

A MINI PROJECT REPORT
ON
Cloud Computing Project

Submitted in partial fulfillment of the requirement of the University of Mumbai for the
Course

Cloud Computing Lab
In
Computer Engineering (VIII SEM)

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UNIVERSITY OF MUMBAI
Academic Year 2021 - 22

CERTIFICATE

This is to certify that the requirements for the project report entitled '**Cloud Computing Project**' have been successfully completed by the following students:

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in partial fulfillment of the course Cloud Computing Lab in Computer Engineering (VIII SEM) of Mumbai University in the Department of Computer Engineering, A.P. Shah Institute of Technology, Thane – 400615 during the Academic Year 2021 – 22.

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PROJECT APPROVAL

This project entitled “Cloud Computing Project” by Nikita Sarode, Amruta Koshe, Rakshita Tantry, and Nidhi Vanjare is approved for the course Cloud Computing Lab in Computer Engineering (VIII sem) of Mumbai University in the Department of Computer Engineering.

Subject Incharge: Prof. Deepak Khachane

Date:

Place: Thane

Department of Computer Engineering
A. P. Shah Institute of Technology
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DECLARATION

We declare that this written submission for the Cloud Computing Lab mini-project entitled “Cloud Computing Project” represents our ideas in our own words and where others' ideas or words have been included, we have adequately cited and referenced the original sources. We also declare that we have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any ideas/data/fact/source in our submission. We understand that any violation of the above will cause disciplinary action by the institute and also evoke penal action from the sources which have not been properly cited or from whom prior permission has not been taken when needed.

Project Group Members:

Nikita Sarode

Amruta Koshe

Nidhi Vanjare

Rakshita Tantry

Place:Thane

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Abstract

In technical words, a cloud is just a space at the other end of an internet connection where you may access apps and services, as well as securely store your data. A cloud environment requires no work on the part of the user to maintain or operate, and it is virtually endless in size, so there is no need to be concerned about it running out of space. With a simple internet connection, cloud-based applications and services may be accessible from anywhere in the world. The cloud has become so ubiquitous in our daily lives that most people don't even realize it. In fact, many people's lives would be drastically altered if they didn't have access to the cloud. The cloud has changed the business landscape, with millions of businesses around the world using cloud services for everything from document creation and backup to social CRM and account management. Instant scaling, quick deployment, no upfront expenditures, and maintenance-free services with outstanding security are all advantages of cloud computing. Our goal for this project was to deploy an application on the AWS Cloud environment that was not system dependent and could be launched on any device. We used AWS Cloud services like IAM and EC2 Instances in this project. We have created a website that can be used to plan projects effortlessly. This project planner lets users manage their projects with ease so that they can keep a track of their progress. Users can join/create multiple projects at a time and switch easily between the projects. Each project is protected with a username and password. The project layout consists of a dashboard with options to create entries, make to-do lists or assign tasks. This planner provides users with an organized space to effectively plan their projects in a group.

Problem Definition

The cloud makes it simple to access a variety of services that may be used to deploy and maintain a project on a remote server, as well as view the project/application from anywhere with only an internet connection. We have created a Project Planner website that stores and displays user data to keep a track of any project which is helpful for effective project management. Users can record the progress and future scope of their projects that could be either for personal use or for any organization. As a result, we used various cloud services to deploy this project on AWS Cloud.

Introduction

Amazon Web Services (AWS) is the most comprehensive and commonly used cloud platform in the world, with over 200 fully-featured services available from data centers all around the world. AWS provides more services and features than any other cloud provider, ranging from traditional infrastructure technologies like computation, storage, and databases to emerging technologies like machine learning and artificial intelligence, data lakes and analytics, and the Internet of Things. This makes moving your existing apps to the cloud and building practically anything you can imagine quicker, simpler, and more cost-effective.

To develop *Project Planner*, we have researched and worked with different methodologies for data retrieval and storing ways with PHP. This application stores information about projects that users are working on which is deployed on Amazon cloud. In this project, to deploy the application on the cloud we have utilized two services of AWS i.e. EC2 and IAM.

AWS provides these services for users using the Free Tier in AWS but for specific intervals of time, which once exceeded incurs some cost for the utilization of the resources. These services combined helped us to deploy our application in the cloud environment and access it without having to depend on the system on which it was developed.

Project Design Flow

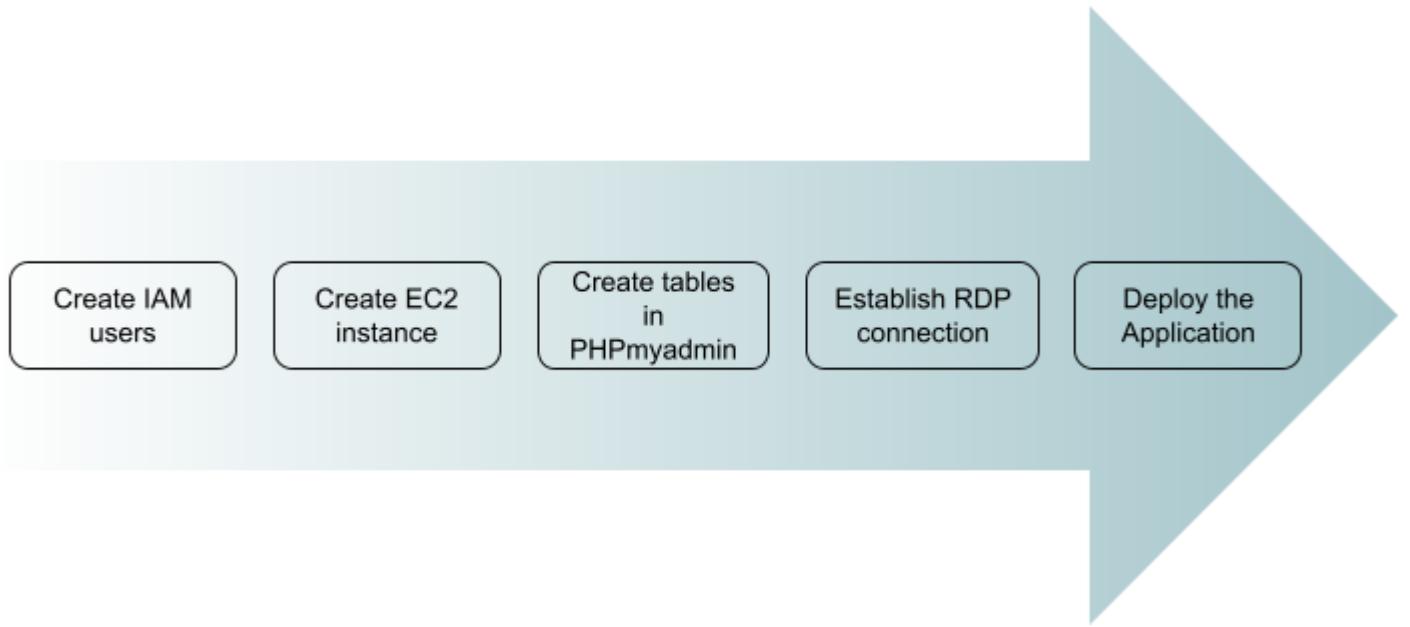


Fig. 1: Flow of Events

Description

The cloud services used in this project have different functionalities which are explained below.

