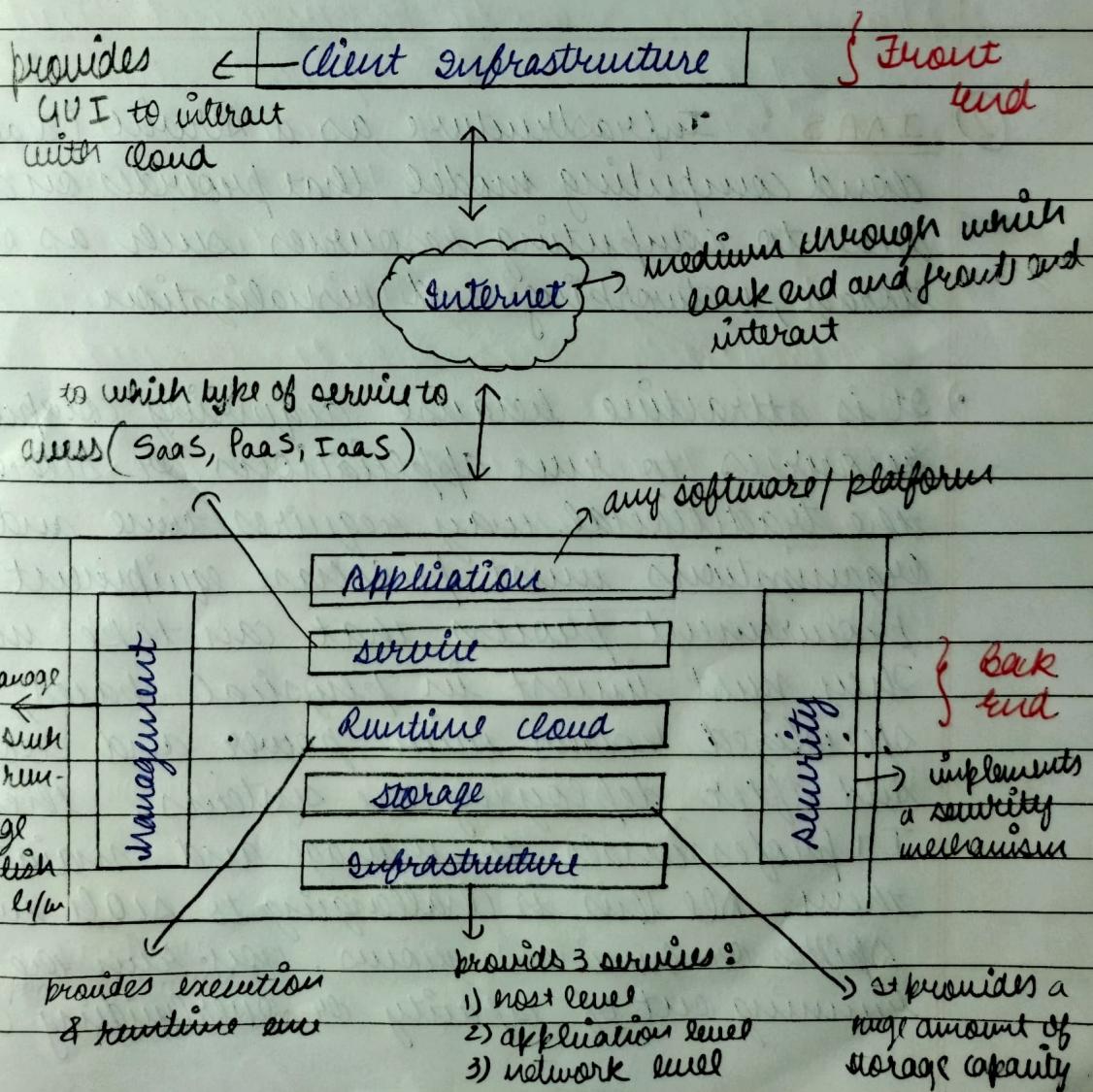


① Cloud computing architecture: • As we know, cloud computing technology is used by both small and large organizations to store the information in cloud and access it from anywhere at anytime using the internet connection.

- It is a combination of service oriented architecture and event driven architecture.
- It is divided into following 2 parts:
  - 1) Front end
  - 2) Back end

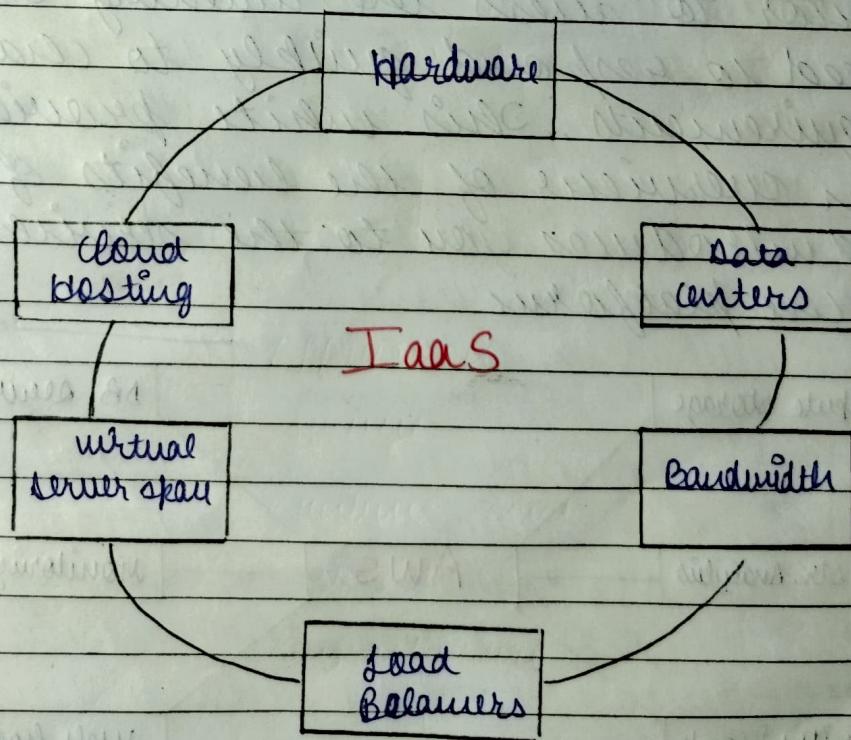


- ) Front end: The front end is used by the client. It contains client - side interfaces and applications that are required to access the cloud computing platforms. The front end includes web servers, thin and fat clients, tablets and mobile devices.
- ) Back end: The back end is used by the service provider. It manages all the resources that are required to provide cloud computing services. It includes a huge amount of data storage, security mechanism etc.

