A Project Report on

Online Quiz Game

Submitted in partial fulfillment of the requirements for the award of the degree of

Bachelor of Engineering

in

Computer Engineering

by

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Approval Sheet

This Project Report entitled ***"Online Quiz Game"*** Submitted by ***"Mansi Shah"(18102002),"ApoorvaTalesara"(18102027),"Zoha Shaikh"(19202006),"Isha Phadkar"(18102060)***is approved for the partial fulfillment of the requirement for the award of the degree of ***Bach*elor** of Engineering in Computer Engineering from University of Mumbai.

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Date:

CERTIFICATE

This is to certify that the project entitled ***"Online Quiz Game"*** submitted by ***"Mansi Shah" (18102002),"Apoorva Talesara" (18102027),"Zoha Shaikh" (19202006),"Isha Phadkar" (18102060)*** for the partial fulfillment of the requirement for award of a degree ***Bachelor of Engineering*** in ***Computer Engineering*** ,to the University of Mumbai,is a bonafide work carried out during academic year 2021-2022.

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Acknowledgement

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Declaration

We declare that this written submission 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 idea/data/fact/source in our submission. We understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

——————————————————

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Chapter 1

Introduction

A quiz is a type of game or a sport in which players strive to properly answer the given questions about a specific or a variety of topics. The concept of quizzes is currently very popular among educated circles as well as in entertainment shows. Though the quiz can be conducted manually, it often needs elaborate preparations. Quizzes contribute to the growth of knowledge of an individual and they are a popular source of entertainment

Chapter 2

Project Concept

2.1 Abstract

It is web-based system where quiz is taken online i.e., through the internet or intranet using computer system. It can be observed that the information required can be obtained with ease and accuracy in the computerized system. The user with minimum knowledge about computer can be able to operate the system easily. Quizzes are currently quite popular among educated people as well as in entertainment performances. Although the quiz can be completed manually, it frequently necessitates extensive planning. Quizzes are a popular source of fun and contribute to an individual's knowledge growth. It is cost effective and time effective.

2.2 Objectives

1. To provide better information for the users of this system.
2. Helps users to test their knowledge and skills.
3. Offering several types of questions.

2.3 Literature Review

QuizFun: Mobile based quiz game for learning research paper is based on the software that was prototyped in order to increase students' interactive participation in learning. The software also intended to motivate students to be engaged in specific subject content. The students were inspired to use the activity by encompassing the gaming mode in teaching and learning. Further, excitement was created by mobile enabled game mode. The mobile game consists of two modes as multiplayer mode and single player mode comprising of three levels with an embedded scoring mechanism. The scoring system provided students with immediate responses making the game fun and highly interactive. In-depth studies were carried out in relation to teaching and learning methodologies, which enriched the gaming environment that was prototyped, facilitating the students encouraging learning environment. Encouragement through quick feedback and hints showed a change in the participant's attitude towards assessments. Use of smiley faces and other symbols for communicating emotions was an added feature in the developed prototype. The mobile application was built using Java Platform, Micro Edition (Java ME) while the web application was created using ICEfaces, which is an integrated Ajax application framework for developing Rich Internet

Applications (RIA). The prototype built to implement the proposed idea was evaluated by several users. The research found high interactivity among students and found students becoming enthusiastic in participating in learning activity.
“GAME QUIZ” - Implementing a serious game platform based in quiz games for the teaching of Information and Technology research paper in this the last years have been highlighted by computer science evolution that has created new learning and teaching opportunities. Nowadays children, called digital natives, have a significant will to deal with technology and feel fascinated by it. This paper presents an online platform based on serious games, which intends to enhance the interest of these children, leading them into learning while they are able to play through the promotion of an Information and Communication Technology subject based on the Portuguese National Educational Program. We believe that with this platform we will contribute to a change in our present educational program into a more attractive and motivating program for students, challenging them through the quiz "Quem Quer Ser Informático?”.

Game-Based Digital Quiz as a Tool for Improving Students’ Engagement and Learning in Online Lectures research paper Distances teaching and learning are gaining popularity, especially amidst the COVID-19 crisis at the beginning of 2020. Several schools, colleges, and universities across the globe, as a result, have adopted the online mode of teaching. While the businesses and day-to-day activities were shutting down, eLearning tools and online education platforms saw considerable demand. Many institutions with digital infrastructure in place and prior distance teaching experience had a smoother transition from on-campus classes and lecturing to online teaching and learning. In contrast, for many, the transition involved challenges, including keeping students’ motivation, interaction, and interest alive, in addition to adapting tools and technologies. This paper reports on students’ engagement and motivation levels along with the learning curve during the online learning using a game-based digital quiz tool within a Human-Computer Interaction course in a university in Kosovo. The study investigates the effect of in-lecture quizzes in online classes and correlating the effect of students in the learning curve over four months. Two key motivation parametersstudents’ engagement and interaction - are compared and analyzed using two different online quiz platforms and the impact of its uses reflected in the learning curve. The results indicated a significant increase in students’ engagement and interaction levels in lectures with systematic in-lecture quizzes. Further, the results show that the learning curve is steeper when using in-lecture quizzes (with 73%) in contrast to classes where in-lecture quizzes are not used (57.5%).

Quizzes (as a tool for self-regulated learning) in Software Engineering Education research paper discusses how quizzes are applied within the field of software engineering learning and how quizzes can help self-regulate student learning. For this, a systematic mapping that selected the most relevant studies on the use of quizzes in education was performed, aiming to clarify their relationships and mutual impacts. Our analysis shows that student engagement and quiz work is a prominent learning solution for increasing motivation in and out of the classroom. We found that quizzes can be applied in software engineering and through generic quizzes, online Quizzes, pop-Quizzes, gamified Quizzes, in quiz games or, alternatively, as an exercise in creating quizzes. However, we did not find approaches to the use of quizzes, explicitly containing Zimmerman’s cyclic model, only some of the model’s activities in isolation and not explicitly. We argue that sharing the quizzes will raise the potential for then to be use as a self-regulation tool in software engineering education. We describe the steps taken by a Software Engineering Gamification project to create a effective tool for creating and sharing software engineering quizzes. Our next requirement to be implemented in the project will be the application of self-regulation of learning

containing the three phases of the Zimermman cyclic model.

2.4 Problem Definition

To implement Online Quiz Game using AWS Services such as EC2, RDP and using HTML,CSS, Javascript and PHP.

2.5 Scope

In this project we are making an Online Quiz Game which will help student take quiz. This can be used in educational institutions as well as in corporate world. Can be used anywhere any time as it is a web-based application (user Location doesn't matter). No restriction that examiner has to be present when the candidate takes the test.

2.6 Technology Stack

PHP: HYPERTEXT Preprocessor, is a widely used, general-purpose scripting language that was originally designed for web development, to produce dynamic web pages. It can be embedded into HTML and generally runs on a web server, which needs to be configured to process PHP code and create web page content from it. It can be deployed on most web servers and on almost every operating system and platform free of charge.

HTML: The Hypertext Markup Language or HTML is the standard markup language for documents designed to be displayed in a web browser. HTML is the code that is used to structure a web page and its content. For example, content could be structured within a set of paragraphs, a list of bulleted points, or using images and data tables JavaScript: JavaScript is used by programmers across the world to create dynamic and interactive web content like applications and browsers. JavaScript is so popular that it's the most used programming language in the world, used as a client-side programming language by 97.0% of all websites.

CSS: CSS stands for Cascading Style Sheets. It describes how HTML elements can be displayed on screens. It manages the layout of several web pages at the same time. It is used to define styles for the web pages. There are three types of CSS that are: Inline CSS, Internal or Embedded CSS, External CSS. CSS is a cornerstone technology of the World Wide Web, alongside HTML and JavaScript.CSS is designed to enable the separation of presentation and content, including layout, colors, and fonts.

Javascript: JavaScript is a cross-platform, object-oriented scripting language used to make webpages interactive (e.g., having complex animations, clickable buttons, popup menus, etc.). There are also more advanced server-side versions of JavaScript such as Node.js, which allow you to add more functionality to a website than downloading files (such as real-time collaboration between multiple computers). Inside a host environment (for example, a web browser), JavaScript can be connected to the objects of its environment to provide programmatic control over them.

EC2: An Amazon EC2 instance is a virtual server in Amazon's Elastic Compute Cloud (EC2) for running applications on the Amazon Web Services (AWS) infrastructure. AWS is a comprehensive, evolving cloud

computing platform; EC2 is a service that enables business subscribers to run application programs in the computing environment. It can serve as a practically unlimited set of virtual machines (VMs).