- **EC2 Instance:** With over 500 instances and a choice of the latest processor, storage, networking, operating system, and purchase model, Amazon Elastic Computational Cloud (Amazon EC2) provides the broadest and deepest compute platform available. They are the first major cloud provider to support Intel, AMD, and Arm CPUs, as well as the only cloud that offers on-demand EC2 Mac instances with Ethernet networking at 400 Gbps. They have the lowest cost per inference instance in the cloud, as well as the greatest pricing performance for machine learning training. AWS hosts more SAP, high-performance computing (HPC), machine learning (ML), and Windows applications than any other cloud. Users can use EC2 to get on-demand access to reliable, scalable infrastructure, scale capacity in minutes with a 99.99 percent availability SLA, optimize performance and cost with flexible options like AWS Graviton-based instances, Amazon EC2 Spot instances, and AWS Savings Plans, and provide secure compute for all applications.
- **IAM:** AWS Identity and Access Management (IAM) allows for fine-grained access management throughout the whole AWS infrastructure. You can control who has access to which services and resources, and under what conditions, using IAM. You control permissions to your workforce and systems with IAM policies to ensure the least privilege permissions. IAM is a free service provided by Amazon Web Services. AWS authorization for workforce users and workloads can be managed with IAM. AWS SSO streamlines the provisioning and management of IAM roles and policies throughout your AWS environment. IAM roles and policies can be used to grant only the required access to all workloads for workload

permissions. With IAM, you can establish fine-grained permissions to control who has access to what. The permissions are then enforced by IAM for each request. Access is denied by default, and only when permissions indicate a "Allow" is access permitted. Fine-grained access control, delegation of access via IAM Roles, IAM Access Analyzer, permission guardrails, and attribute-based access control are all elements of IAM.

Literature Survey

- **Cloud Computing: Fundamentals and Research Issues**

Suyel Namasudra,Pinki Roy,Balamurugan Balusamy,2017

In the first part of this paper, a brief discussion of fundamentals of cloud computing are presented. Moreover, all the issues of cloud computing are also discussed in this paper. Finally, future work directions have been identified for the cloud computing environment

- **Implementation of Storage in Virtual Private Cloud using Simple Storage Service on AWS**

Ambika Gupta1 , Anjani Mehta, Lakshya Daver, Priya Banga,2020

The primary objective of this research work is to develop a framework that permits confirmed clients to get access to the sensitive information within the organization. In contrast to the traditional system, the proposed system helps in data recovery if there arise any circumstances, the storage can be expanded by checking the accessibility of users logged into the storage system to access the data.

- **Amazon EC2**

Amazon Elastic Compute Cloud (Amazon EC2) offers the broadest and deepest compute platform, with over 500 instances and choice of the latest processor, storage, networking, operating system, and purchase model to help you best match the needs of your workload. We are the first major cloud provider that supports Intel, AMD, and Arm processors, the only cloud with on-demand EC2 Mac instances, and the only cloud with 400 Gbps Ethernet

networking. We offer the best price-performance for machine learning training, as well as the lowest cost per inference instance in the cloud. More SAP, high performance computing (HPC), ML, and Windows workloads run on AWS than any other cloud.

