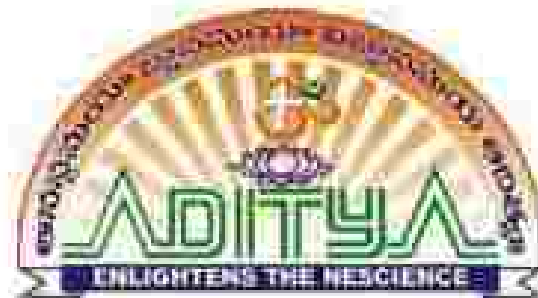


# **DEPLOY AN ECOMMERCE WEBSITE ON EC2**

*A Summer Internship Report submitted in partial fulfillment of the requirements for the award of degree of*

## **BACHELOR OF TECHNOLOGY In CSE – ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING**

**Submitted by:**  
Vadaparthi Lakshmi narayana  
22P31A42C6



## **CSE – ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING**

### **ADITYA ENGINEERING COLLEGE & TECHNOLOGY (A)**

Approved by AICTE, Permanently affiliated to JNTUK & Accredited by NAAC with 'A' Grade

Recognized by UGC under the sections 2(f) and 12(B) of the UGC act 1956

Aditya Nagar, ADB Road - Sarampalem 533437, T.G. Dist., A.P.

2024-2025

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### **CSE – ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING**



### **CERTIFICATE**

This is to certify that the Internship report entitled **DEPLOY AN ECOMMERCE WEBSITE ON EC2** is being submitted by **VADAPARTHI LAKSHMI NARAYANA(22P31A42C6)** in partial fulfillment of the requirements for award of the B.Tech degree in CSE- Artificial Intelligence and machine learning for the academic year 2024-2025.

**Internship Coordinator**  
Mrs. K. S. B. Ambika(Ph.D)  
Senior Assistant Professor,  
Dept of CSE-AIML

**Head of the Department**  
Dr. K. Naga Bhargavi  
Head of the Department,  
Dept of CSE-AIML

## DECLARATION

Thereby declare that the Internship entitled “Deploy an E-Commerce Website on EC2” is a genuine report. This work has been submitted to the ADITYA COLLEGE OF ENGINEERING & TECHNOLOGY (A), Surampalem, permanently affiliated to JNTUK, KAKINADA in partial fulfillment of the B.Tech degree.

I also hereby declare that this internship report not submitted in full or partial any other university for any degree.

VADAPARTHILAKSHMINARAYANA

(21P31A42C6)

# Institute Vision & Mission



## ADITYA COLLEGE OF ENGINEERING & TECHNOLOGY

An AUTONOMOUS Institution

Approved by AICTE, Government of Karnataka, India, Affiliated by Anna University, Chennai

Recognized by the State Planning Committee, Government of Karnataka, India

Office: 1st Stage, 1st Cross, 1st Main Road, 1st Stage, 1st Cross, 1st Main Road, 1st Stage, 1st Cross, 1st Main Road

Aditya College of Engineering & Technology, 1st Stage, 1st Cross, 1st Main Road

### INSTITUTE VISION AND MISSION

#### VISION

To achieve higher planes of learning by creating technical education with

- International standards
- Applied research
- Creative Ability
- Value based instruction and to emerge as a premier institute

#### MISSION

Achieving academic excellence by providing globally acceptable technical education by fostering technology through

- Innovative research and development
- Library Institute interaction
- Empowerment program



PRINCIPAL

PRINCIPAL  
Aditya College of  
Engineering & Technology  
1st Stage, 1st Cross, 1st Main Road

# INTERNSHIP COMPLETION CERTIFICATE



TECHNICAL HUB  
FOUNDER & CEO

## CERTIFICATE OF INTERNSHIP

Date: 19/07/2024

This is to certify that Mr. **MAHAPATRU LAKSHMI NARAYANA**, of the **Computer Science and Engineering (AIML)** department with Roll No: **23PD1A8206** of **Aaditya College of Engineering & Technology (A)** has successfully completed a summer internship at **Technical Hub Pvt Ltd** from **18-06-2024** to **15-07-2024**.