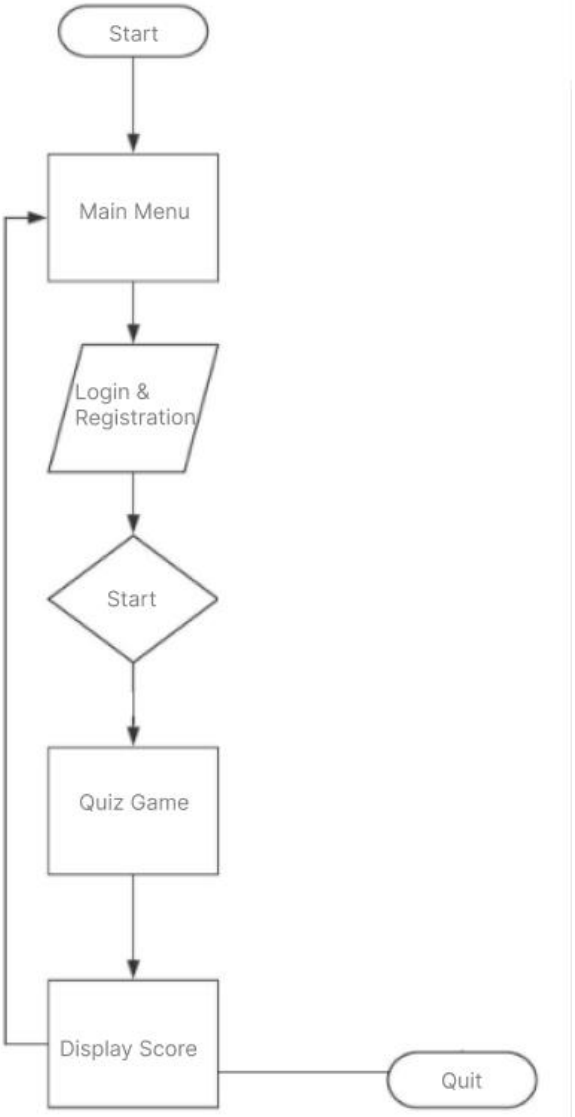
2.7 Benefits for Environment and Society

1. 24-hour Availability: Online Quiz Game allows players play anytime as they are available 24/7.
2. Students can take quiz independently from anywhere for example home or college.
3. Consistent Answers: The use of chatbots can help to maintain a great level of consistency in answers.
4. Quizzes can be given without an instructor, which saves money and time.
5. A quiz or poll at the end of a lesson is a good way to gain a quick overview of who needs help and where you could challenge pupils further.

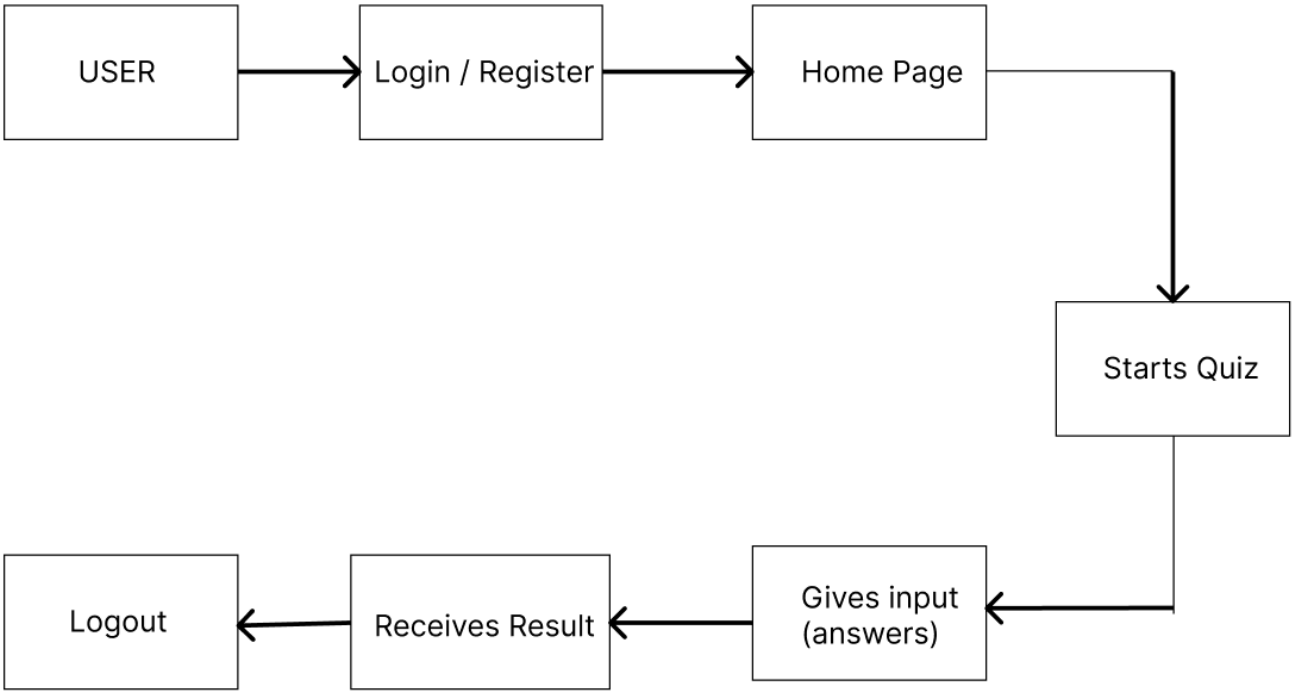
Chapter 3

Project Design

5.1 Flow Chart Diagram



5.2 Block Diagram


USER
Login / Register
Home Page
Starts Quiz
Gives input (answers)
Receives Result
Logout

Chapter 4

Implementation Details

The following steps and screenshots depict the implementation of deployment of the application on AWS Cloud environment.

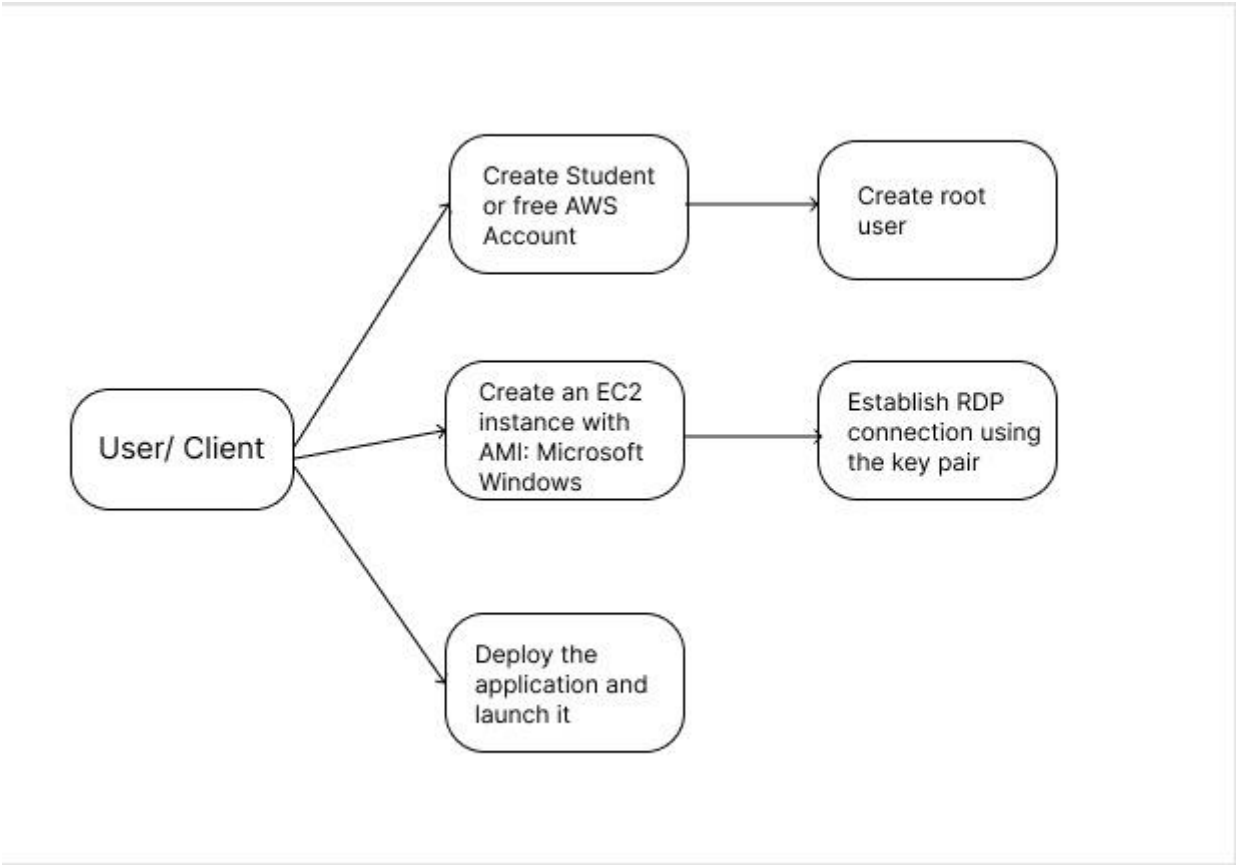
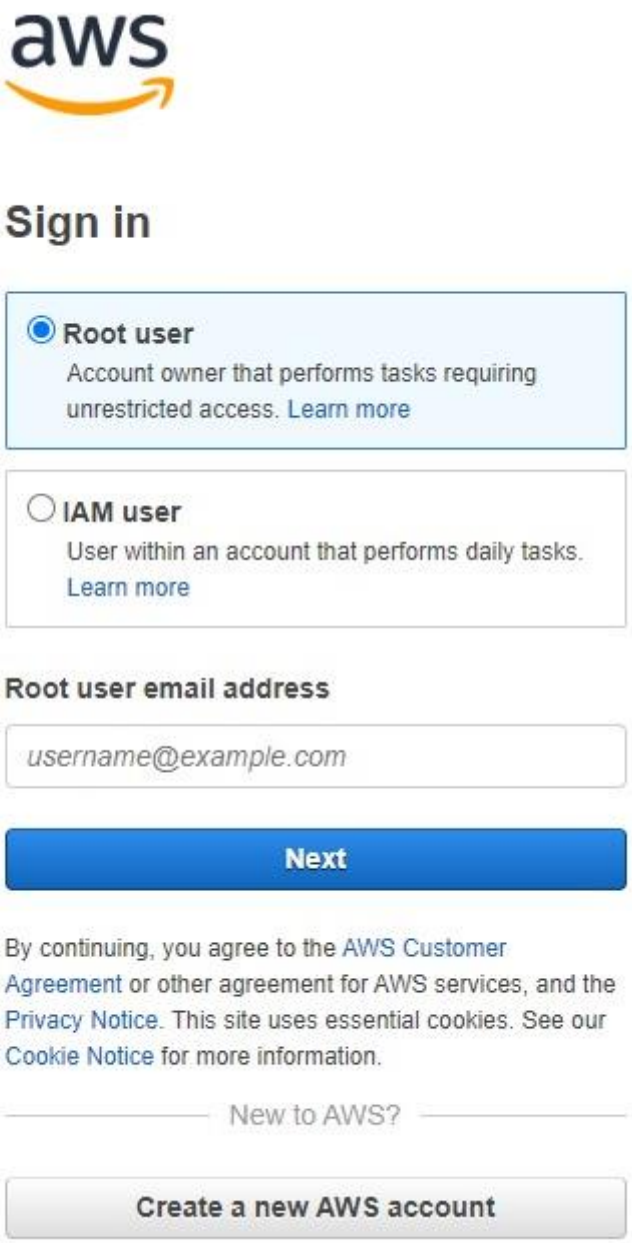