- ② IAAS : Infrastructure as a Service (IaaS) is a cloud computing model that provides on demand access to computing resources such as servers, storage, networking and visualization.
- It is attractive because acquiring computing resources to run applications or store data the traditional way requires time and capital. Organizations must purchase equipment through procurement process. that can take months. They must invest in physical spaces, typically specialized rooms with power and cooling. And after deploying the systems, they need IT professionals to manage and maintain them. All this is challenging to scale when demand spikes or business grows. you run the risk of running out of capacity or overbuilding and paying

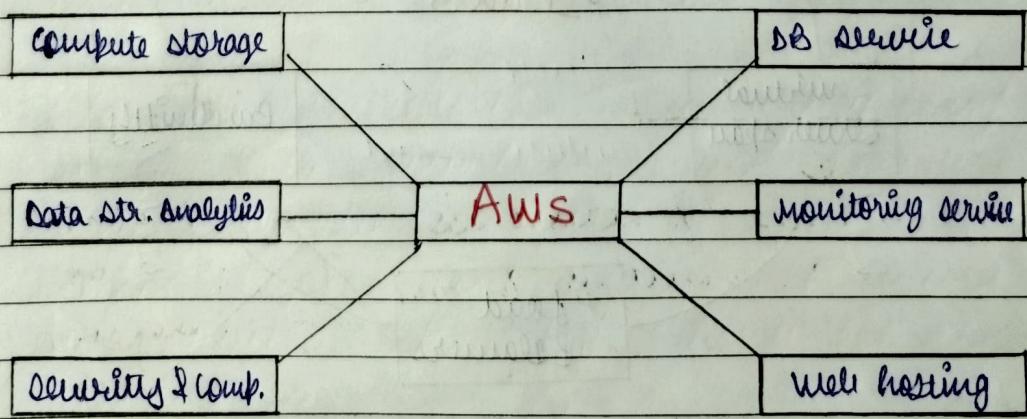
for infrastructure that you will never use.

- It is the on-demand availability of highly scalable computing resources as services over the internet. It eliminates the need for enterprises to procure, configure or measure manage the infrastructure themselves, and they only pay for what they use.
- It manages :
  - 1) Applications
  - 2) Data
  - 3) Runtime
  - 4) Middleware
  - 5) O/S
- It delivers the followings :



③ AWS: It is the abbreviation used for, Amazon web services. It offers a broad set of global cloud based products including compute, storage, databases, analytics, networking, mobile, developer tool, management tools, IoT, security, and enterprise applications. On demand, available in seconds, with pay-as-you-go pricing. From data warehousing to deployment tools, directories to content delivery, over 200 AWS services are there to avail.

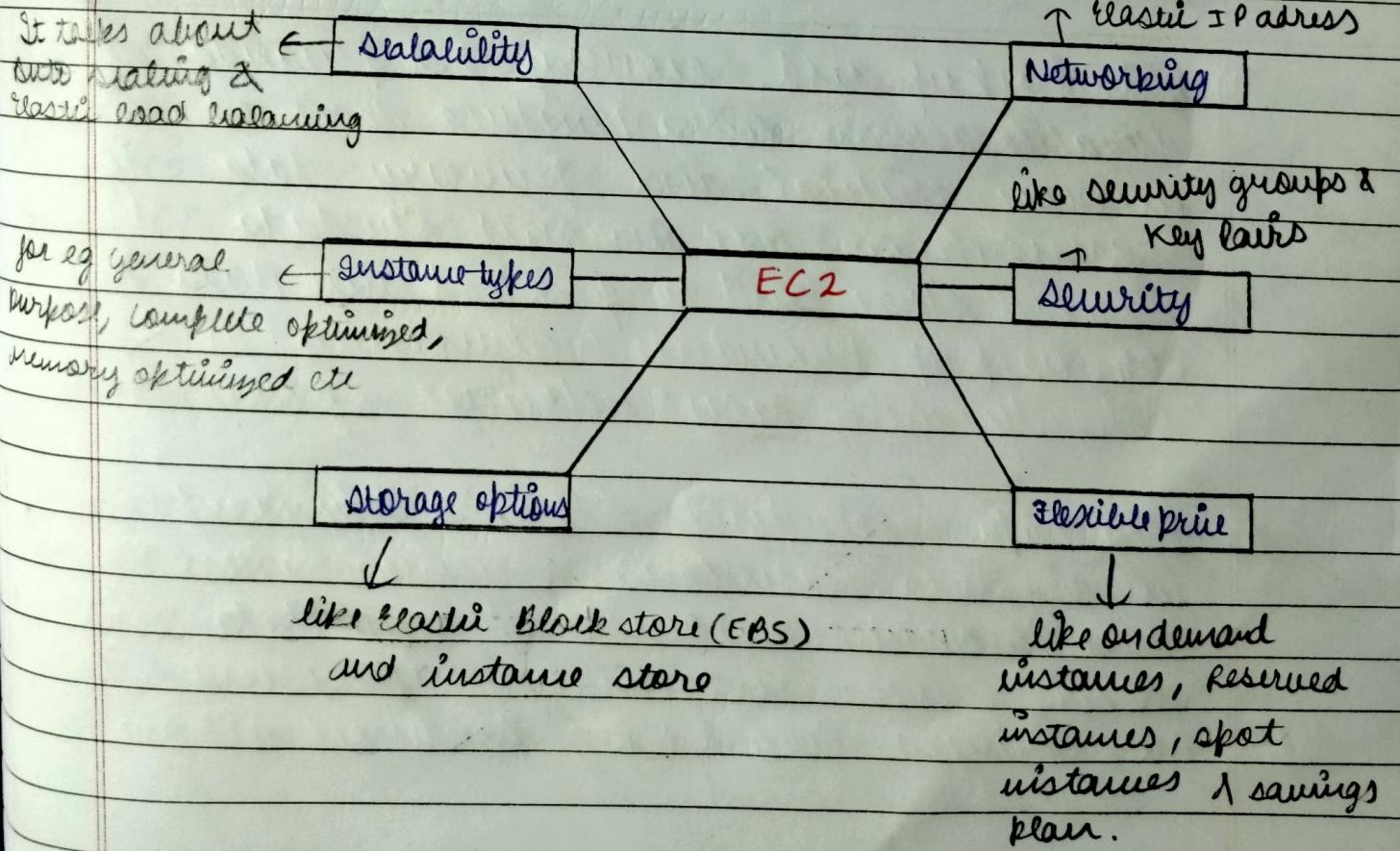
- New services can be provisioned quickly, w/o the upfront fixed expense. This allows enterprises, start-ups, small and medium-sized businesses, and customers in public sector to access the building blocks they need to respond quickly to changing business requirements. This slide provides you with an overview of the benefits of the AWS cloud and introduces you to the services that make up the platform.