Implementation

Project github link: <https://github.com/R-A-N-N/ProjectPlanner>

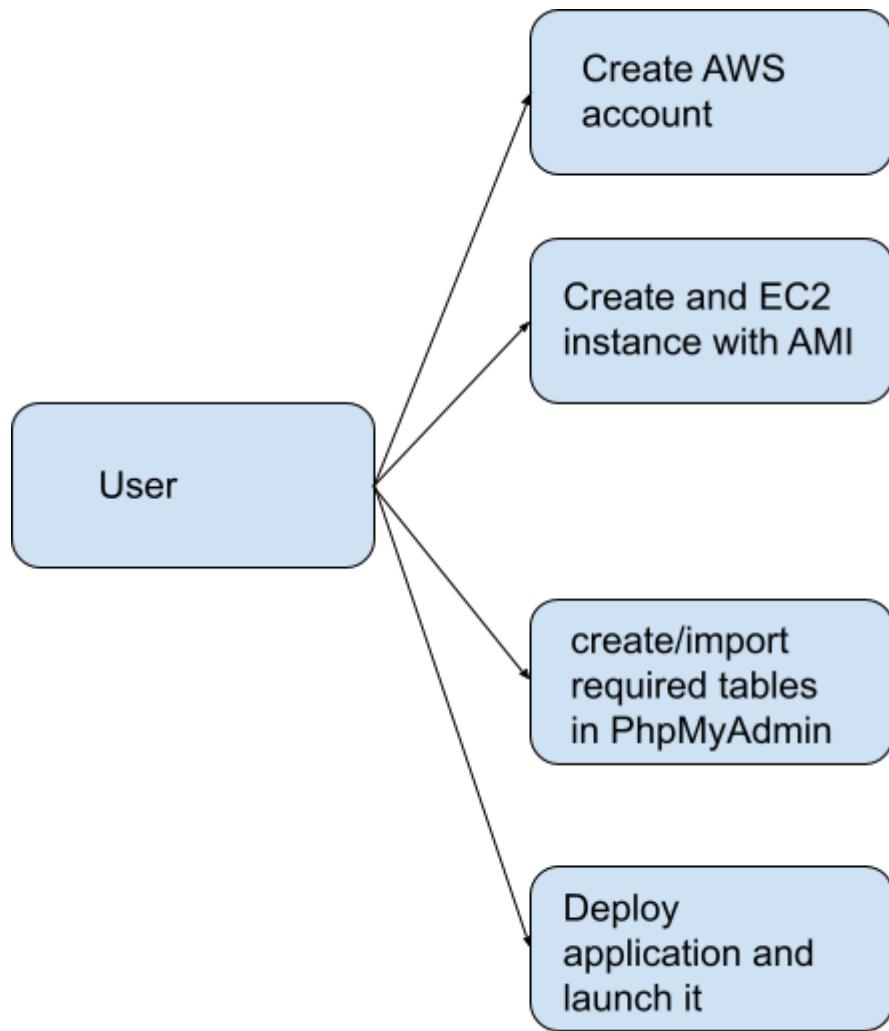


Fig.2 Use-Case Diagram

1. Create a New User via IAM service on the AWS Console named **admin_user**.
 - A. Choose to create an **Access key - Programmatic access** and give the name for the user.
 - B. To Set Permissions select: **AdministratorAccess** and **AmazonDynamoDBFullAccess**.
 - C. Add tags if you wish to and create the user.
 - D. **Download CSV File** of the credentials of Access Key when prompted as it is essential for future steps. In case you forget to save the Secret Access Key then once a user is created, select the User and in the Security Credentials tab, generate a new Access Key and save it.

(Creating an IAM User can help you or maybe your team to access the project on the console without having to share the Root User credentials as every user-created gets a separate set of credentials assigned.)

Add user

Set user details

You can add multiple users at once with the same access type and permissions. [Learn more](#)

User name* Rakamini

[Add another user](#)

Select AWS access type

Select how these users will primarily access AWS. If you choose only programmatic access, it does NOT prevent users from accessing the console using an assumed role. Access keys and autogenerated passwords are provided in the last step. [Learn more](#)

Select AWS credential type*

- Access key - Programmatic access

Enables an access key ID and secret access key for the AWS API, CLI, SDK, and other development tools.
- Password - AWS Management Console access

Enables a password that allows users to sign-in to the AWS Management Console.

Console password*

Autogenerated password
 Custom password

Require password reset
 User must create a new password at next sign-in
 Users automatically get the [IAMUserChangePassword](#) policy to allow them to change their own password.

* Required

Cancel [Next: Permissions](#)

AWS Services Search for services, features, blogs, docs, and more [Option+S] Global ▾ rakamni ▾

Add user

Review

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

User details

User name	Rakamnini
AWS access type	Programmatic access and AWS Management Console access
Console password type	Custom
Require password reset	Yes
Permissions boundary	Permissions boundary is not set

Permissions summary

The user shown above will be added to the following groups.

Type	Name
Managed policy	IAMUserChangePassword

Tags

No tags were added.

Cancel Previous Create user

AWS Services Search for services, features, blogs, docs, and more [Option+S] Global ▾ rakamni ▾

Add user

Success

You successfully created the users shown below. You can view and download user security credentials. You can also email users instructions for signing in to the AWS Management Console. This is the last time these credentials will be available to download. However, you can create new credentials at any time.

Users with AWS Management Console access can sign-in at: <https://947858737303.signin.aws.amazon.com/console>

Download .csv

User	Access key ID	Secret access key	Email login instructions
Rakamnini	AKIA5ZMG1RCL25NL2VZU Show	Send email

Close

The screenshot shows the AWS Identity and Access Management (IAM) service interface. The left sidebar is titled 'Identity and Access Management (IAM)' and contains several navigation options under 'Access management' (User groups, Users, Roles, Policies, Identity providers, Account settings), 'Access reports' (Access analyzer, Archive rules, Analyzers, Settings), and 'Credential report' (Organization activity, Service control policies (SCPs)). The main content area is titled 'Introducing the new Users list experience' with a sub-section 'Users (Selected 1/1) Info'. It describes an IAM user as an identity with long-term credentials used to interact with AWS. A search bar at the top of the list table allows filtering by 'Find users by username or access key'. The table itself has columns for 'User name' (Rakamini), 'Groups' (None), 'Last activity' (Never), 'MFA' (None), 'Password age' (Now), and 'Active key age' (Now). There are buttons for 'Delete' and 'Add users' at the top right of the table.

2. Create an EC2 Instance next. Make the following changes while creating an Instance.

A. Choose AMI: Microsoft Windows Server 2022 Base (in Free Tier)

We are replacing this launch experience with a new launch experience, which we will continue to improve based on your feedback. Opt-in to the new experience by selecting the button on the right and give us feedback. For now you can still opt out once you have tried it.

[Opt-in to the new experience](#)

Step 1: Choose an Amazon Machine Image (AMI)

AMI Type	AMI Name	Description	Select
Windows	Microsoft Windows Server 2019 with SQL Server 2017 Enterprise - ami-074f8e793bb0275ae	Microsoft Windows 2019 Datacenter edition, Microsoft SQL Server 2017 Enterprise. [English] Root device type: ebs Virtualization type: hvm ENA Enabled: Yes	Select 64-bit (x86)
Windows	Microsoft Windows Server 2019 with SQL Server 2019 Standard - ami-04b6926416992413a	Microsoft Windows 2019 Datacenter edition, Microsoft SQL Server 2019 Standard. [English] Root device type: ebs Virtualization type: hvm ENA Enabled: Yes	Select 64-bit (x86)
Windows	Microsoft Windows Server 2019 with SQL Server 2019 Enterprise - ami-0f0f6dd1aec994fb5	Microsoft Windows 2019 Datacenter edition, Microsoft SQL Server 2019 Enterprise. [English] Root device type: ebs Virtualization type: hvm ENA Enabled: Yes	Select 64-bit (x86)
Windows	Microsoft Windows Server 2022 Base - ami-03fe02556b17692cb	Microsoft Windows 2022 Datacenter edition. [English] Root device type: ebs Virtualization type: hvm ENA Enabled: Yes	Select 64-bit (x86)
Amazon Linux	Deep Learning Base AMI (Amazon Linux 2) Version 52.0 - ami-031fa35f082735010	Built with NVIDIA CUDA, cuDNN, NCCL, GPU Drivers, Intel MKL-DNN, Docker, NVIDIA-Docker and EFA support. For a fully managed experience, check: https://aws.amazon.com/sagemaker Root device type: ebs Virtualization type: hvm ENA Enabled: Yes	Select 64-bit (x86)
Windows	Microsoft Windows Server 2016 Base - ami-08aa543413d7bdc57	Microsoft Windows 2016 Datacenter edition. [English] Root device type: ebs Virtualization type: hvm ENA Enabled: Yes	Select 64-bit (x86)
Windows	Deep Learning AMI Habana TensorFlow 2.8.0 SynapseAI 1.3.0 (Ubuntu 20.04) 20220303 - ami-0d0acb47faa127dac	Built with Habana SynapseAI, HPU Driver, Docker and TensorFlow Frameworks. For a fully managed experience, check: https://aws.amazon.com/sagemaker Root device type: ebs Virtualization type: hvm ENA Enabled: Yes	Select 64-bit (x86)

B. Instance Type: t2.micro

Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. [Learn more](#) about instance types and how they can meet your computing needs.