Fig 2 . Use Case Diagram

Step 1 : Go to aws.amazon.com then click on create a free account and choose root user.

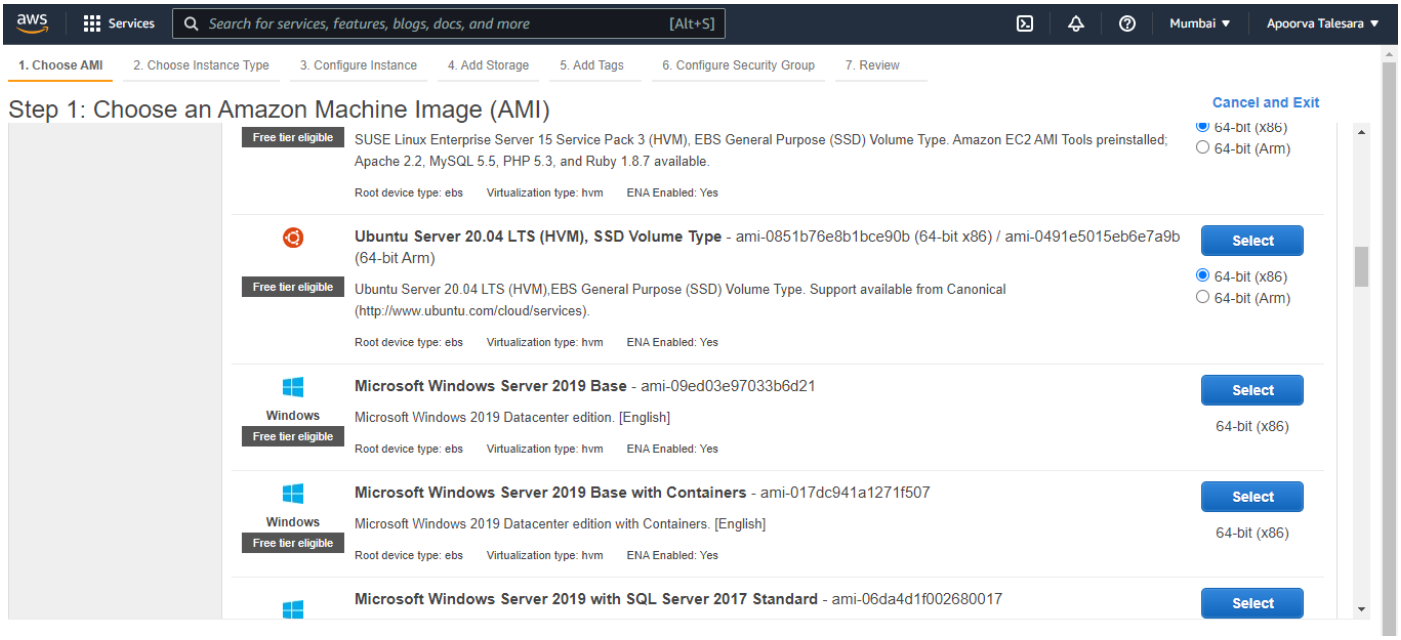


Step 2 : Go to services and select EC2.

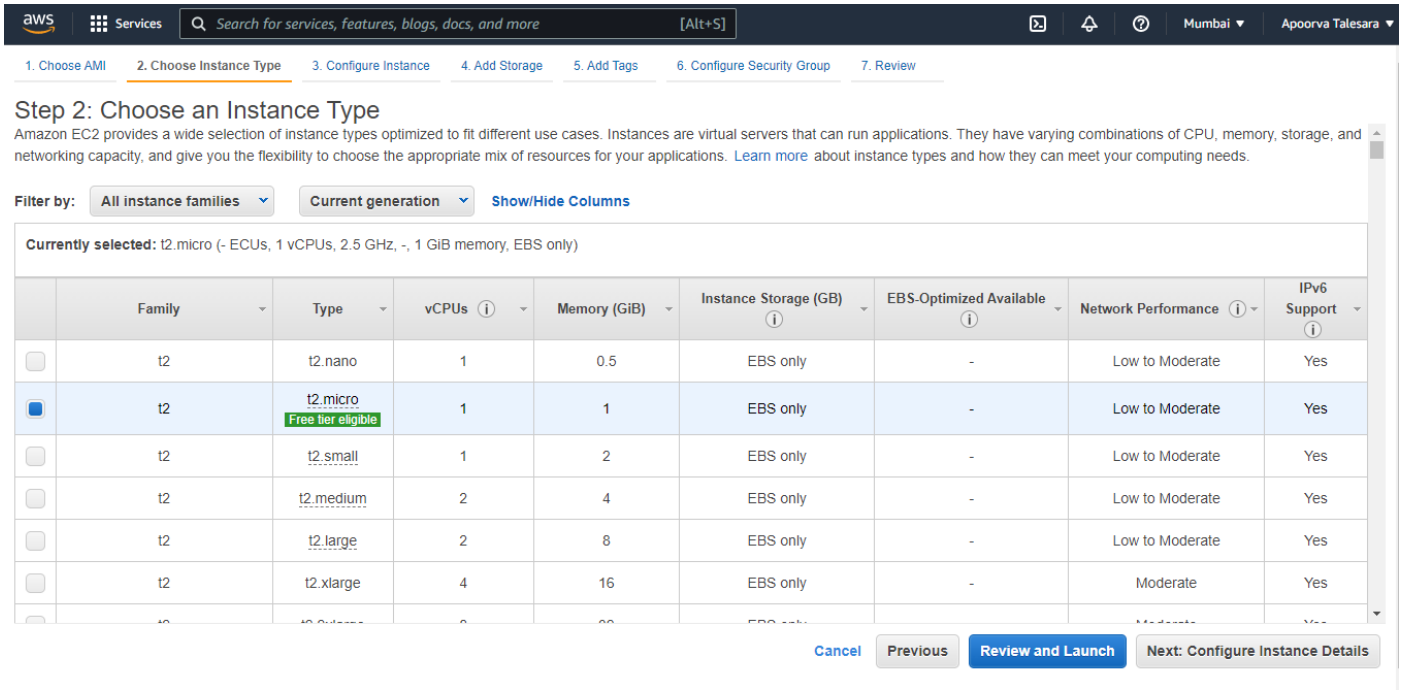
- To create an instance click on launch instance .

Step 3 : Choose an Amazon Machine Image(AMI).