① EC2 : It is an abbreviation used for elastic compute cloud. It is a web service that provides resizable compute capacity in the cloud, making web scale cloud computing easier for developers.

- It is designed to enable developers to configure and scale computing capacity with minimal friction. By offering a variety of instance types tailored to different use cases, EC2 provides the flexibility to choose the right mix of resources for our application.

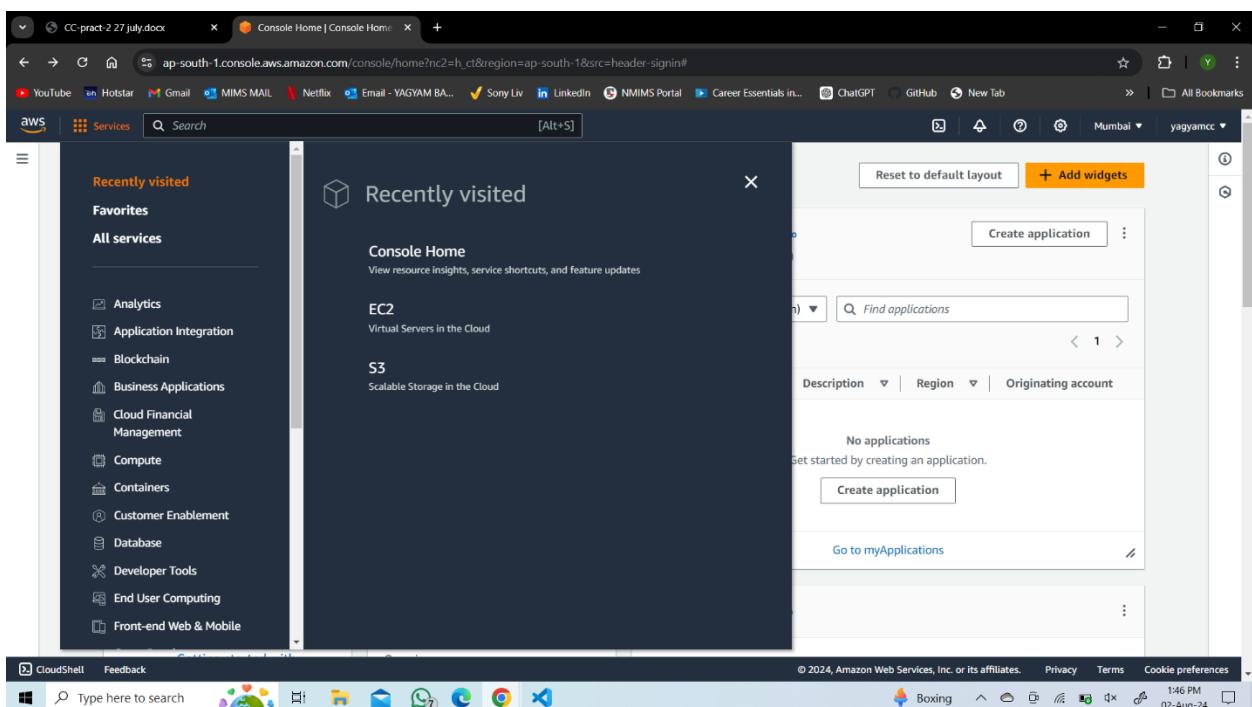
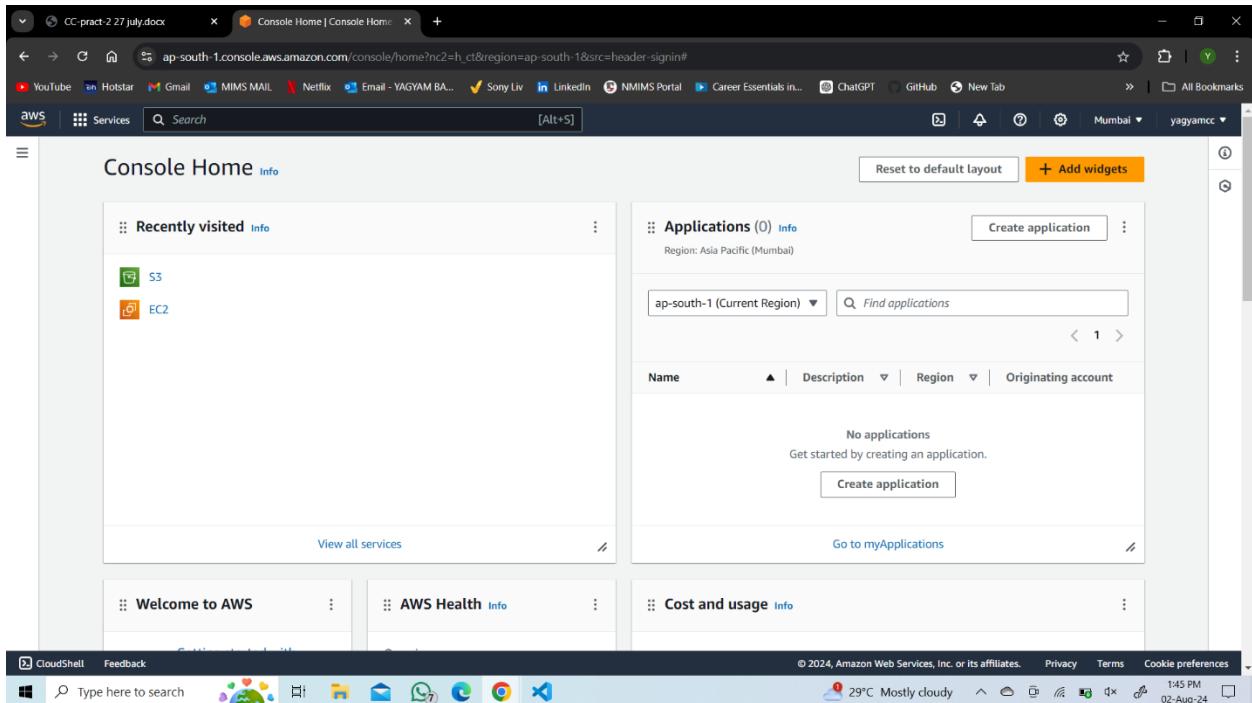
• Key features of EC2 are :



