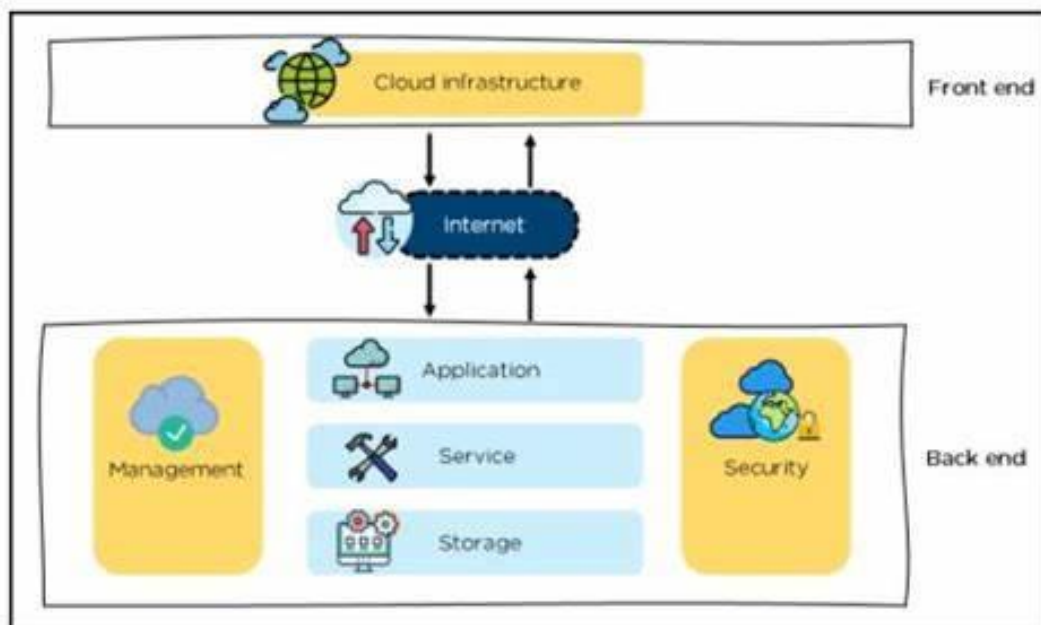| Name: **Netal Prakash Daga**		
Class: TY	Division: A	Roll No: 371016
Semester: V		Academic Year:2022-2023
Subject Name & Code: Cloud Computing and Analytics		
Title of Assignment: Study of Cloud Computing & Architecture.		
Date of Performance: 22/08/2022		Date of Submission: 22/08/2022

Aim: To explore different fields of AWS cloud such as Cloud Architecture and Cloud Services Provided by AWS cloud.

Problem Statement: Study of Cloud Computing & Architecture.

Background Information:

1.**Cloud Architecture:** Cloud Computing architecture comprises of many cloud components, which are loosely coupled. We can broadly divide the cloud architecture into two parts: Front End & Back End. Each of the ends is connected through a network, usually Internet. The following diagram shows the graphical view of cloud computing architecture:

- The **front end** refers to the client part of cloud computing system. It consists of interfaces and applications that are required to access the cloud computing platforms, Example - Web Browser.

- The **back End** refers to the cloud itself. It consists of all the resources required to provide cloud computing services. It comprises of huge data storage, virtual machines, security mechanism, services, deployment models, servers, etc.
- It is the responsibility of the back end to provide built-in security mechanism, traffic control and protocols.
- The server employs certain protocols known as middleware, which help the connected devices to communicate with each other.