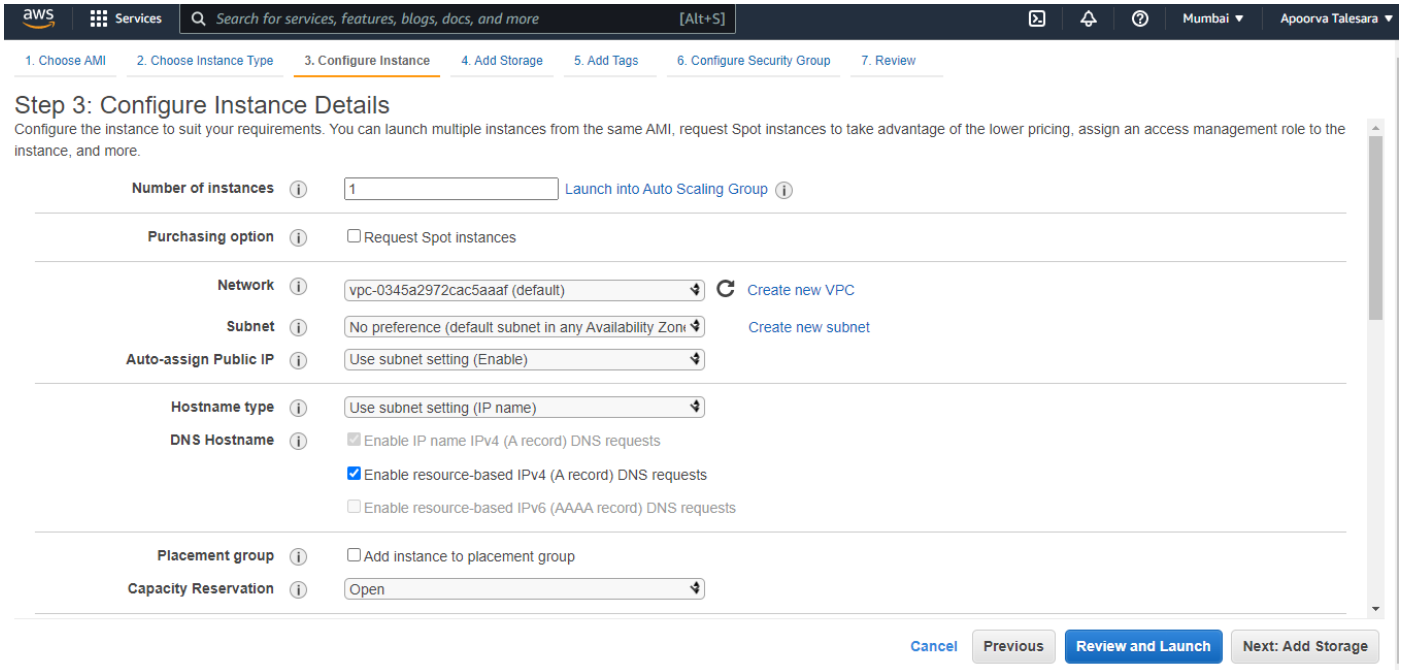
- Choose AMI: Microsoft Windows Server 2022 Base (in Free Tier)



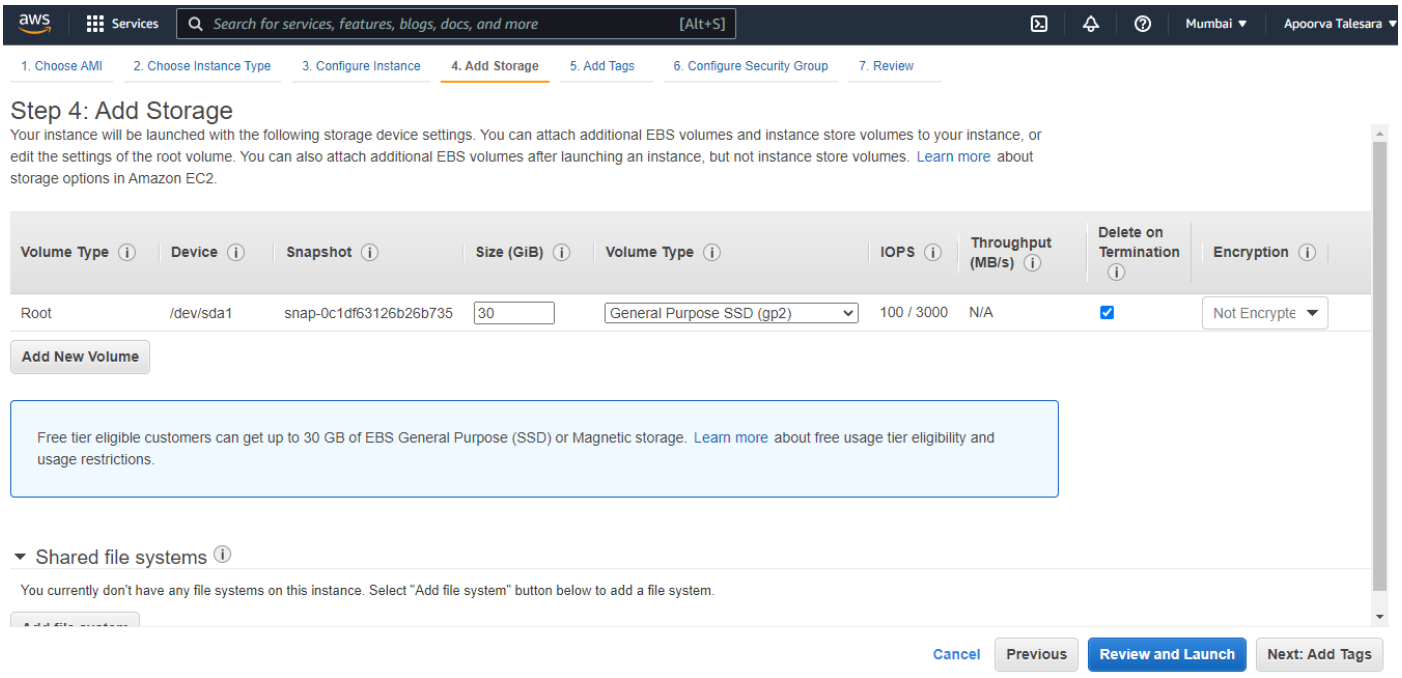
- Instance Type: choose t2.micro(free tier eligible)



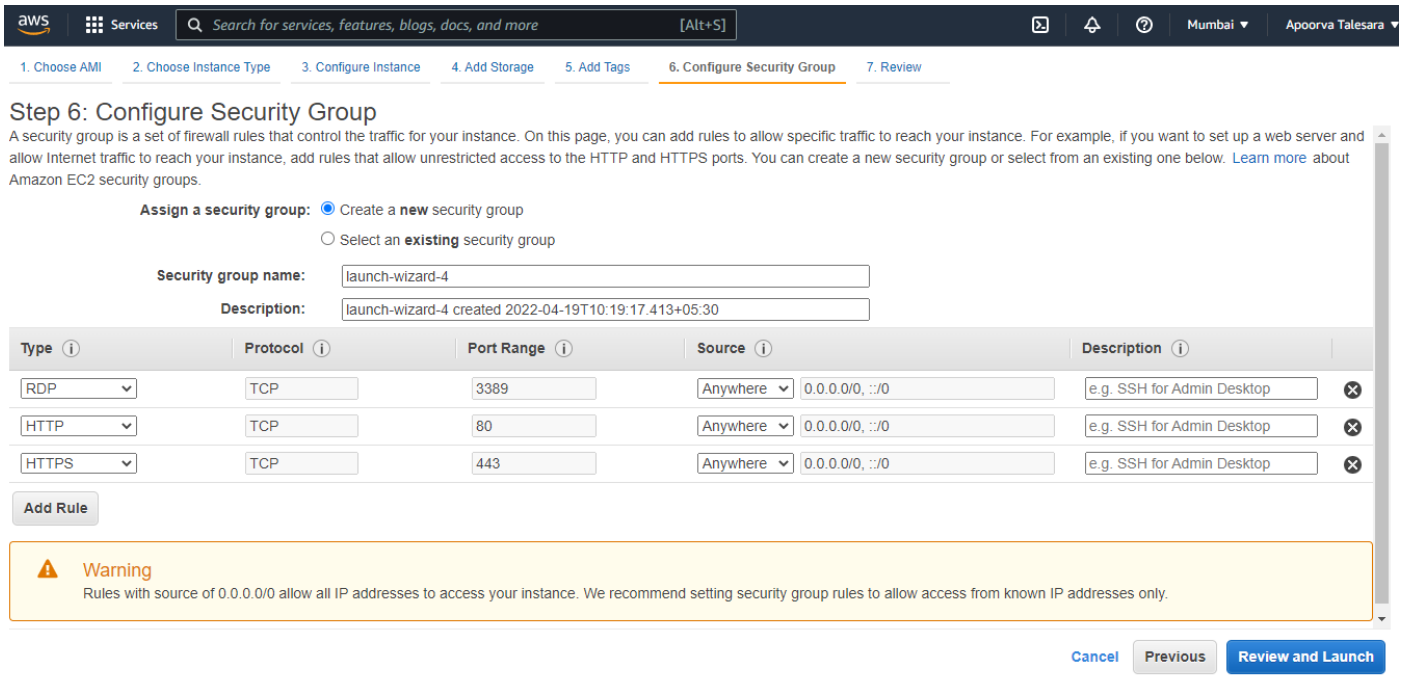
- No change in Instance Details.