•) It has used cases as :

- 1) Web Applications : Host scalable and resilient applications using EC2, Auto scaling, and elastic load balancing to ensure high availability.
- 2) Machine Learning : Leverage EC2 instances with powerful GPU's for training and deploying ML models.
- 3) High Performance Computing (HPC) : Perform complex simulations, financial modeling or any other compute-intensive tasks using compute-optimized instances.

# BY PEM



The screenshot shows the AWS EC2 Dashboard for the Asia Pacific (Mumbai) Region. The left sidebar includes links for EC2 Global View, Events, Instances, Images, and Elastic Block Store. The main content area displays resource statistics:

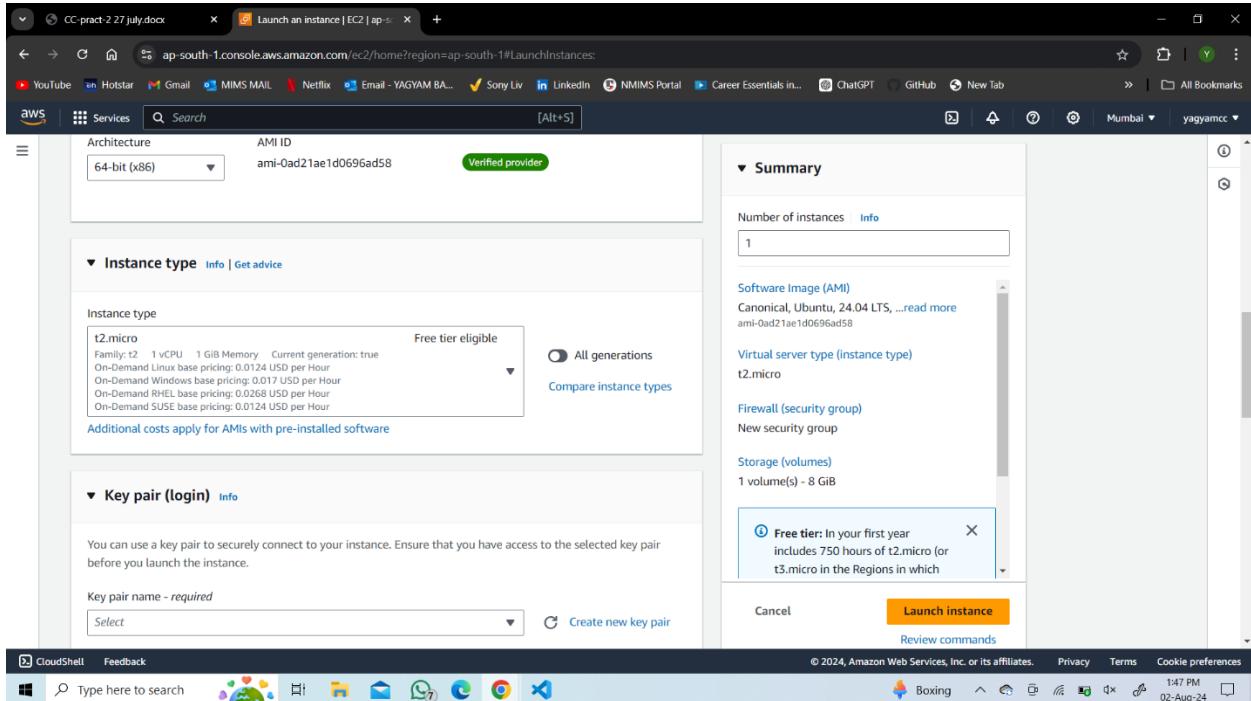
| Instances (running) | 0 | Auto Scaling Groups | 0 | Dedicated Hosts | 0 |
|---------------------|---|---------------------|---|-----------------|---|
| Elastic IPs         | 0 | Instances           | 0 | Key pairs       | 2 |
| Load balancers      | 0 | Placement groups    | 0 | Security groups | 3 |
| Snapshots           | 0 | Volumes             | 0 |                 |   |

On the right, the "EC2 Free Tier" section indicates 0 offers for all AWS Regions. It also shows 0 EC2 free tier offers in use and an end-of-month forecast of 0 offers. A note states that 0 offers exceeded and are now pay-as-you-go pricing.