Filter by: All instance families ▾ Current generation ▾ Show/Hide Columns

Currently selected: t2.micro (- ECUs, 1 vCPUs, 2.5 GHz, ~1 GiB memory, EBS only)									
Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support		
t2	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes		
<input checked="" type="checkbox"/> t2	<input checked="" type="checkbox"/> t2.micro <small>Free tier eligible</small>	1	1	EBS only	-	Low to Moderate	Yes		
t2	t2.small	1	2	EBS only	-	Low to Moderate	Yes		
t2	t2.medium	2	4	EBS only	-	Low to Moderate	Yes		
t2	t2.large	2	8	EBS only	-	Low to Moderate	Yes		
t2	t2.xlarge	4	16	EBS only	-	Moderate	Yes		
t2	t2.2xlarge	8	32	EBS only	-	Moderate	Yes		
t3	t3.nano	2	0.5	EBS only	Yes	Up to 5 Gigabit	Yes		
t3	t3.micro	2	1	EBS only	Yes	Up to 5 Gigabit	Yes		
t3	t3.small	2	2	EBS only	Yes	Up to 5 Gigabit	Yes		
t3	t3.medium	2	4	EBS only	Yes	Up to 5 Gigabit	Yes		
t3	t3.large	2	8	EBS only	Yes	Up to 5 Gigabit	Yes		
t3	t3.xlarge	4	16	EBS only	Yes	Up to 5 Gigabit	Yes		
t3	t3.2xlarge	8	32	EBS only	Yes	Up to 5 Gigabit	Yes		
t3a	t3a.nano	2	0.5	EBS only	Yes	Up to 5 Gigabit	Yes		
t3a	t3a.micro	2	1	EBS only	Yes	Up to 5 Gigabit	Yes		

[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Configure Instance Details](#)

C. No change in Instance Details.

Step 3: Configure Instance Details

Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot instances to take advantage of the lower pricing, assign an access management role to the instance, and more.

Number of instances	1	Launch into Auto Scaling Group
Purchasing option	<input type="checkbox"/> Request Spot instances	
Network	vpc-0c66429fe21ebf980 (default)	<input type="checkbox"/> Create new VPC
Subnet	No preference (default subnet in any Availability Zone)	<input type="checkbox"/> Create new subnet
Auto-assign Public IP	<input type="checkbox"/> Use subnet setting (Enable)	
Hostname type	<input type="checkbox"/> Use subnet setting (IP name)	
DNS Hostname	<input checked="" type="checkbox"/> Enable IP name IPv4 (A record) DNS requests <input checked="" type="checkbox"/> Enable resource-based IPv4 (A record) DNS requests <input type="checkbox"/> Enable resource-based IPv6 (AAAA record) DNS requests	
Placement group	<input type="checkbox"/> Add instance to placement group	
Capacity Reservation	Open	
Domain join directory	No directory	<input type="checkbox"/> Create new directory
IAM role	None	<input type="checkbox"/> Create new IAM role
Shutdown behavior	Stop	
Stop - Hibernate behavior	<input type="checkbox"/> Enable hibernation as an additional stop behavior	
Enable termination protection	<input type="checkbox"/> Protect against accidental termination	
Monitoring	<input type="checkbox"/> Enable CloudWatch detailed monitoring Additional charges apply.	
Tenancy	Shared - Run a shared hardware instance	<small>Additional charges will apply for dedicated tenancy.</small>
Elastic Graphics	<input type="checkbox"/> Add Graphics Acceleration Additional charges apply.	
Credit specification	<input type="checkbox"/> Unlimited	

[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Add Storage](#)

D. No change is Storage. Assigned storage is sufficient.

Step 4: Add Storage

Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and instance store volumes to your instance, or edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes. [Learn more](#) about storage options in Amazon EC2.

Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput (MB/s)	Delete on Termination	Encryption
Root	/dev/sda1	snap-00d43e70463d357cb	30	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	<input type="button" value="Not Encrypted"/>

[Add New Volume](#)

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. [Learn more](#) about free usage tier eligibility and usage restrictions.