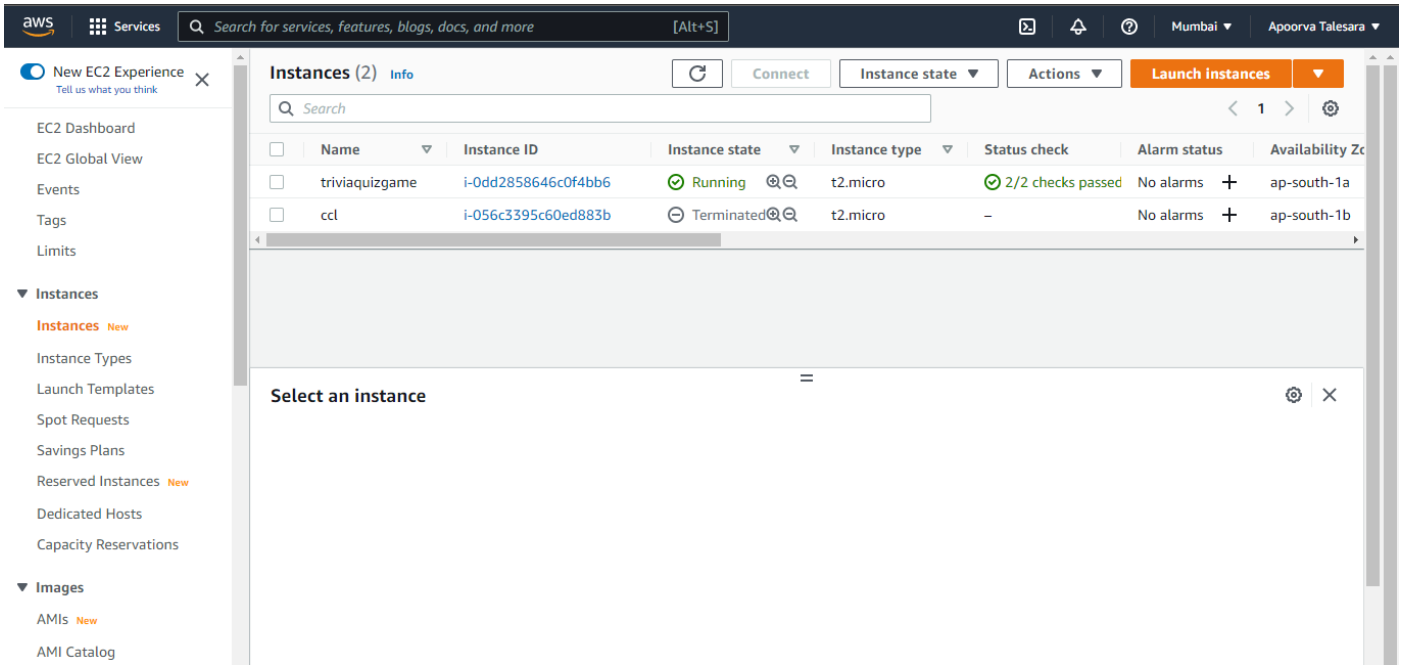
- No change is Storage. Assigned storage is sufficient.



- Add a tag: Key: Name
- Value: instance_1 (name of instance you want)
- Security Group Configuration: Add Rules: Custom TCP protocol and set port number to 8080. Add RDP, HTTP and HTTPS rules as well.

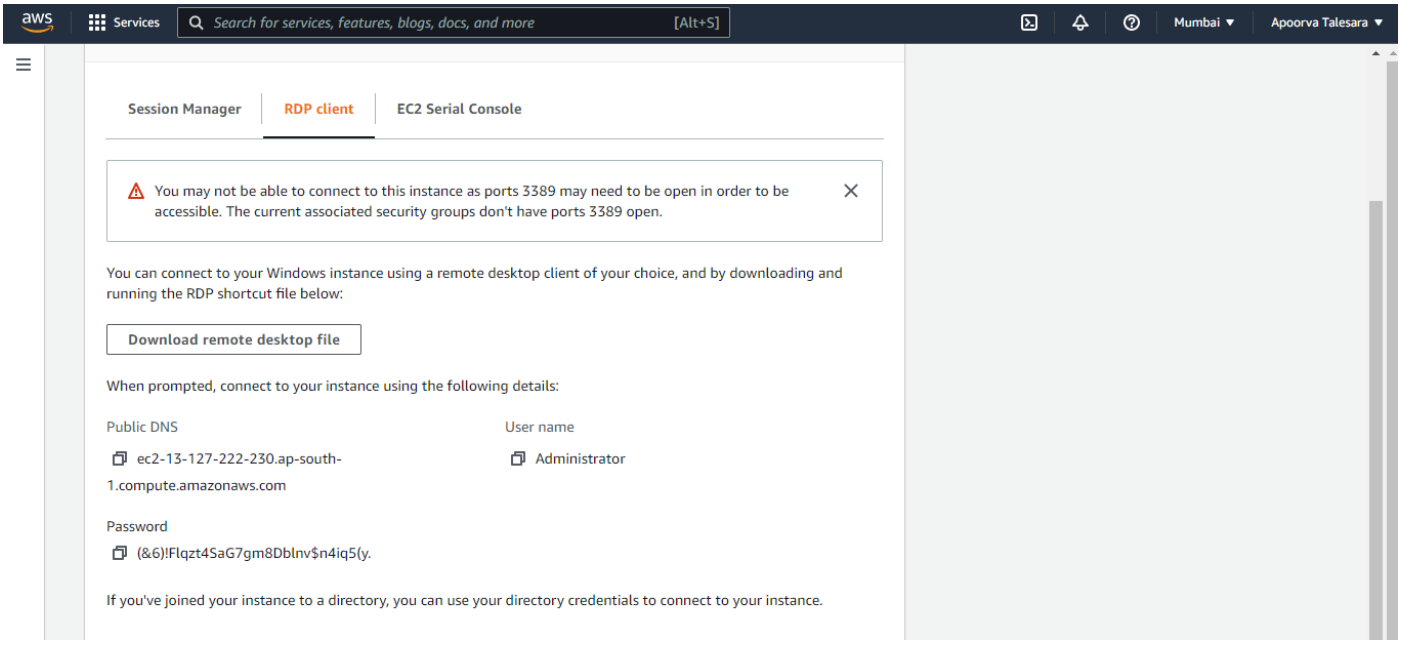


- When asked for Key Pair, select Create a new Key Pair. Name the Key Pair and create. A .pem file will be downloaded. Know the location of this file for further use.
- Launch the instance
- Go to EC2>>Instances and wait for the Instance State to display Running Status Check to display 2/2 checks passed before proceeding.

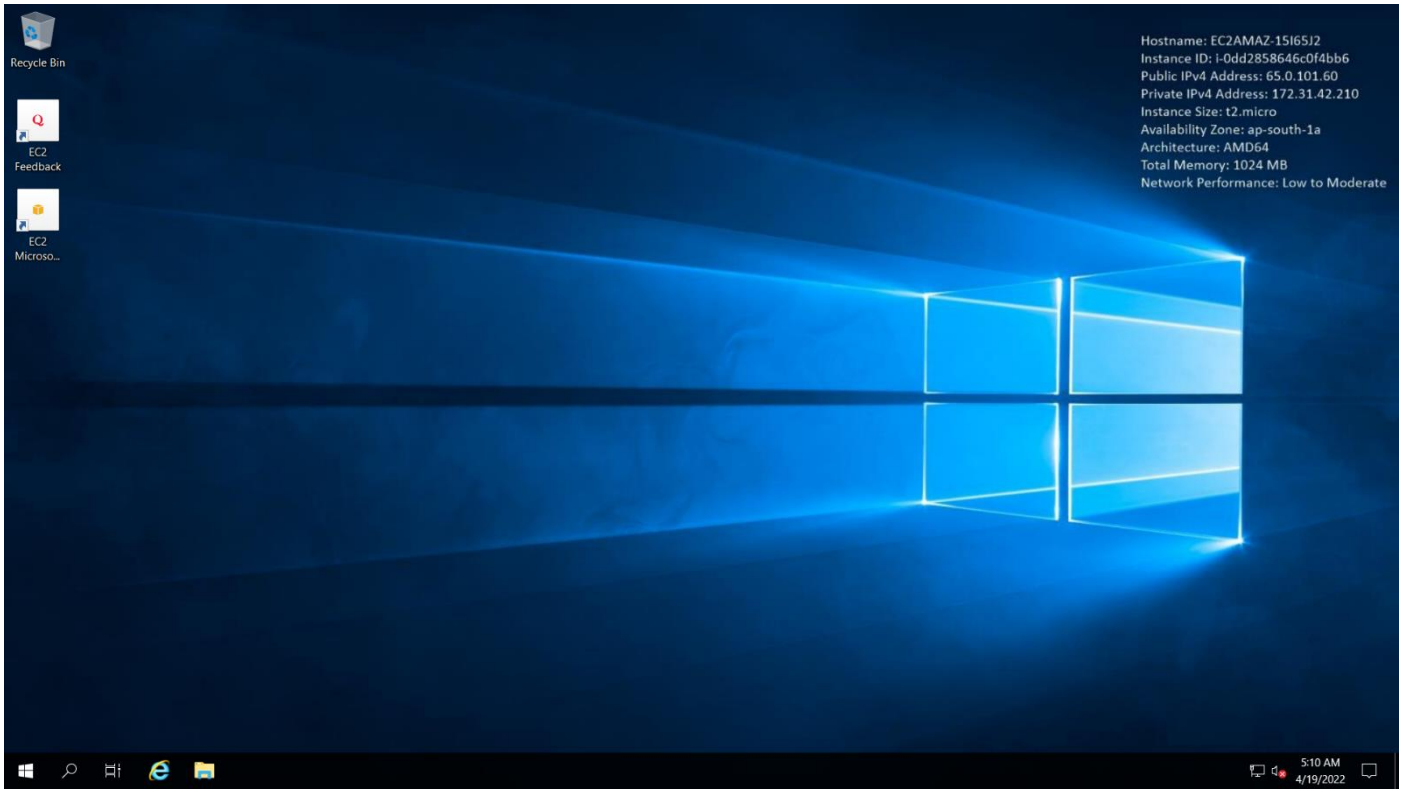


Step 4 : Create RDP Connect.