During this tenure, the intern worked with the technology **AI/ML Development** and excelled in major concepts.

- Cloud IDE
- Java Stack and Queue
- API Gateway
- GraphQL Format

The intern has a great amount of responsibility, honesty, and a genuine willingness to learn new things.

We found the intern's performance and conduct were satisfactory.

We wish you all the best and success in your future endeavours.

Intern ID - TH8142138  
<https://www.technicalhub.co>

  
**Ravi Nishant**  
Founder & CEO  
  
Technical Hub Pvt Ltd

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TECHNICAL HUB

## **ACKNOWLEDGEMENT**

I offer my sincere thanks to precious and dynamic Principal, **Dr. A. Rameth**, **Aditya College of Engineering & Technology (A)** for his co-operation.

My sincere thanks to **Dr.K. Naga Bargavi**, M.Tech, Ph.D, Head of the department of CSE – Artificial Intelligence and Machine Learning for his valuable support.

I express my sincere gratitude to my internship guide, **Mrs, K. S. B. Ambika (PHD)**, department of CSE – Artificial Intelligence and Machine Learning, for his valuable guidance and encouragement which has been helpful in successful completion of this internship.

With immense pleasure I would like to express my deep sense and heart full thanks to the management of **Aditya College of Engineering & Technology (A)**.

**DEPARTMENT OF CSE - AI&ML**  
**VISION & MISSION OF THE DEPARTMENT**

**VISION**

To be a world-class Computer Science and Engineering department, to meet the growing needs of the industry and society.

**MISSION**

M1: Providing Quality Education through Intellectual, Professional, and Industry collaboration.

M2: Inducting Teaching Faculty Members to Continuous knowledge.

M3: Organize a full range of technical and non-technical events for overall Development.

**PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)**

PEO1	Graduates in AI & ML Applications Courses to develop, design, and implement AI and ML solutions for real-time, business, and consumer sector problem.
PEO2	Enabling learning and Adapting to the rapidly changing technologies and industry trends in AI and ML through continuous learning and self-improvement.
PEO3	Effective Communication and Collaborative Problem solving skills in addition, along with an effective collaboration with interdisciplinary teams and networks to address real-world AI and ML concepts.

**PROGRAMME SPECIFIC OBJECTIVES (PSOs)**

PSO1	<b>AI and ML system development</b> Design and develop and implement AI and ML systems by utilizing fundamental principles, algorithms and tools.
PSO2	<b>Real-World Decision Making</b> Collect, preprocess and analyze large and diverse datasets to extract meaningful insights using AI and ML techniques to support decision-making, recommendation, and predictive analytics.

## PROGRAMME OUTCOMES (POs)

After successful completion of the program, the graduates will be able to:

PO1	Engineering knowledge: Apply the knowledge of mathematics, sciences, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO2	Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO3	Design/development of solutions: Design solutions for complex engineering problems and design systems, components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO4	Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, and data and measurements of data, and evaluation the information to provide valid conclusions.
PO5	Modern tool usage: Choose, select and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering situations with an understanding of the limitations.
PO6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge to maintain the sustainability development.
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsible behavior and actions in the engineering practice.
PO9	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams and in multidisciplinary settings.
PO10	Communication: Communicate effectively in complex engineering situations with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PO11	Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO12	Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.



## Learning Objectives / Internship Objectives

1. Internships are generally thought of to be reserved for college students looking to gain experience in a particular field. However, a wide array of people can benefit from Training Internships in order to receive real world experience and develop their skills.

2. An objective for this position should emphasize the skills you already possess in the area and your interest in learning more.

3. Internships are utilized in a number of different career fields, including architecture, engineering, healthcare, economics, advertising and many more.

4. Some internships are used to allow individuals to perform scientific research while others are specifically designed to allow people to gain first-hand experience working.

5. Utilizing internships is a great way to build your resume and develop skills that can be emphasized in your resume for future jobs. When you are applying for a Training Internship, make sure to highlight any special skills or talents that can make you stand apart from the rest of the applicants so that you have an improved chance of landing the position.