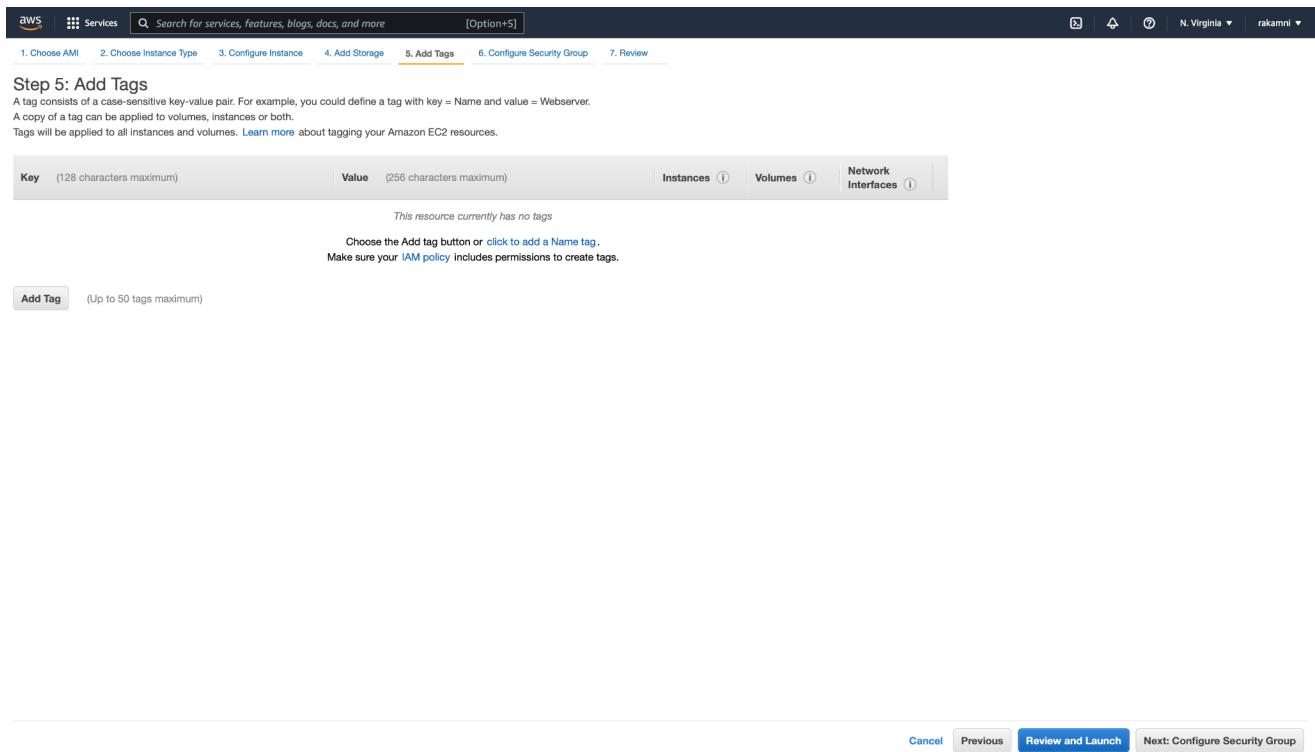
Shared file systems

You currently don't have any file systems on this instance. Select "Add file system" button below to add a file system.

[Add file system](#)

[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Add Tags](#)

E. Add a tag: No change



F. Value: instance_1 (name of the instance you want)

G. Security Group Configuration: Add Rules: Custom TCP protocol and set port number to 8080.

Add HTTP and HTTPS rules as well.

Step 6: Configure Security Group

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. [Learn more](#) about Amazon EC2 security groups.

Assign a security group:

- Create a new security group
- Select an existing security group

Security group name: launch-wizard-2

Description: launch-wizard-2 created 2022-04-21T00:20:46.820+05:30

Type	Protocol	Port Range	Source	Description
RDP	TCP	3389	Anywhere	e.g. SSH for Admin Desktop
HTTP	TCP	80	Anywhere	e.g. SSH for Admin Desktop
HTTPS	TCP	443	Anywhere	e.g. SSH for Admin Desktop

Add Rule

Warning
Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

[Cancel](#) [Previous](#) [Review and Launch](#)

- H. When asked for Key Pair, select Create a new Key Pair. Name the Key Pair and create. A .pem file will be downloaded. Know the location of this file for further use.
- I. Launch the instance

Step 7: Review Instance Launch

Please review your instance launch details. You can go back to edit changes for each section. Click **Launch** to assign a key pair to your instance and complete the launch process.

AMI Details

Microsoft Windows Server 2022 Base - ami-03fe02556b17692cb

Free tier eligible Microsoft Windows 2022 Datacenter edition. [English]
Root Device Type: ebs Virtualization type: hvm

If you plan to use this AMI for an application that benefits from Microsoft License Mobility, fill out the [License Mobility Form](#). Don't show me this again

Instance Type

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
t2.micro	-	1	1	EBS only	-	Low to Moderate

Security Groups

Security group name launch-wizard-2
Description launch-wizard-2 created 2022-04-21T00:20:46.820+05:30

Type	Protocol	Port Range	Source	Description
RDP	TCP	3389	0.0.0.0/0	
RDP	TCP	3389	::/0	
HTTP	TCP	80	0.0.0.0/0	
HTTP	TCP	80	::/0	
HTTPS	TCP	443	0.0.0.0/0	
HTTPS	TCP	443	::/0	

Instance Details

[Edit instance details](#)

[Cancel](#) [Previous](#) [Launch](#)

Launch Status

Your instances are now launching
The following instance launches have been initiated: i-07a3ef35475b3f04d [View launch log](#)

Get notified of estimated charges
Create [billing alerts](#) to get an email notification when estimated charges on your AWS bill exceed an amount you define (for example, if you exceed the free usage tier).

How to connect to your instances

Your instances are launching, and it may take a few minutes until they are in the **running** state, when they will be ready for you to use. Usage hours on your new instances will start immediately and continue to accrue until you stop or terminate your instances. Click [View Instances](#) to monitor your instances' status. Once your instances are in the **running** state, you can [connect](#) to them from the Instances screen. [Find out](#) how to connect to your instances.

Here are some helpful resources to get you started

- [How to connect to your Windows instance](#)
- [Learn about AWS Free Usage Tier](#)
- [Amazon EC2: User Guide](#)
- [Amazon EC2: Microsoft Windows Guide](#)
- [Amazon EC2: Discussion Forum](#)

While your instances are launching you can also

- [Create status check alarms](#) to be notified when these instances fail status checks. (Additional charges may apply)
- [Create and attach additional EBS volumes](#) (Additional charges may apply)
- [Manage security groups](#)

[View Instances](#)

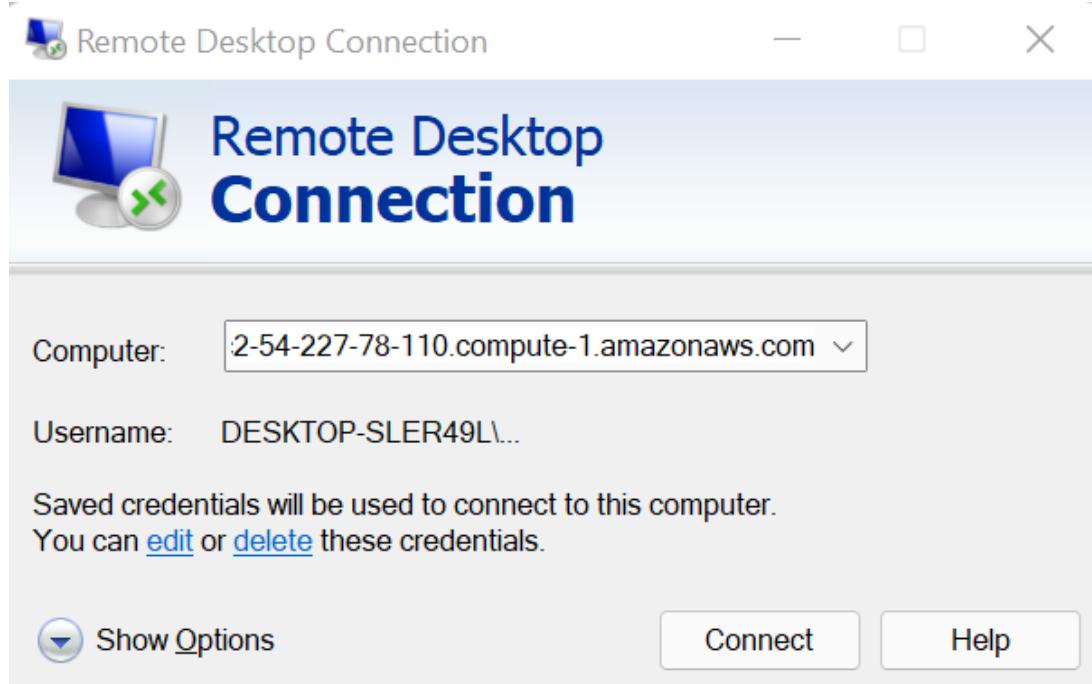
J. Go to EC2>>Instances and wait for the Instance State to display Running and Status Check to

display 2/2 checks passed before proceeding.