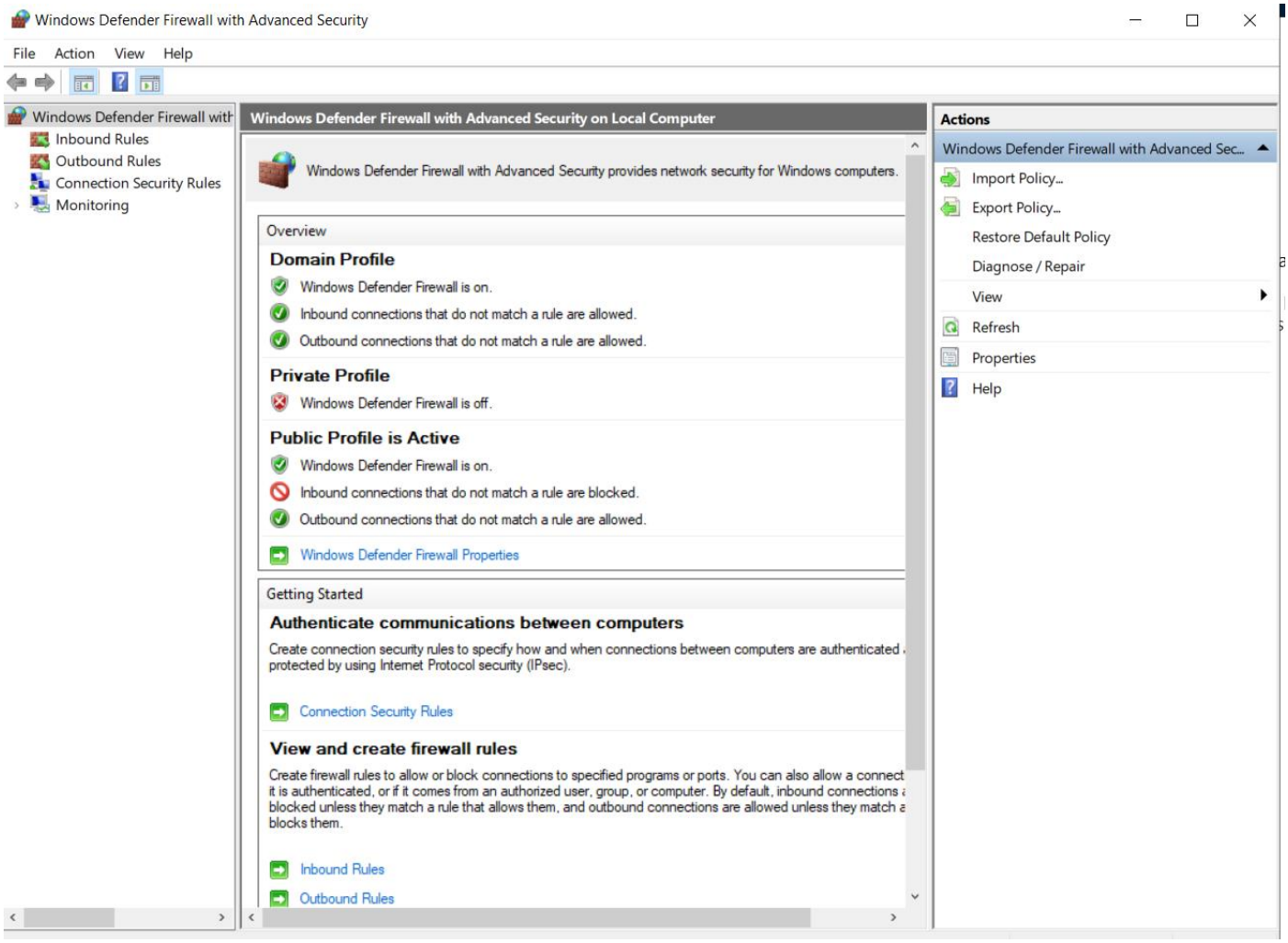
- Select the instance you created and click on Connect in top panel.
- Navigate to RDP Client section.
- Click on Download remote desktop file, and a .rdp file will be downloaded.
- In the password section, click on Get Password.
- Here, browse and select the Key Pair file we downloaded in the previous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



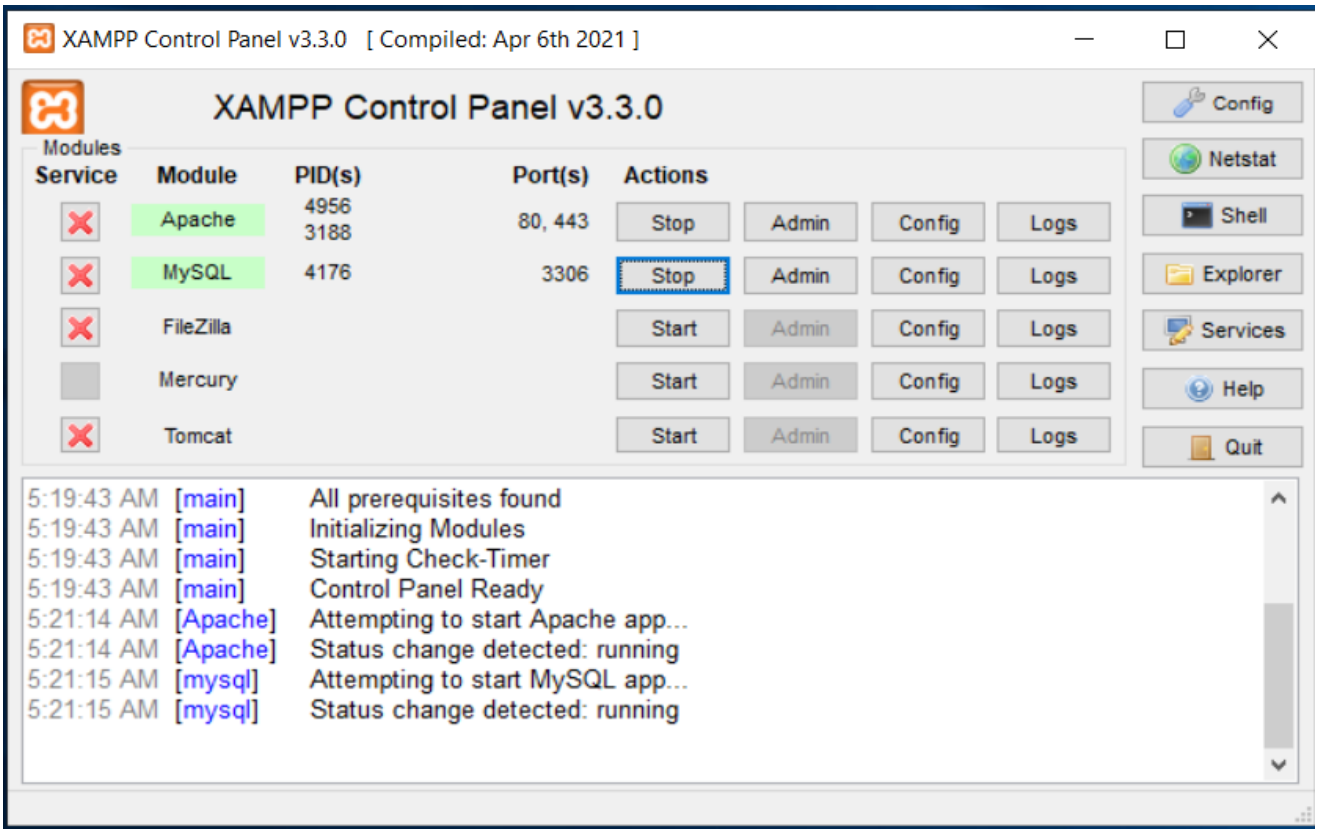
- Open the .rdp file now. Click on Connect in the pop-up. You will be asked to enter a password for the Administrator user. Copy the Decrypted password from the console and past in the dialogue box and connect to the RDP client. Click on Yes if another pop-up appears.
- As we have chosen Windows AMI, 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.
- RDP Connection is now established.