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## CHAPTER 1: Executive Summary

This report is about my 7 weeks internship program with Technical Hub Private limited. In this comprehensive report, I have discussed about every major aspect of the company which I observed and perceived during my internship program.

During my internship program, I have learned and mainly worked on AWS Development. All the details have been discussed in detail. All the policies and procedures of the company have been discussed in detail.

As there is a purpose of the internship is to learn by working in practical environment and to apply the knowledge acquired during the studies in real world scenario in order to tackle the problems using the knowledge and skill learned during the academic process.

## **CHAPTER 2: Overview of the Organization**

### **A. Introduction of the Organization:**

Aditya's Technical Hub is an innovative initiative established to bridge the gap between engineering education and industry demands. Recognizing the exponential opportunities and dynamic challenges of the 21st century, Technical Hub aims to prepare students for the global job market by providing comprehensive training in various disciplines.

### **B. Vision, Mission, and Values of the Organization:**

**Vision:** To transform engineering education and produce industry-ready professionals who can thrive in a rapidly evolving technological landscape.

**Mission:** To equip students with the necessary skills, creativity, and knowledge to advance in their careers and meet the demands of the global industry.

**Values:** Innovation, Excellence, Collaboration, Integrity, and Lifelong Learning.

### **C. Policy of the Organization, in Relation to the Intern Role:**

Technical Hub places a strong emphasis on hands-on experience and practical learning. Interns are integrated into ongoing projects and are given opportunities to develop their skills through real-world applications. The organization provides mentorship and resources to ensure that interns gain a comprehensive understanding of their chosen fields.

### **D. Organizational Structure:**

The organizational structure of Technical Hub is designed to foster collaboration and

innovation. Key departments include: Research and Development

Training and Development

Industry Partnerships

Student Support Services

### **E. Roles and Responsibilities of the Employees in which the Intern is Placed:**

Interns at Technical Hub are placed within the Training and Development department. Employees in this department are responsible for Designing and delivering training programs. Monitoring student progress and providing feedback. Developing new curricula that align with industry needs.

Collaborating with industry partners to ensure training relevance.

### **F. Performance of the Organization:**

Since its inception, Technical Hub has seen remarkable success. The organization has trained over X,000 students, with a placement rate of Y%. Technical Hub's partnerships with leading tech companies have expanded its reach and enhanced its market value. The initiative's innovative approach has positioned it as a leader in engineering education reform.

## **CHAPTER 3: Internship Part**

### **Description of the Activities/Responsibilities in the Intern Organization during Internship of AWS Development:**

#### **1. Working Conditions:**

The internship at Technical Hub provided a supportive and dynamic work environment conducive to learning and development. The workspace was equipped with modern amenities, promoting a professional yet collaborative atmosphere. Interns were encouraged to engage with mentors and peers to enhance their learning experience.

#### **2. Weekly Work Schedule:**

The intern followed a structured weekly schedule designed to balance training sessions, hands-on projects, and independent learning:

Monday to Saturday: 9:00 AM - 12:00 PM (special training sessions and workshops)

Sunday: Day off

#### **3. Equipment Used:**

Interns had access to state-of-the-art equipment and software essential for AWS development, including:

- High-performance computers equipped with the latest development tools and software.
- AWS Management Console and AWS CLI for hands-on cloud computing tasks.
- Integrated Development Environments (IDEs) such as PyCharm and Visual Studio Code for scripting and development.

- Networking tools for practical exercises in network configuration and troubleshooting.

#### **4. Tasks Performed:**

Throughout the internship, the intern engaged in various tasks that provided practical experience in AWS development:

**AWS Infrastructure Management:** Assisted in the setup, configuration, and management of AWS resources, including EC2 instances, S3 buckets, and VPCs.

**Automation with Boto3:** Developed and executed Python scripts using Boto3 to automate the creation, management, and monitoring of AWS resources.

**Backup and Recovery:** Implemented automated backup solutions for EBS volumes and tested recovery processes to ensure data integrity and availability.

**Security and Compliance:** Worked on securing AWS environments by configuring IAM roles, policies, and security groups, and ensuring compliance with best practices.