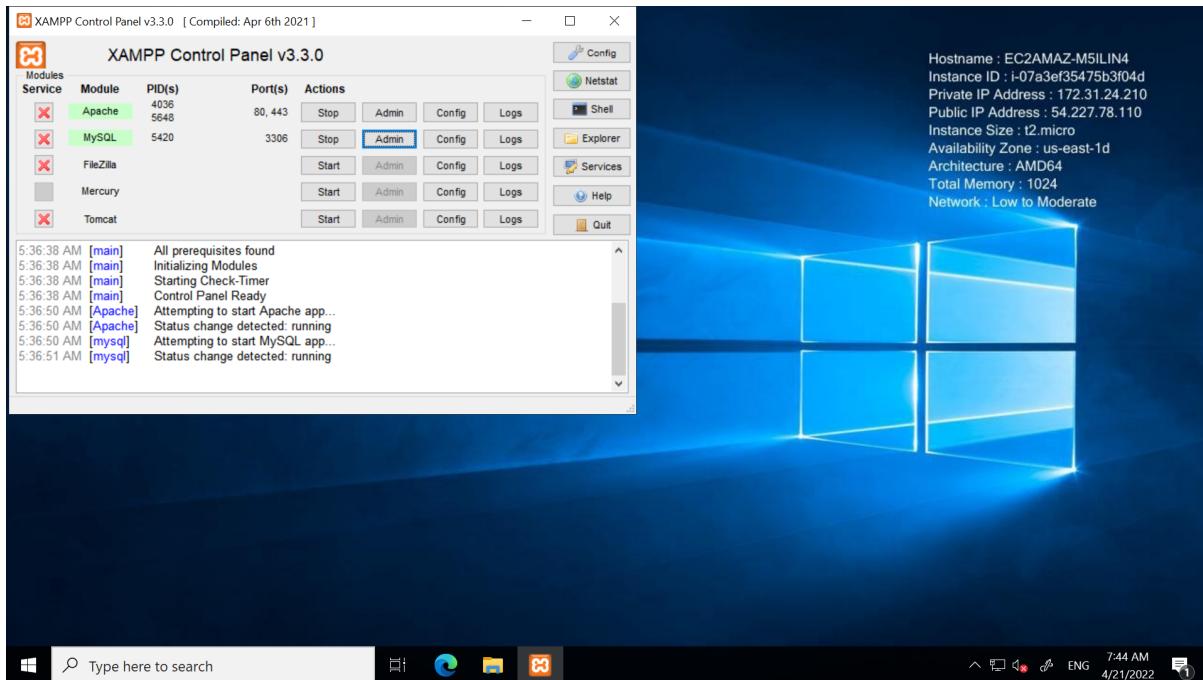
The screenshot shows the AWS EC2 Instances page. On the left, there's a sidebar with navigation links like EC2 Dashboard, Events, Tags, Limits, Instances (selected), Images, Elastic Block Store, Network & Security, and Load Balancing. The main content area has a search bar and a table of instances. One instance is selected: i-07a3ef35475b3f04d, which is running, t2.micro, in us-east-1d, with a Public IPv4 of 54.227.78.110. Below the table, there's a detailed view for the selected instance, showing its configuration across various tabs: Details, Security, Networking, Storage, Status Checks, Monitoring, and Tags. The Details tab is active, showing fields like Instance ID, IP address, Instance type, VPC ID, Subnet ID, Platform, and AMI ID.

3. Create RDP Connect.

- A. Select the instance you created and click on Connect in top panel.
- B. Navigate to the RDP Client section.
- C. Click on Download remote desktop file and a .rdp file will be downloaded.
- D. In the password section, click on Get Password.
- E. Here, browse and select the Key Pair file we downloaded in the previous step in .pem format.
Click on Decrypt Password. You will be redirected to the previous page and will see the password.



- F. Open the .rdp file now. Click on Connect in the pop-up. You will be asked to enter a password for the Administrator user. Copy the Decrypted password from the console and paste in the dialogue box and connect to the RDP client. Click on Yes if another pop-up appears.
- G. As we have chosen Windows AMI, a VM will open up with Windows OS. Wait till you see the instance details on the Desktop of this VM before moving further. Select Refresh by right-clicking in the VM if you don't see the details in the top right corner.
- H. RDP Connection is now established.
- I. To run this project, install Python and/or Xampp if you wish to check the SQL connectivity. You open the Apache and MySQL connection on Xampp, create a database by the name of text_summarizer in phpMyAdmin and import the .sql file.