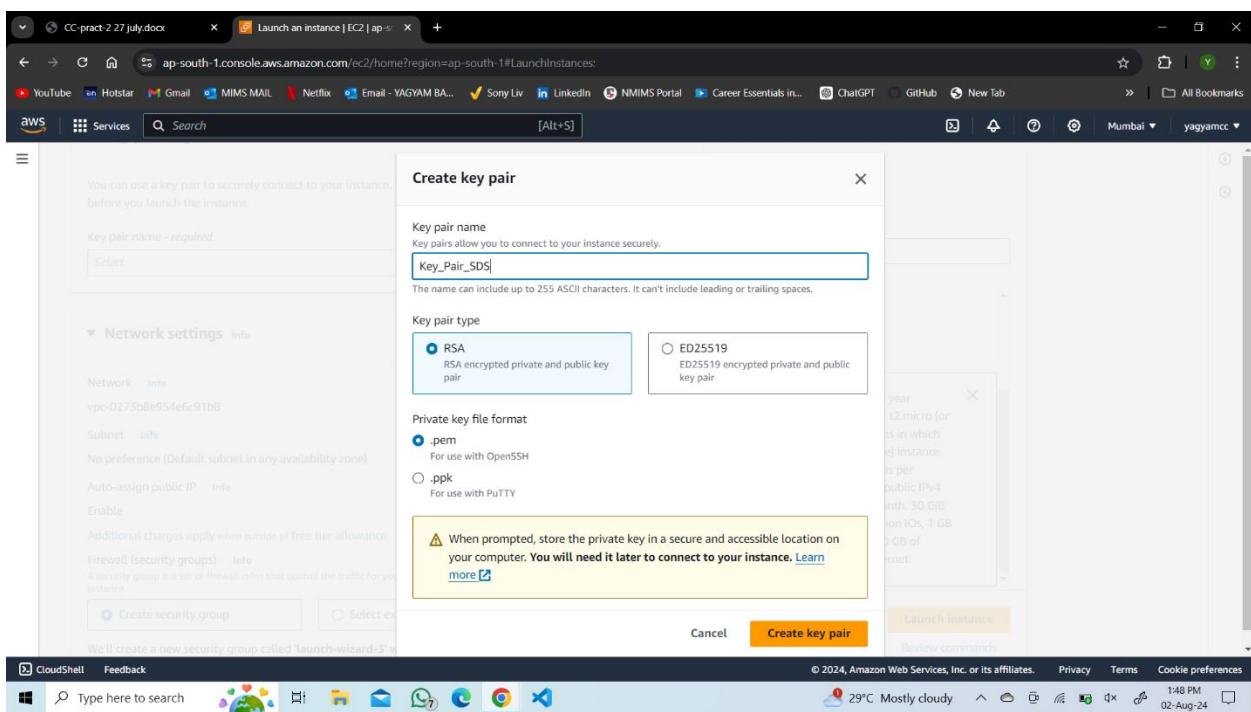
The screenshot shows the "Launch an instance" wizard. The left sidebar shows the navigation path: EC2 > Instances > Launch an instance. The main content area has several tabs:

- Name and tags**: Set the name to "Web\_Server\_SDS".
- Application and OS Images (Amazon Machine Image)**: Search for an AMI.
- Summary**: Shows 1 instance, the selected AMI (Amazon Linux 2023.5.2), the instance type (t2.micro), and a note about the free tier.

A modal window titled "Free tier: In your first year" provides details about the included 750 hours of t2.micro or t3.micro usage. At the bottom right of the summary tab, there are "Cancel", "Launch instance", and "Review commands" buttons.



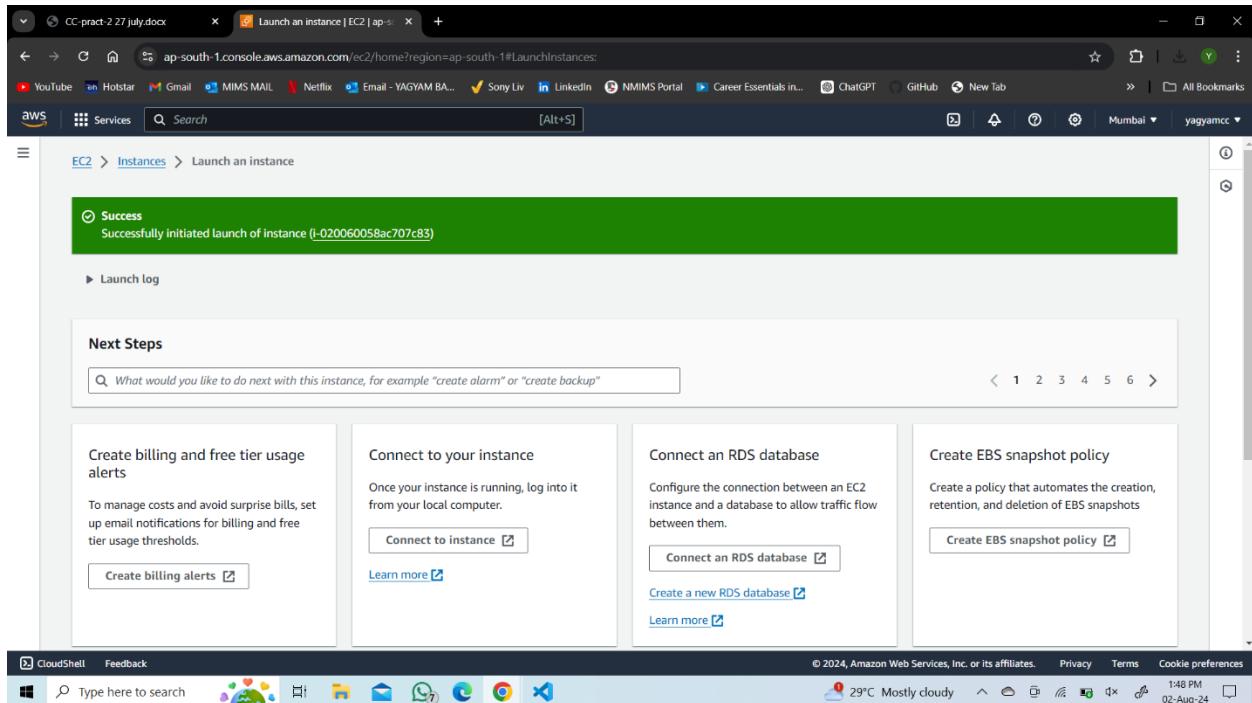
The screenshot shows the AWS EC2 'Launch an instance' wizard. In the 'Summary' section, it indicates 1 instance will be launched using the AMI ID 'ami-0ad21ae1d0696ad58'. The 'Software Image (AMI)' is set to 'Canonical, Ubuntu, 24.04 LTS'. The 'Virtual server type (instance type)' is selected as 't2.micro'. A tooltip for 'Free tier' appears, stating: 'Free tier: In your first year includes 750 hours of t2.micro or t3.micro in the Regions in which you launch the instance.' Other visible sections include 'Architecture' (64-bit (x86)), 'Key pair (login)', and 'Network settings'.



The screenshot shows the 'Create key pair' dialog box. The 'Key pair name' field contains 'Key\_Pair\_SDS'. The 'Key pair type' section has 'RSA' selected. The 'Private key file format' section has '.pem' selected. A tooltip in the bottom right corner says: 'When prompted, store the private key in a secure and accessible location on your computer. You will need it later to connect to your instance.' At the bottom right of the dialog is a 'Create key pair' button.