**Cost Optimization:** Analyzed AWS usage and provided recommendations for cost optimization, including rightsizing instances and utilizing reserved instances.

**Project Collaboration:** Participated in team projects, contributing to planning, development, and troubleshooting efforts.

**Training Sessions:** Attended and facilitated training sessions to enhance understanding of AWS services and best practices.

#### **5. Skills Acquired:**

The internship provided the intern with a wide range of valuable skills, including:

**Technical Proficiency:** Enhanced understanding and hands-on experience with AWS services and tools, including EC2, S3, VPC, and IAM.

**Scripting and Automation:** Gained proficiency in using Python and Boto3 for automating AWS tasks and managing cloud infrastructure.

**Problem-Solving:** Developed the ability to troubleshoot and resolve issues related to AWS configurations and performance.

**Security Awareness:** Learned to implement and manage security measures to protect cloud resources and ensure compliance.

**Project Management:** Improved skills in planning, executing, and managing projects in a collaborative environment.

**Communication:** Enhanced ability to communicate technical concepts effectively within a team and with mentors.

Overall, the internship at Technical Hub provided a comprehensive learning experience, blending theoretical knowledge with practical application. The skills and knowledge gained during this period have prepared the intern to meet the demands of the ever-evolving tech industry and excel in AWS development.



## WEEKLY OVERVIEW OF INTERNSHI ACTIVITIES

### ACTIVITY LOG FOR THE FIRST WEEK

1 <sup>ST</sup> WEEK	Date	Day	Brief Description of Daily Activity	Learning Outcomes
	16-05-2024	Thursday	On-boarding and introduction to company	About company, scope of internship and mentor introduction
	17-05-2024	Friday	Introduction to Github and Version Control System	Understanding concept of Version Control System using Git and Github
	18-05-2024	Saturday	Introduction to Operating Systems	Understanding the concept of Operating Systems in Servers

## **WEEKLY REPORT**

**WEEK – 1 (From Dt 16/05/2024 to Dt 18/05/2024)**

**Objective of the Activity Done:** Version Control System & Operating Systems

**Detailed Report:** Since the technology of Cloud Computing requires knowledge of Operating Systems, the activity conducted based on OS concepts understood in Week-1. By doing this activity the I am able to define the benefits of Version Control System and basic and main functionalities of Operating Systems.

## ACTIVITY LOG FOR THE SECOND WEEK

	Date	Day	Brief Description of Daily Activity	Learning Outcomes
2 <sup>nd</sup> WEEK	20-05-2024	Monday	Working with Different Operating Systems	Explore and work with Windows, Linux and Server versions of Operating Systems
	21-05-2024	Tuesday	Introduction to Client-Server Architecture	Understanding the Client and Server Architecture in real-time environments
	22-05-2024	Wednesday	Different types of Servers	Explore the usage and benefits of various servers such as Web, email, FTP, DHCP, FTP, SSH etc.
	23-05-2024	Thursday	Introduction to Networking	Understanding role of Networking and Communication in Datacenters and Cloud
	24-05-2024	Friday	Datacenters and Servers	Exploring the Datacenter environment and infrastructure
	25-05-2024	Saturday	Activity on infrastructure connectivity	Practical knowledge check on topics covered in the 1 <sup>st</sup> & 2 <sup>nd</sup> Week

# WEEKLY REPORT

WEEK – 2 (From Dt 20/05/2024 to Dt 25/05/2024)

**Objective of the Activity Done:** Understanding infrastructure connectivity

**Detailed Report:** In this activity, I was able to define and explore different types of servers and the way they connect to each other using IP Networking concepts. By the end of this activity, it is clearly understood that Client-Server architecture works, how the servers in datacenters placed and infrastructure of the cloud environment that is created by connecting multiple datacenters from different locations of the world.