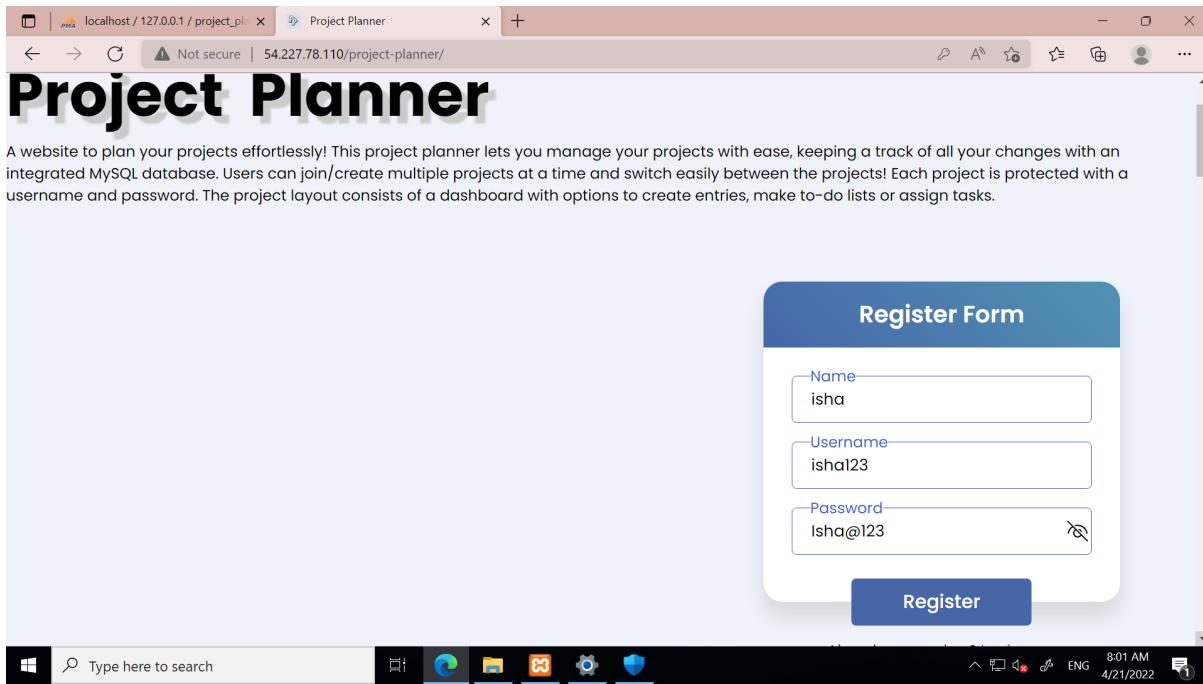
4. Connecting to the database in phpMyAdmin

- Install xampp on your system. After completion of installation, you can use the XAMPP control panel to start/stop the servers.
- start MySQL and apache servers
- Copy the folder of files to htdocs (C:/Program Files/XAMPP/htdocs)
- You can also create any folders inside the htdocs folder and save our codes over there.
- In order to get the dashboard for localhost: search <http://localhost> in any browser.
- Open <http://localhost/phpmyadmin> in the web browser to open the phpMyAdmin interface.
- Create a database named *project_planner*. Inside this database import the *project_planner.sql* file to import all the tables required for this project.

Table	Action	Rows	Type	Collation	Size	Overhead
entries	Browse Structure Search Insert Empty Drop	3	InnoDB	utf8_general_ci	16.0 KiB	-
entry	Browse Structure Search Insert Empty Drop	2	InnoDB	utf8mb4_general_ci	16.0 KiB	-
member_table	Browse Structure Search Insert Empty Drop	12	InnoDB	utf8_general_ci	16.0 KiB	-
member_task	Browse Structure Search Insert Empty Drop	1	InnoDB	utf8_general_ci	48.0 KiB	-
project_table	Browse Structure Search Insert Empty Drop	6	InnoDB	utf8_general_ci	16.0 KiB	-
todolist	Browse Structure Search Insert Empty Drop	0	InnoDB	utf8_general_ci	32.0 KiB	-
user_table	Browse Structure Search Insert Empty Drop	1	InnoDB	utf8mb4_general_ci	32.0 KiB	-
7 tables	Sum				176.0 KiB	0 B

5. Launching the project in the instance.

- A. Download the zip file of the project and copy it on the Desktop in the VM Instance. Extract the file in C:/xampp/htdocs location.
- B. To run the application, open a web browser and go to *public_ip_address/Project_Planner*.
- C. Now you can use the given system to store project progress, add to-do lists, assign tasks to members, add entries and retrieve this data when needed across any device using the given public ip address.



User registration

A screenshot of the phpMyAdmin interface. The left sidebar shows the database structure with the 'user_table' under the 'project_planner' schema. The main panel displays the 'user_table' data with one row: id=7, name=isha, uname=isha123, upass=Isha@123. The SQL query used to fetch this data is shown in the top left: 'SELECT * FROM `user_table`'.

	id	name	uname	upass
	7	isha	isha123	Isha@123

Value added to user_table

The screenshot shows a web browser window for the 'Project Planner' application. The URL is 54.227.78.110/project-planner/folder/project-form.php. The page has a sidebar on the left with 'HOME' and 'LOGOUT' links. The main area contains a form with fields for 'Project Name' (ccl) and 'Project Password' (Ccl@123). A large blue button labeled 'CREATE' is at the bottom right of the form. The status bar at the bottom shows 'Made with ❤ by Nikita & Amruta'.

Create a new project

The screenshot shows the 'phpMyAdmin' interface connected to 'Server: 127.0.0.1'. The database 'project_planner' is selected, and the table 'project_table' is viewed. The table structure includes columns 'id', 'pname', and 'ppass'. The data grid shows the following rows:

	Edit	Copy	Delete	id	pname	ppass
<input type="checkbox"/>	Edit	Copy	Delete	1	Website	654321
<input type="checkbox"/>	Edit	Copy	Delete	2	nikiiss	nikis
<input type="checkbox"/>	Edit	Copy	Delete	3	website-2	1457896
<input type="checkbox"/>	Edit	Copy	Delete	4	android	142536
<input type="checkbox"/>	Edit	Copy	Delete	5	blockchain	17894561
<input type="checkbox"/>	Edit	Copy	Delete	18	ccl	Ccl@123

Project_table is updated with new value

The screenshot shows a web-based project management application titled "Project Planner". On the left, a sidebar menu includes "Home", "ccl", and "LOGOUT". The main content area has tabs for "To do list", "Tasks", and "Entries", with "To do list" selected. A search bar at the top says "Add entry...". Below it, there's a list of items with checkboxes:

- create UI
- Add database

A blue "UPDATE" button is at the bottom right of the list.

Added entries to the to-do list

The screenshot shows the "phpMyAdmin" interface connected to a MySQL database named "project_planner". The left sidebar lists databases and tables, including "entries", "entry", "member_table", "member_task", "project_table", "todolist", and "user_table". The "entries" table is selected, showing the following data:

pid	mid	insertentry	checked
7	2	Add demo	1
18	7	create UI	0
18	7	Add database	0

Updated database

Project Planner

HOME

ccl

LOGOUT

Made with ❤ by Nikita & Amruta

localhost / 127.0.0.1 / project_planner | Dashboard | Project Planner | +

Not secure | 54.227.78.110/project-planner/folder/tasks.php

To do list Tasks Entries

Task Member

save data isha123

Enter Task

Select Member

ASSIGN TASK

Assign tasks to members

localhost / 127.0.0.1 / project_planner | Dashboard | Project Planner | +

localhost/phpmyadmin/index.php?route=/sql&server=1&db=project_planner&table=member_task&pos=0

phpMyAdmin

Recent | Favorites

information_schema
mysql
performance_schema
phpmyadmin
project_planner
New
entries
entry
member_table
member_task
project_table
todolist
user_table
test

Server: 127.0.0.1 » Database: project_planner » Table: member_task

Browse Structure SQL Search Insert Export Import Privileges Operations Tracking More

Current selection does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are not available.