The screenshot shows the AWS EC2 'Launch an instance' wizard. On the left, under 'Network settings', it lists a VPC (vpc-0273b8e954e6c91b8) and a subnet (No preference). It includes sections for auto-assigning a public IP and creating a security group. A modal window titled 'Free tier' provides information about usage limits for the first year. On the right, the 'Summary' section shows 1 instance being launched with 1 volume (8 GiB). At the bottom, there are 'Cancel' and 'Launch instance' buttons.

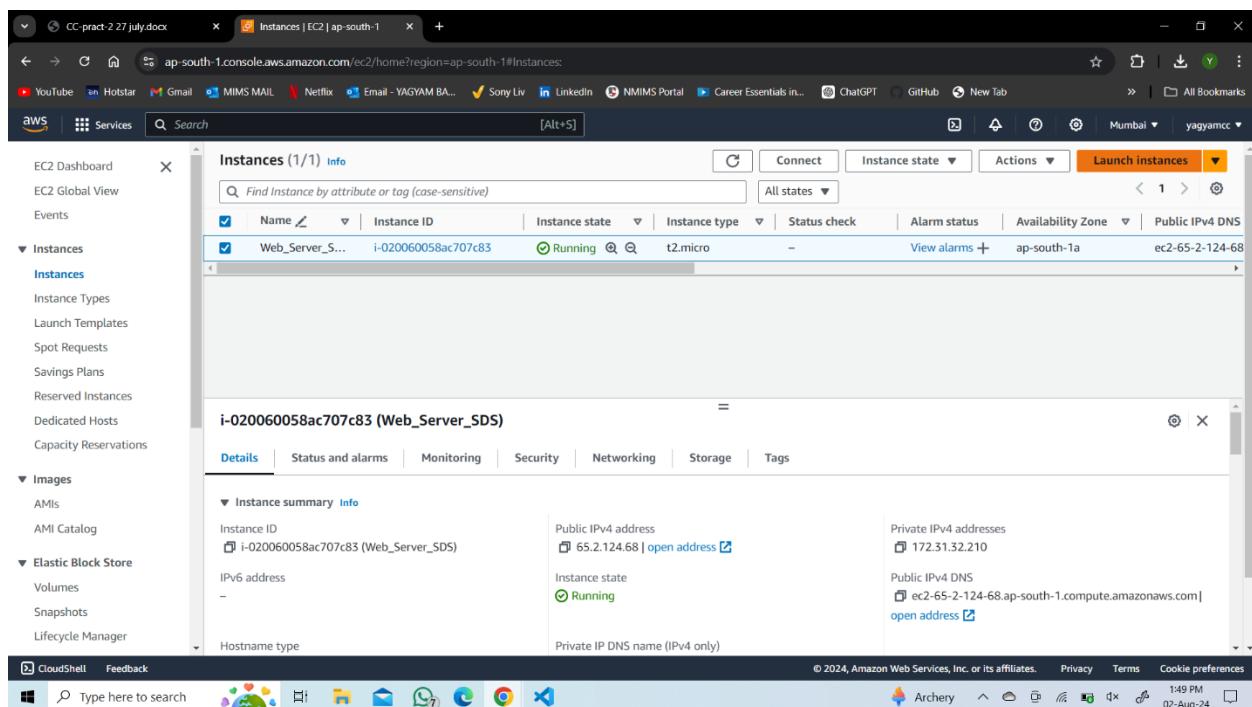
The screenshot shows the 'Connect to instance' page for the instance ID i-020060058ac707c83. It displays a warning message about port 22 being open to all IPv4 addresses. Below this, it shows the instance ID (i-020060058ac707c83), connection type (set to 'Connect using EC2 Instance Connect'), and public IP address (65.2.124.68). The username field contains 'ubuntu'. A note at the bottom states that the default username is typically 'ubuntu'. At the bottom right are 'Cancel' and 'Connect' buttons.



The screenshot shows the AWS EC2 'Launch an instance' page. At the top, there is a green success message: 'Successfully initiated launch of instance (i-020060058ac707c83)'. Below this, there is a 'Next Steps' section with several options:

- Create billing and free tier usage alerts
- Connect to your instance
- Connect an RDS database
- Create EBS snapshot policy

At the bottom of the page, there is a search bar and a navigation menu.



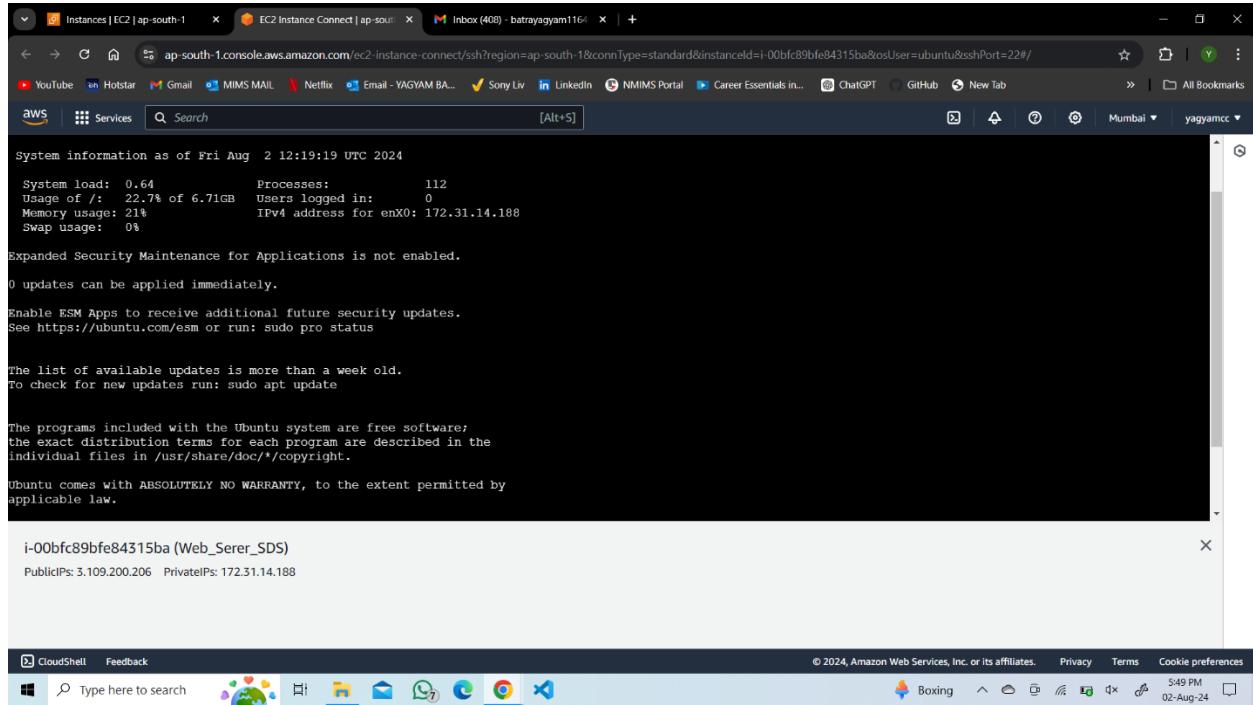
The screenshot shows the AWS EC2 Instances page. On the left, there is a sidebar with various navigation options. The main area displays a table of instances, with one row selected:

| Name            | Instance ID         | Instance state | Instance type | Status check | Alarm status  | Availability Zone | Public IPv4 DNS |
|-----------------|---------------------|----------------|---------------|--------------|---------------|-------------------|-----------------|
| Web_Server_S... | i-020060058ac707c83 | Running        | t2.micro      | -            | View alarms + | ap-south-1a       | ec2-65-2-124-68 |

Below the table, there is a detailed view for the selected instance (i-020060058ac707c83). The 'Details' tab is active, showing the following information:

- Instance ID: i-020060058ac707c83 (Web\_Server\_SDS)
- Public IPv4 address: 65.2.124.68 [open address]
- Private IPv4 addresses: 172.31.32.210
- Public IPv4 DNS: ec2-65-2-124-68.ap-south-1.compute.amazonaws.com [open address]
- Instance state: Running
- Hostname type: Private IP DNS name (IPv4 only)

At the bottom of the page, there is a search bar and a navigation menu.



Instances | EC2 | ap-south-1 | EC2 Instance Connect | ap-south-1 | Inbox (408) - batrayagym116@i-00bf89bfe84315ba | +

ap-south-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=ap-south-1&connType=standard&instanceId=i-00bf89bfe84315ba&osUser=ubuntu&sshPort=22#/

YouTube Hotstar Gmail MIMS MAIL Netflix Email - YAGYAM BA... Sony Liv LinkedIn NMIMS Portal Career Essentials in... ChatGPT GitHub New Tab Mumbai yagymcc

AWS Services Search [Alt+S]