## ACTIVITY LOG FOR THE THIRD WEEK

	Date	Day	Brief Description of Daily Activity	Learning Outcomes
<b>3<sup>rd</sup> WEEK</b>	27-05-2024	Monday	Introduction to Cloud Infrastructure	Understanding how the data centers connect in real-time
	28-05-2024	Tuesday	Cloud Computing Models	Explore Cloud computing models as per NIST
	29-05-2024	Wednesday	Cloud Services	Understanding Cloud services as per NIST
	30-05-2024	Thursday	Introduction To Virtualization	Exploring how the traditional computing transitioned to Virtualization
	31-05-2024	Friday	Virtual Servers of Linux	Understanding how the servers created in Virtual Environment
	01-06-2024	Saturday	Activity on Cloud and Virtualization	Practical knowledge check on topics covered until Week-3

# WEEKLY REPORT

WEEK – 3 (From Dt 27/05/2024 to Dt 01/06/2024)

**Objective of the Activity Done:** Cloud and Virtualization

**Detailed Report:** This activity is based on understanding the concepts covered as per Virtualization. By the end of this activity, I was able to explore how the traditional Operating Systems and infrastructure transitioned to virtual environment. It is also understood that virtualization is the pillar of cloud computing concept and how the cloud is built using the various concepts of virtualization.

The infrastructure virtualization is the core concept behind cloud computing that give the customers to manage their resources flexibly considering High Availability, Scalability, Security and Reliability concepts of various server types and cloud services.

## ACTIVITY LOG FOR THE FORTH WEEK

	Date	Day	Brief Description of Daily Activity	Learning Outcomes
4 <sup>th</sup> WEEK	03-06-2024	Monday	Introduction to Linux OS	Understanding why Linux is everywhere
	04-06-2024	Tuesday	Holiday	Holiday (AP Election Results)
	05-06-2024	Wednesday	Linux command syntax and basic commands	Understand the usage of Linux command syntax
	06-06-2024	Thursday	Linux User and Groups	Explore different types of users and groups in Linux
	07-06-2024	Friday	Basic file and directory permission in Linux	Exploring how the permissions work for file, directories, users & Groups
	08-06-2024	Saturday	Activity on Linux Operating System	Practical knowledge check on topics covered until Week-4

## WEEKLY REPORT

WEEK – 4 (From Dt 03/06/2024 to Dt 08/06/2024)

**Objective of the Activity Done:** Working with Linux Operating system

**Detailed Report:** Linux Operating System is considered as a one of the best Open-Source platforms deployed on most the server applications used today. Because of the flexibility of using the applications with integrated security options in Linux, this OS became a widely used platform preferred by major application providers in the world.

By the end of this activity I explore the command syntax of Linux Operating System, OS file system and hierarchy, working with files and directories, applying file and directory level permissions, creating users and working with different types of editors etc.



## ACTIVITY LOG FOR THE FIFTH WEEK

	Date	Day	Brief Description of Daily Activity	Learning Outcomes
5 <sup>th</sup> WEEK	10-06-2024	Monday	Introduction to AWS Services and Service Categories	Understanding AWS offered services and its categories
	11-06-2024	Tuesday	Understanding AWS Management Console	Explore AWS Management console using sandbox
	12-06-2024	Wednesday	AWS Regions and Availability Zones	Explore and Switch between AWS Regions
	13-06-2024	Thursday	Introduction to AWS Compute Services	Understanding AWS Compute service EC2 and related components
	14-06-2024	Friday	Working with EC2 Service	Exploring various launching options of EC2
	15-06-2024	Saturday	Activity on AWS Management Console and EC2 Service	Practical knowledge check on topics covered until Week-5

# WEEKLY REPORT

WEEK – 5 (From Dt 10/06/2024 to Dt 15/06/2024)

**Objective of the Activity Done:** AWS Management console and EC2 Service

**Detailed Report:** Since we understood the cloud infrastructure, Operating Systems, Server-Client and Linux OS concepts, we tried launching the server in AWS Cloud named EC2 instance using AWS Management console. By the end of this activity, I am able to explore and understand how the virtual server can be launched using AWS Cloud and connect to it using various connectivity methods.

It is clear that how the EC2 instances can be connected to on-premises to copy and migrate the data from on-premises servers to cloud instances.