Showing rows 0 - 0 (1 total, Query took 0.0015 seconds.)

SELECT * FROM `member_task`

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all Number of rows: 25 Filter rows: Search this table

+ Options

pid	mid	mtask
18	7	save data

Show all Number of rows: 25 Filter rows: Search this table

Query results operations

Print Copy to clipboard Export Display chart Create view

Bookmark this SQL query

Label Console Let every user access this bookmark

Entries are added to member_task

localhost / 127.0.0.1 / project_pl X Dashboard | Project Planner +

Not secure | 54.227.78.110/Project-Planner/folder/entries.php

Project Planner

HOME

ccl

LOGOUT

Made with ❤ by Nikita & Amruta

CCL PROJECT

SUBMIT

Added entries

localhost / 127.0.0.1 / project_pl X Dashboard | Project Planner +

localhost/phpmyadmin/index.php?route=/sql&server=1&db=project_planner&table=entry&pos=0

phpMyAdmin

Recent Favorites

New

information_schema

mysql

performance_schema

phpmyadmin

project_planner

New

entries

entry

member_table

member_task

project_table

todo_list

user_table

test

Server: 127.0.0.1 » Database: project_planner » Table: entry

Browse Structure SQL Search Insert Export Import Privileges Operations Tracking More

Showing rows 0 - 1 (total, Query took 0.00007 seconds.)

SELECT * FROM `entry`

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all Number of rows: 25 Filter rows: Search this table Sort by key: None

+ Options

pid content

7 <table border="1" cellpadding="1" cellspacing="1" ...

18 <p><big>CCL PROJECT</big></p>

Check all With selected: Edit Copy Delete Export

Show all Number of rows: 25 Filter rows: Search this table Sort by key: None

Query results operations

Print Copy to clipboard Export Display chart Create view

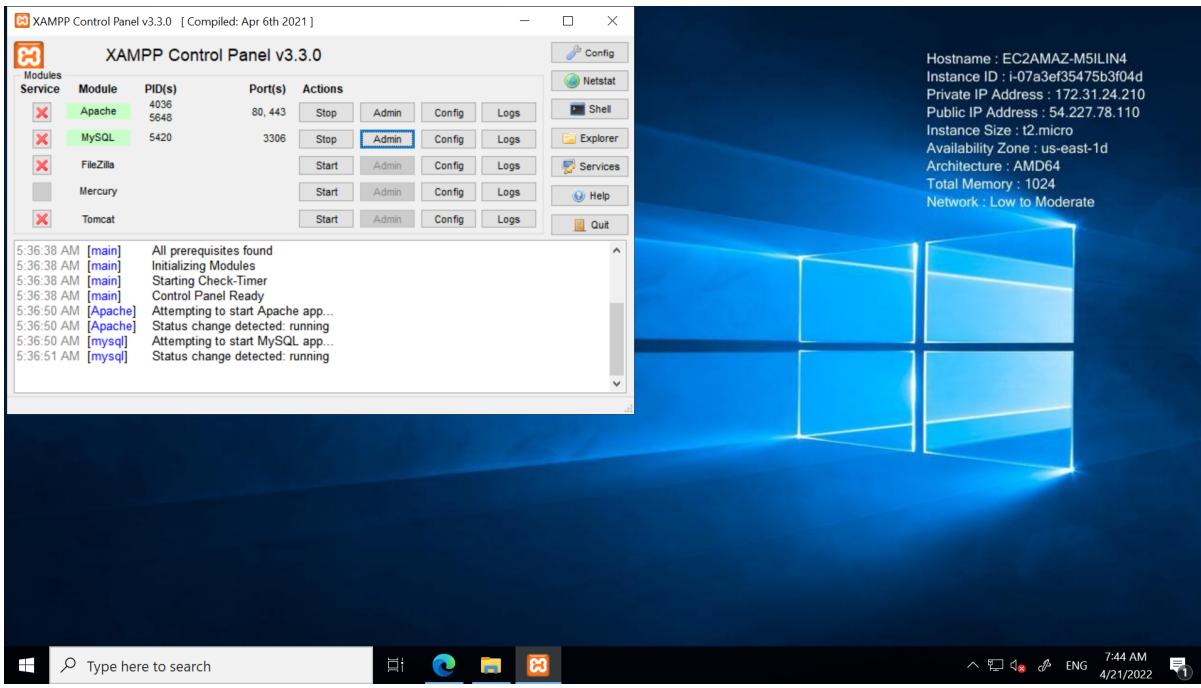
Bookmark this SQL query

Console

Type here to search

8:15 AM 4/21/2022

Database is updated



xampp control in RDC

Conclusion

We learned how to implement Cloud Computing principles such as Storage as a Service and Software as a Service through this project. Software as a service (SaaS) is a method of delivering software as a service through the Internet. Instead of installing and maintaining software, you simply use the Internet to access it, eliminating the need for complicated software and device maintenance. Web-based software, on-demand software, and hosted software are all terms used to describe SaaS applications. STaaS, or Storage as a Service, is cloud storage that you rent from a Cloud Service Provider (CSP) and that comes with basic access. The cloud can be used for multimedia storage, data repositories, data backup and recovery by enterprises, small and medium organizations, home offices, and individuals.

Learning Outcomes

The primary goal of this project was to learn about cloud computing techniques and put them into practice through a project. During the course of this project's development, we learnt how to use the AWS Cloud console to access AWS' multiple services. We researched, implemented, and utilized cloud services to study and implement the following concepts: Software as a Service, Storage as a Service, EC2, IAM.

References

- <https://aws.amazon.com/ec2/>
- <https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/Introduction.html>
- <https://aws.amazon.com/websites/>
- <https://www.signitysolutions.com/blog/register-host-and-deploy-website-on-aws/>
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Acknowledgement

We have deployed our website on AWS Cloud with help of guidelines provided by the AWS Account. This was possible only by the support of our subject in charge and our department to whom we express our gratitude.