System information as of Fri Aug 2 12:19:19 UTC 2024

```
System load: 0.64 Processes: 112
Usage of /: 22.7% of 6.71GB Users logged in: 0
Memory usage: 21% IPv4 address for enX0: 172.31.14.188
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.

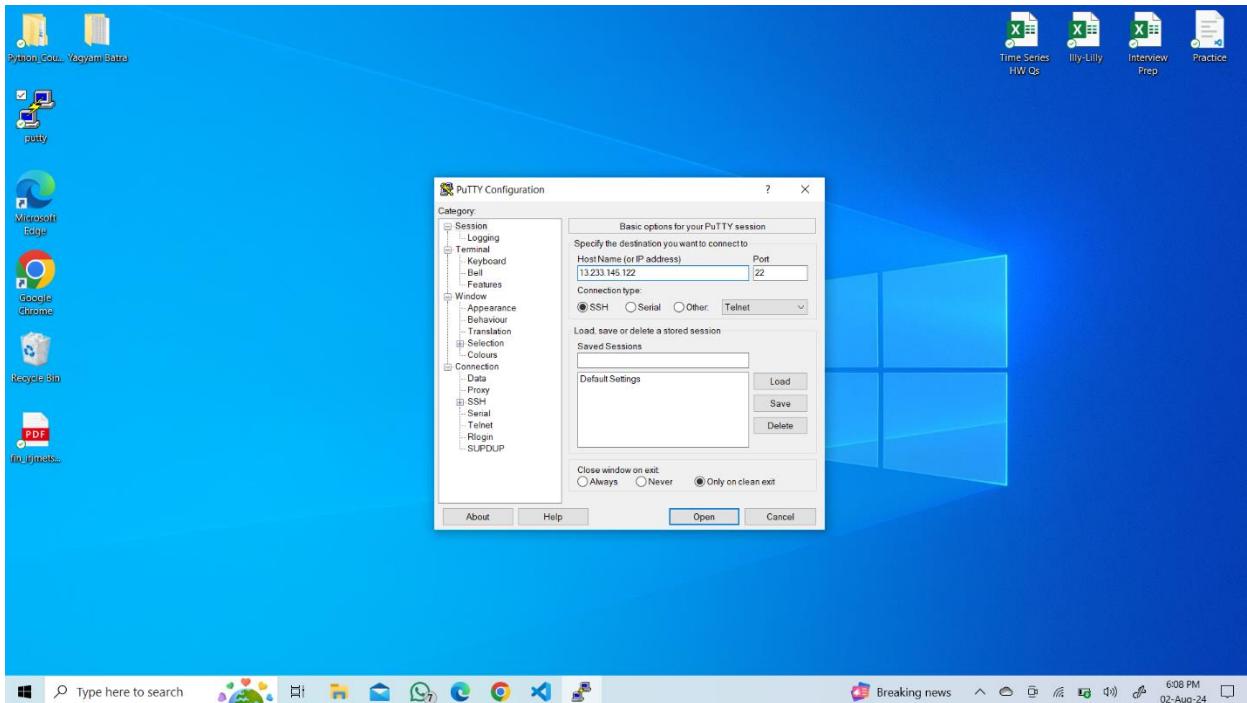
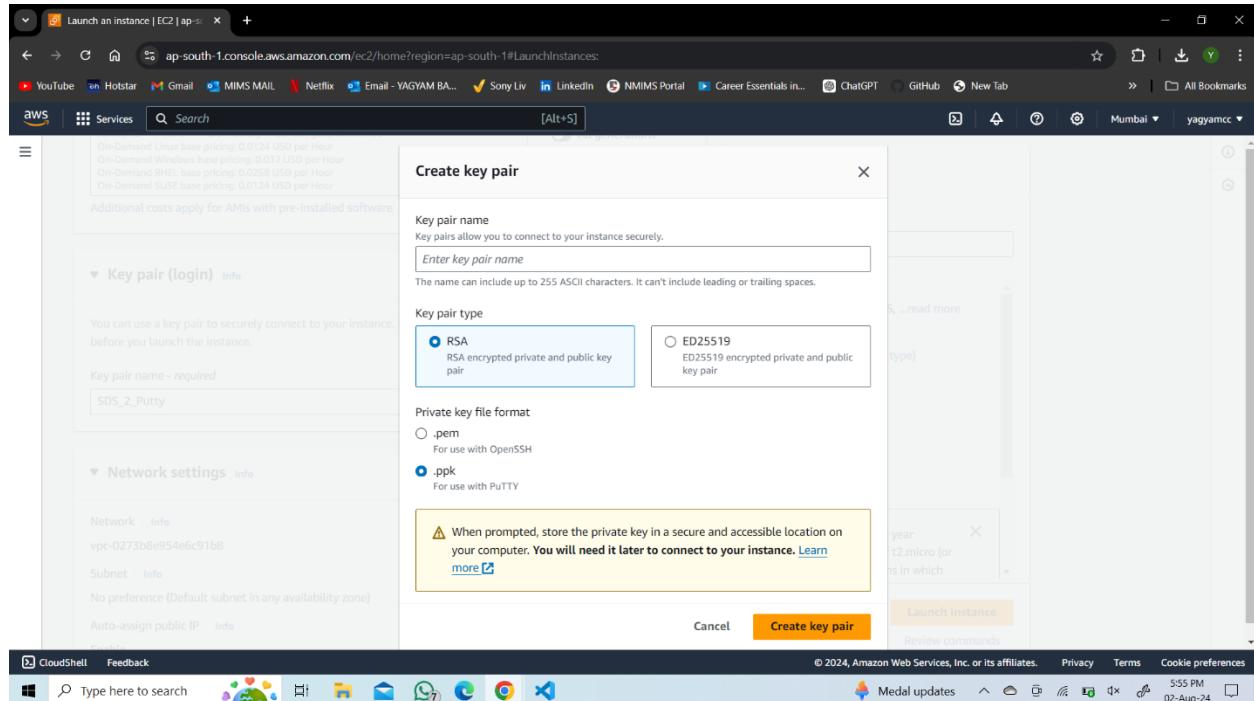
i-00bf89bfe84315ba (Web\_Serer\_SDS)  
PublicIPs: 3.109.200.206 PrivateIPs: 172.31.14.188

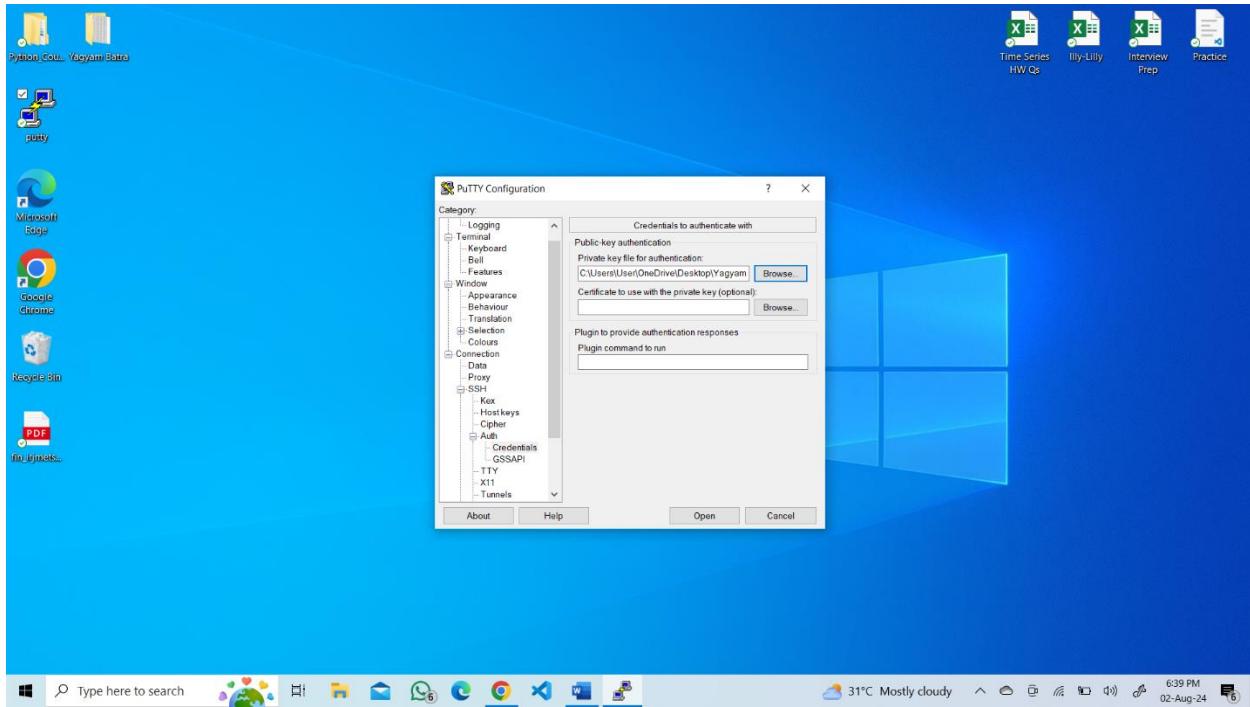
CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

Type here to search

Boxing 5:49 PM 02-Aug-24

# **BY PUTTY**





A screenshot of the AWS Management Console, specifically the EC2 Instances page. The left sidebar shows navigation links for EC2 Dashboard, Global View, Events, Instances (with sub-links for Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations), Images (AMIs, Catalog), and Elastic Block Store (Volumes, Snapshots, Lifecycle Manager). The main content area displays a table titled 'Instances (1/1) Info' with one item: 'Web\_Serer\_ESDS' (Instance ID: i-00bfc89bfe84315ba, State: Running, Type: t2.micro). To the right of the table is a 'Actions' dropdown menu with options: Stop instance (which is highlighted), Start instance, Reboot instance, Hibernate instance, and Terminate instance. The status bar at the bottom shows it's 5:51 PM on 02-Aug-24, with a temperature of 29°C and mostly cloudy weather.