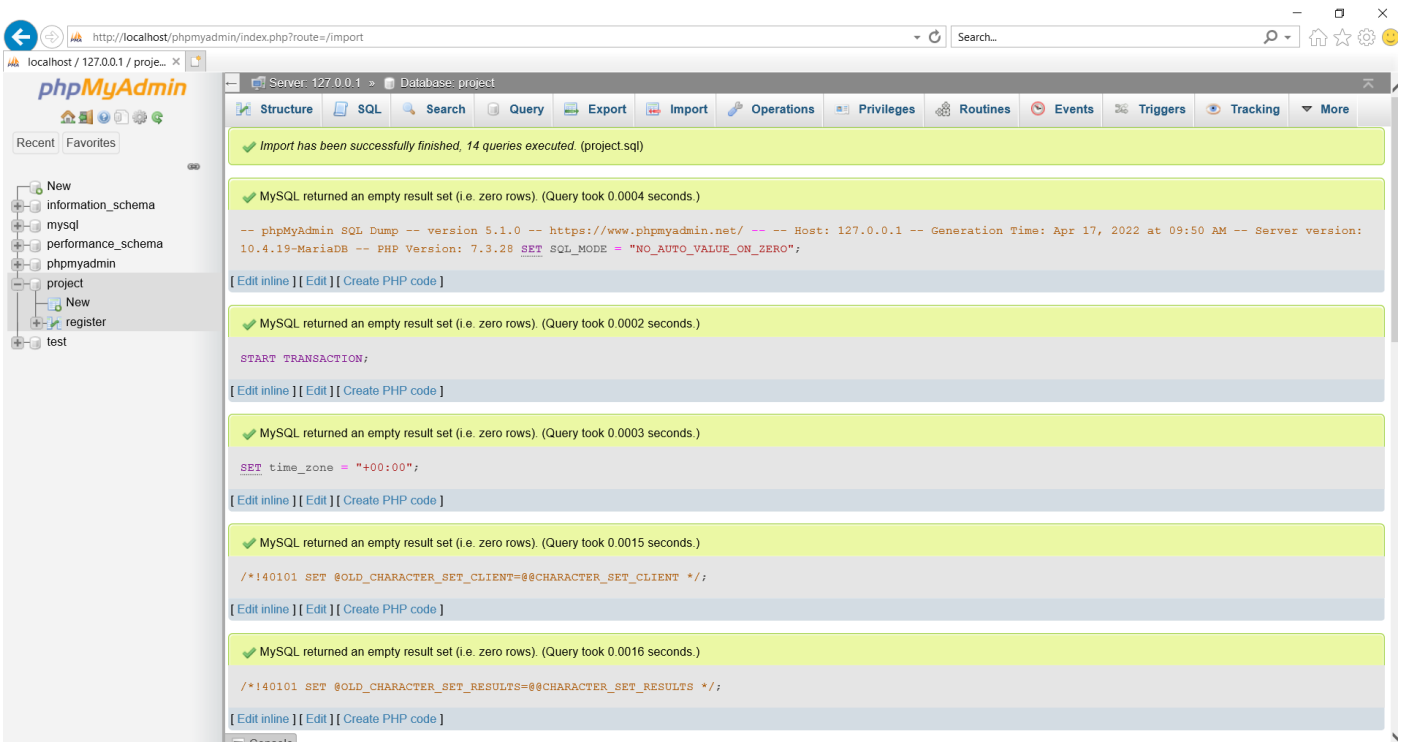


- To Run the project, you will need to turn off the firewall by going to windows and turning off public and private firewall and go to firewall settings and then go to the advanced settings to allow inbound connections.


Windows Defender Firewall with Advanced Security
File Action View Help
Windows Defender Firewall with
Inbound Rules
Outbound Rules
Connection Security Rules
Monitoring
Windows Defender Firewall with Advanced Security on Local Computer
Windows Defender Firewall with Advanced Security provides network security for Windows computers.
Overview
Domain Profile
Windows Defender Firewall is on.
Inbound connections that do not match a rule are allowed.
Outbound connections that do not match a rule are allowed.
Private Profile
Windows Defender Firewall is off.
Public Profile is Active
Windows Defender Firewall is on.
Inbound connections that do not match a rule are blocked.
Outbound connections that do not match a rule are allowed.
Windows Defender Firewall Properties
Getting Started
Authenticate communications between computers
Create connection security rules to specify how and when connections between computers are authenticated
protected by using Internet Protocol security (IPsec).
Connection Security Rules
View and create firewall rules
Create firewall rules to allow or block connections to specified programs or ports. You can also allow a connect
it is authenticated, or if it comes from an authorized user, group, or computer. By default, inbound connections
blocked unless they match a rule that allows them, and outbound connections are allowed unless they match
blocks them.
Inbound Rules
Outbound Rules
Actions
Windows Defender Firewall with Advanced Sec...
Import Policy...
Export Policy...
Restore Default Policy
Diagnose / Repair
View
Refresh
Properties
Help

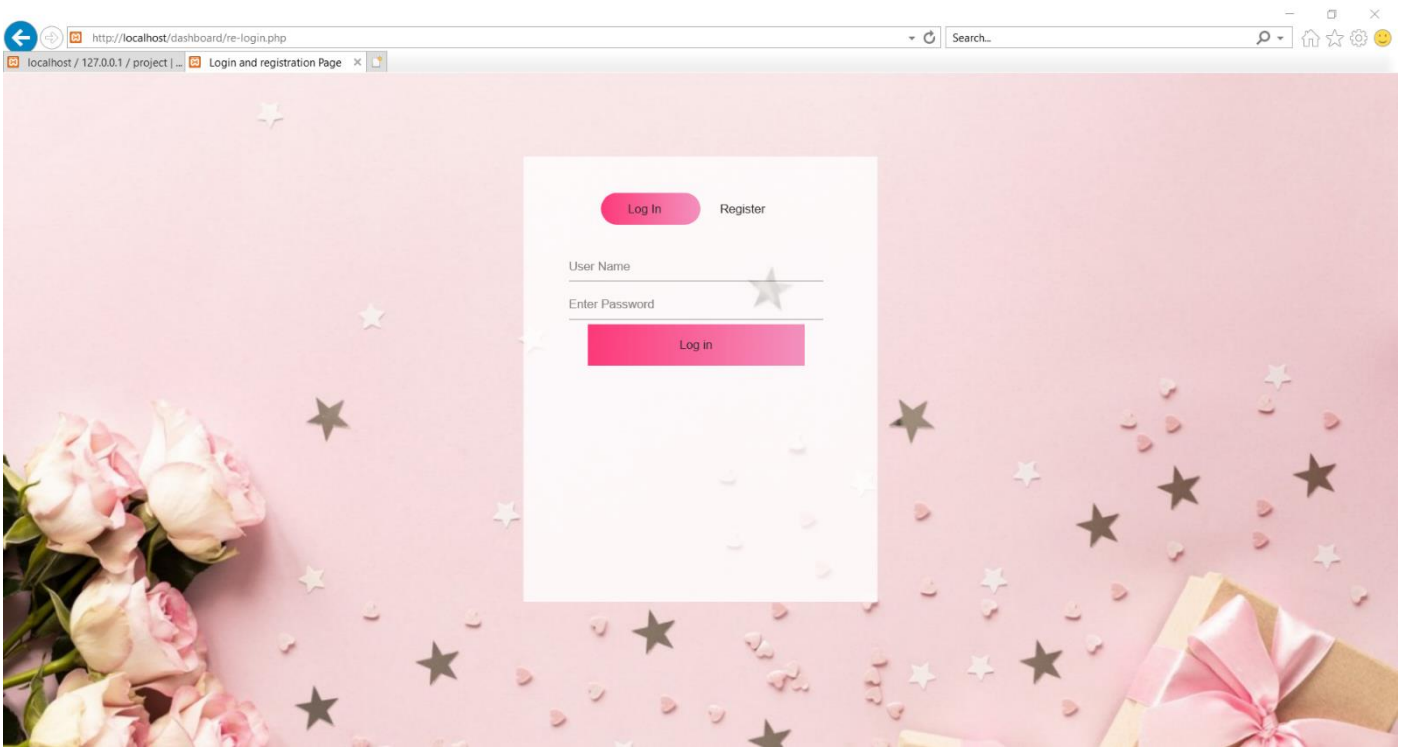
- To run this project, install Xampp. You open Apache and MySQL connection on Xampp, create a database by the name of project in phpMyAdmin and import the .sql file.



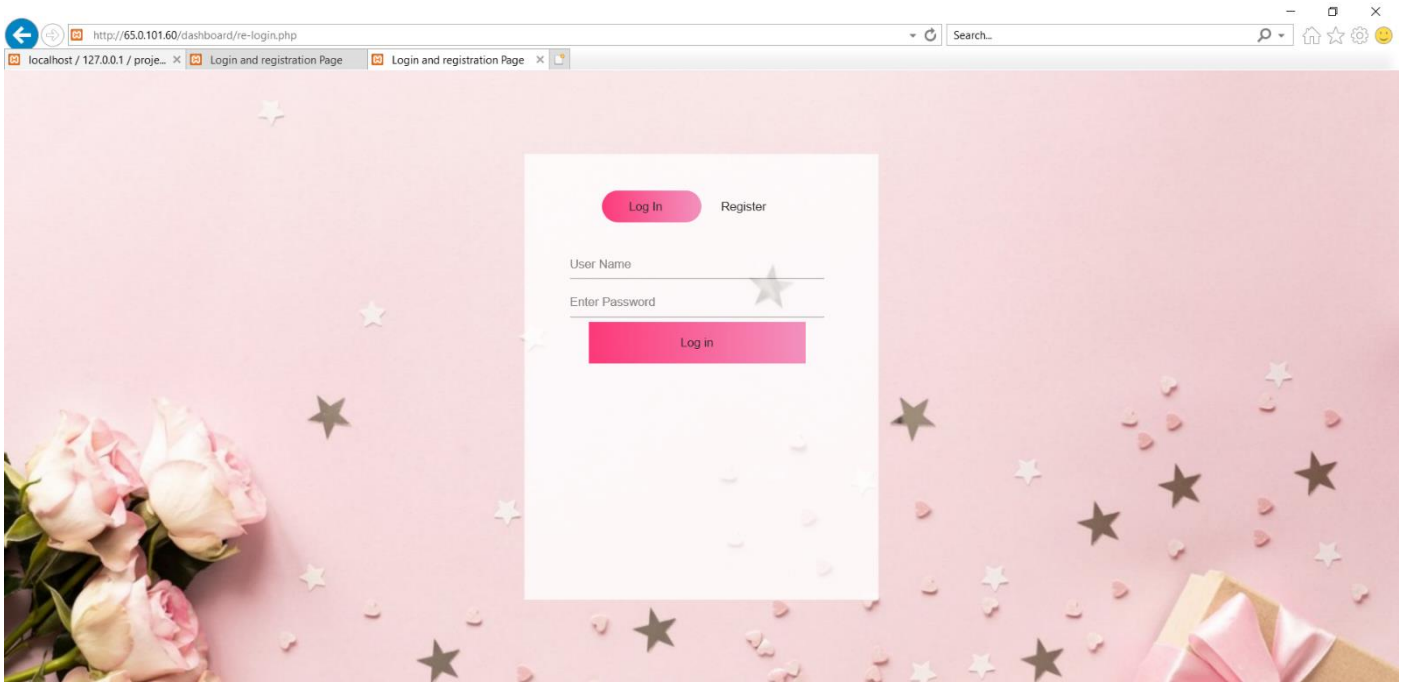


Step 5 : Import your project in RDP client.