2.Resource Components:

- IAM - IAM is a cloud service that controls the permissions and access for users and cloud resources. IAM policies are sets of permission policies that can be attached to either users or cloud resources to authorize what they access and what they can do with it.
- EC2 - Amazon Elastic Compute Cloud (Amazon EC2) provides scalable computing capacity in the Amazon Web Services (AWS) Cloud. Using Amazon EC2 eliminates your need to invest in hardware up front, so you can develop and deploy applications faster.
- VPN - A cloud virtual private network (cloud VPN) is a form of technology designed to help users access their organization's applications, data, and files through a website or an application. Unlike traditional or static VPNs, a cloud VPN provides a secure connection that can be rapidly deployed globally.
- Security Groups - A security group is an AWS firewall solution that performs one primary function: to filter incoming and outgoing traffic from an EC2 instance. It accomplishes this filtering function at the TCP and IP layers, via their respective ports, and source/destination IP addresses.
- Lambda Function - Lambda runs your code on high availability compute infrastructure and performs all the administration of your computer resources. This includes server and operating system maintenance, capacity provisioning and automatic scaling, code and security patch deployment, and code monitoring and logging.
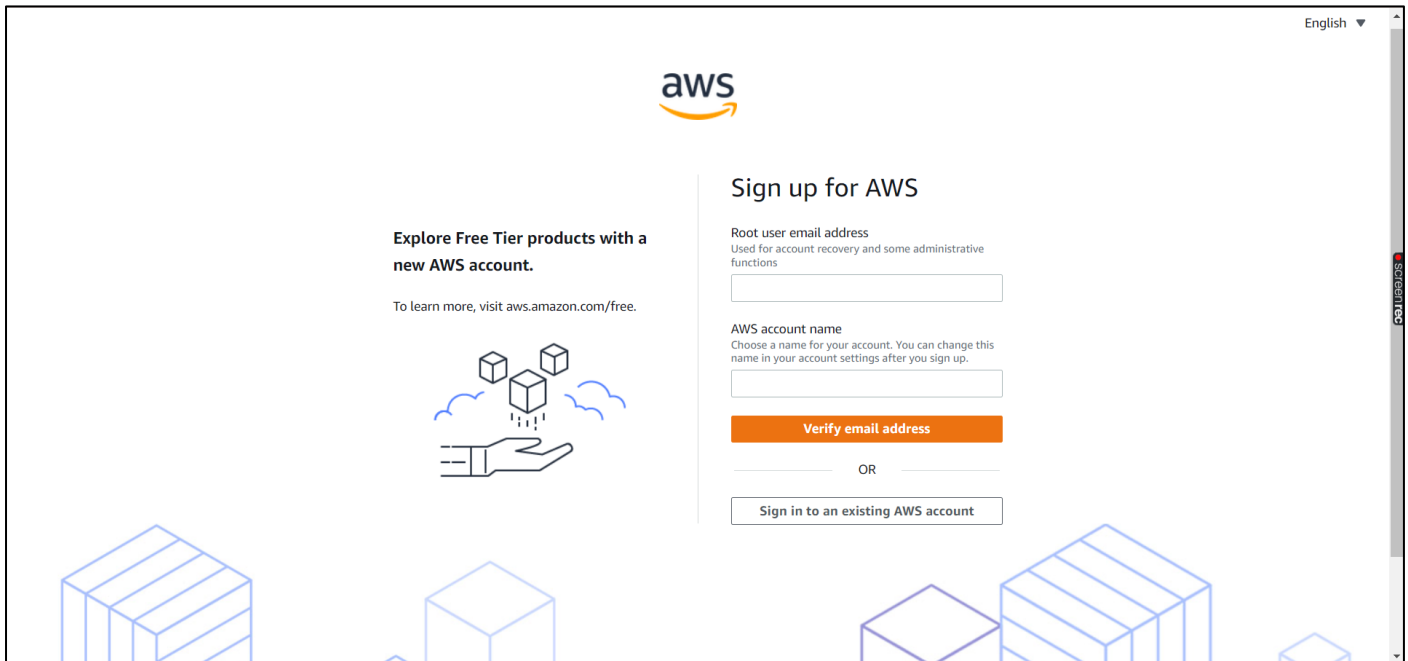
3.Billing Information:

- The AWS Billing console allows you to easily understand your AWS spending, view and pay invoices, manage billing preferences and tax settings, and access additional Cloud Financial Management services.
- Quickly evaluate whether your monthly spend is in line with prior periods, forecast, or budget, and investigate and take corrective actions in a timely manner.
- The AWS Bills page provides a monthly view of your chargeable costs.
- For monthly billing periods that have not yet closed, the Bills page will display the most recent estimated charges based on services metered to date.
- Invoices are generated when a monthly billing period closes, or when subscriptions or one-time purchases are made.
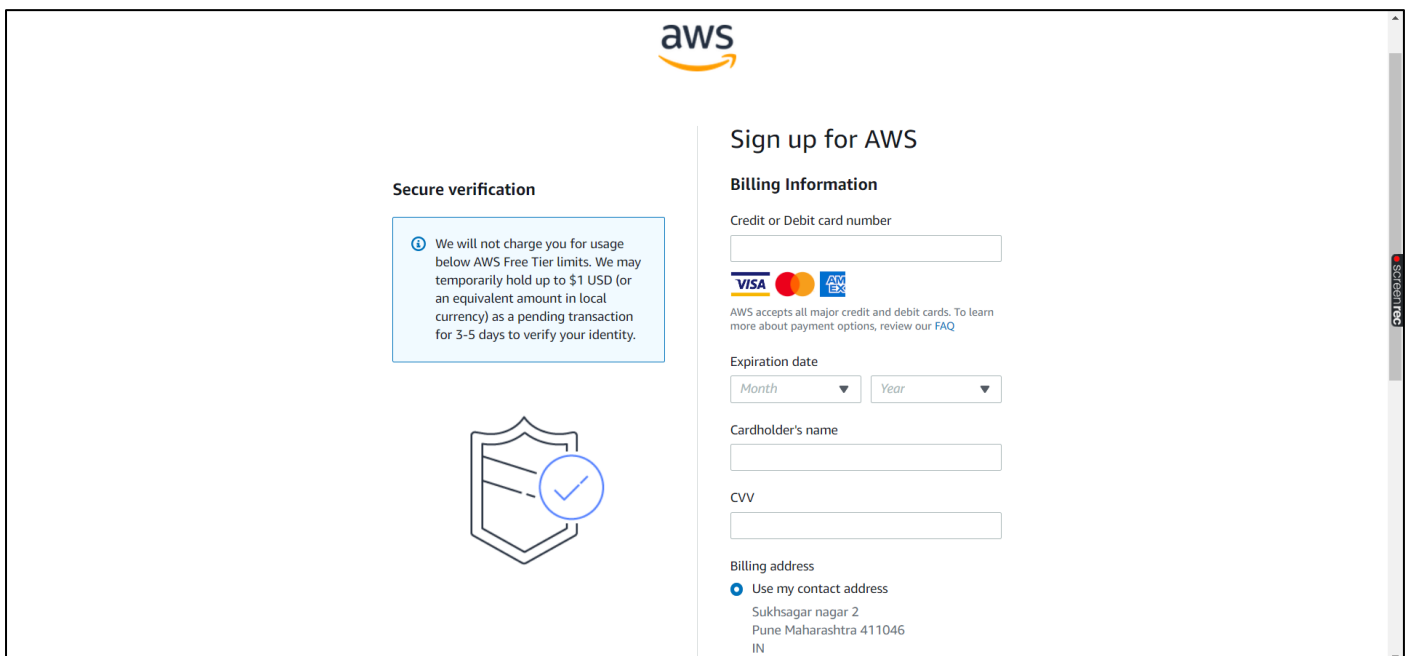
Cloud Resource Requirements: AWS Console Root Login

Steps:

1.] Visit https://aws.amazon.com/premiumsupport/knowledge-center/sign-in-console/ .

2.] Click on Create new account on top right corner. This page will pop-up:

3.] Enter your details & verify your email address.

4.] Set your password & then required details. After completion comes payment page:

GitHub Repo Link:

https://github.com/Netal1702/Cloud-Computing-Analysis

Conclusion: It is one of the demanding technologies of the current time and which is giving a new shape to every organization by providing on demand virtualized services/resources. It has many benefits like reduces IT costs, provide high security, etc.