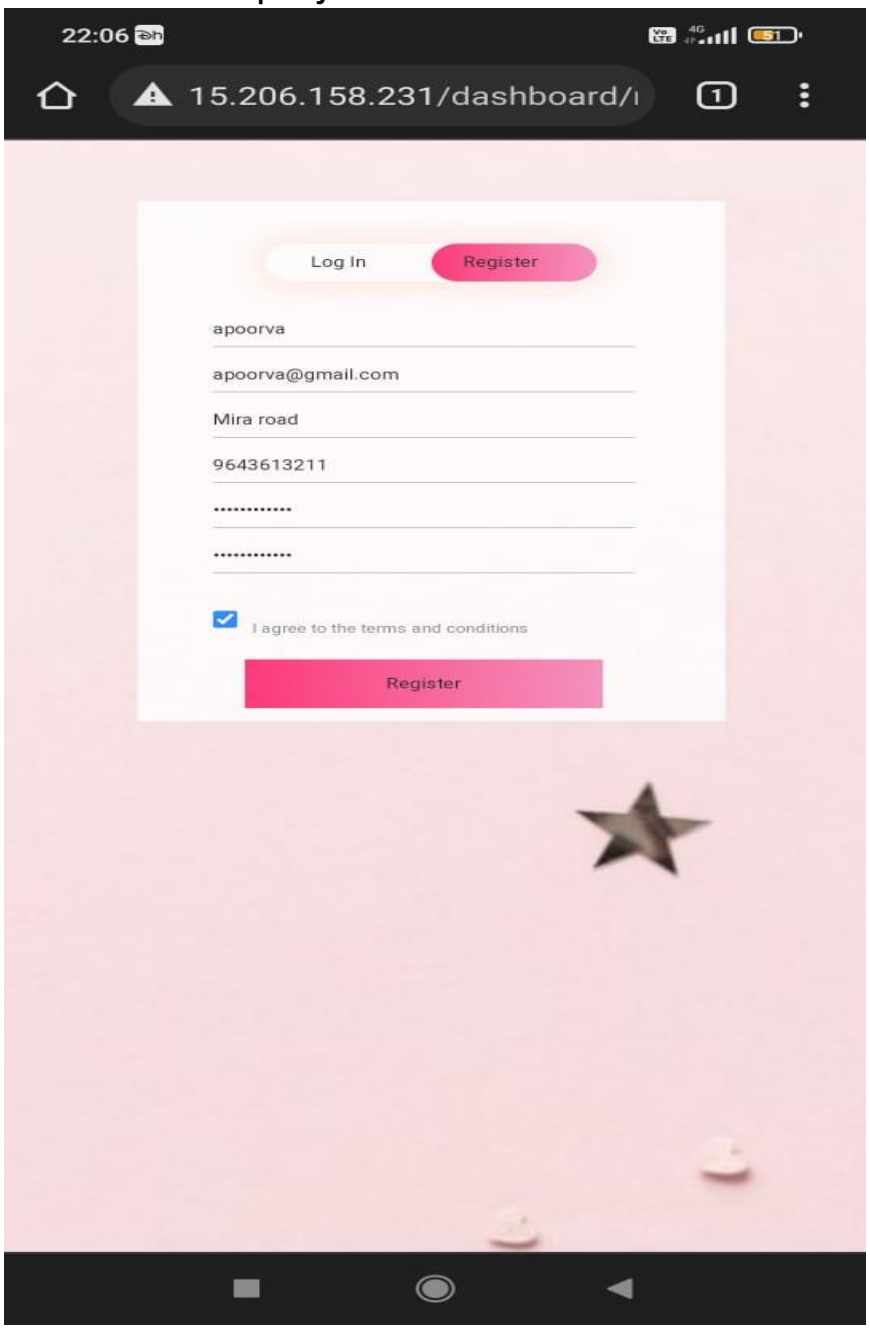
- Open your browser and type : localhost/project_name(localhost/dashboard)

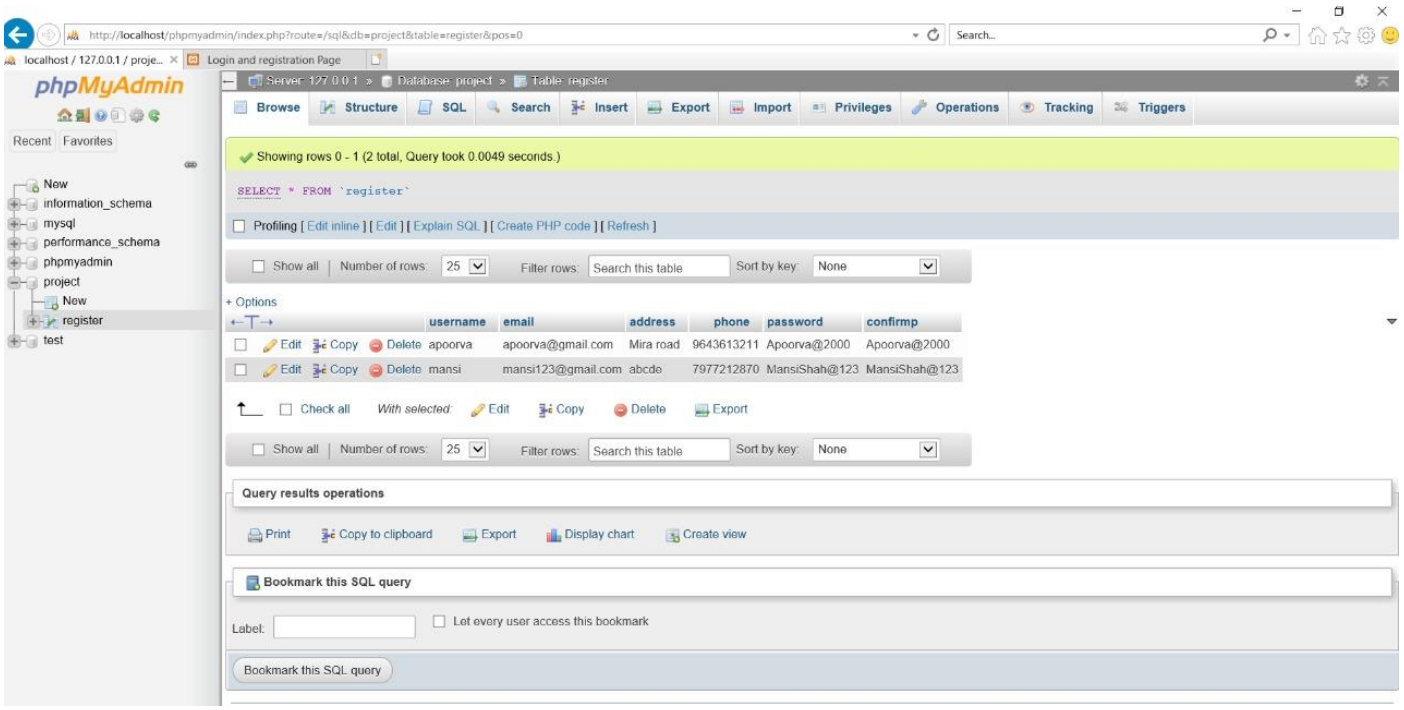


- Type on your browser the public IP address displayed on the top right corner of the RDP screen along with the name of the project. (65.0.101.60/dashboard)



- Test the project to see if the database is being saved in phpmyadmin





Summary

By the means of this project, we learned to implement the concepts of Cloud Computing such as Storage as a Service and Software as a Service. Software as a service (or SaaS) is a way of delivering applications over the Internet—as a service. Instead of installing and maintaining software, you simply access it via the Internet, freeing yourself from complex software and hardware management. SaaS applications are sometimes called Web-based software, on-demand software, or hosted software. Storage as a Service or SaaS is cloud storage that you rent from a Cloud Service Provider (CSP) and that provides basic ways to access that storage. Enterprises, small and medium businesses, home offices, and individuals can use the cloud for multimedia storage, data repositories, data backup and recovery, and disaster recovery.

Learning Outcomes

The main aim of this project was to understand the concepts of cloud computing and implement them by the means of a project. During the course of development of this project we learned to use the AWS Cloud console in terms of using the different services provided by AWS. We have studied and implemented the following concepts and used the cloud services:

- Software as a Service
- Storage as a Service
- EC2

Conclusion : We have created an Online Quiz Game where the student needs to register to start the quiz. Once the quiz is over the student can see the result without waiting. Students can access the quiz from anywhere using a computer or a mobile.

5.3 References

https://aws.amazon.com/console

https://ieeexplore.ieee.org/document/5314125

https://ieeexplore.ieee.org/document/6784218

https://ieeexplore.ieee.org/document/9452076

https://ieeexplore.ieee.org/document/9206235

Github Link :

https://github.com/ApoorvaTalesara/Online-Quiz-Game-using-cloud-computing