## ACTIVITY LOG FOR THE SIXTH WEEK

6 <sup>th</sup> WEEK	Date	Day	Brief Description of Daily Activity	Learning Outcomes
	17-06-2024	Monday	Holiday	Holiday (Bakrid)
	18-06-2024	Tuesday	Web application deployment on Windows Server	Deploying sample web application on Windows EC2 server
	19-06-2024	Wednesday	EC2 Web application deployment on Linux Server	Deploying sample web application on Ubuntu and Amazon EC2 server
	20-06-2024	Thursday	EC2 Managing options for EC2 instance	EC2 managing options such as stop, start, terminate etc.
	21-06-2024	Friday	Ways of connecting to Linux EC2 instances using SSH. Sharing data between local and cloud EC2 instances	Exploring different ways of securely connecting to EC2 instance
	22-06-2024	Saturday	Activity on web application deployment using EC2 compute service	Practical knowledge check on topics covered until Week-6

## WEEKLY REPORT

WEEK – 6 (From Dt 17/06/2024 to Dt 22/06/2024)

**Objective of the Activity Done:** Web application deployment in cloud servers

**Detailed Report:** Deploying the applications in cloud is an easy and flexible task after understanding the EC2 instance concepts. I obtain practical knowledge on how the applications will be deployed in cloud instances and can be accessed using security groups created.

In this activity, I launched Linux and Windows server instances and deployed various kinds of web applications. Used the security groups to allow and deny access to some of the ports and IP Addresses.

## ACTIVITY LOG FOR THE SEVENTH WEEK

	Date	Day	Brief Description of Daily Activity	Learning Outcomes
7 <sup>TH</sup> WEEK	24-06-2024	Monday	Introduction to Storage technologies	Explore and understand various storage technologies
	25-06-2024	Tuesday	Block vs Object Storage services	Understanding difference between Block and Object storage
	26-06-2024	Wednesday	Working with AWS S3	Understanding S3 buckets and objects
	27-06-2024	Thursday	Volumes and Snapshots using AWS Elastic Block Storage	Exploring EBS volume and snapshot concepts
	28-06-2024	Friday	Working with EBS Snapshots	Create, Delete and reconnect EBS volume snapshots
	29-06-2024	Saturday	Activity on AWS Object and Block Storage	Practical knowledge check on topics covered until Week-7

## WEEKLY REPORT

WEEK – 7 (From Dt 24/06/2024 to Dt 29/06/2024)

**Objective of the Activity Done:** Working with AWS Object and block storage services.

**Detailed Report:** Data backup and recovery is vital process in server management. Backing up the data and volumes of servers in proper scheduling makes the task of Disaster Recovery an easier one. In this activity, explored on AWS Block storage service that allows the customer to take snapshots of volumes easily for backup purposes.

Also, deployed the static website using AWS S3 object storage service that is an unlimited storage service offered.

## ACTIVITY LOG FOR THE EIGHTH WEEK

	Date	Day	Brief Description of Daily Activity	Learning Outcomes
8 <sup>th</sup> WEEK	01-07-2024	Monday	Introduction to AWS Networking Service	Understanding AWS VPC Service
	02-07-2024	Tuesday	AWS Virtual Private Cloud and its components	Explore Subnet and Routing table components of AWS VPC
	03-07-2024	Wednesday	IPv4 Addressing and Subnetting	Understanding IPv4 vs IPv6. Subnetting IPv4 Addressing.
	04-07-2024	Thursday	Launching and Connecting resources in AWS VPC	Exploring AWS VPC by launching and connecting resources in it
	05-07-2024	Friday	Web deployment using AWS Elastic Beanstalk	Understanding serverless deployment using AWS Elastic Beanstalk
	06-07-2024	Saturday	Activity on AWS VPC and Elastic Beanstalk	Practical knowledge check on topics covered until Week-8

## WEEKLY REPORT

WEEK – 8 (From Dt 01/07/2024 to Dt 06/07/2024)

**Objective of the Activity Done:** AWS VPC and Elastic Beanstalk

**Detailed Report:** Deployed the sample web application using serverless technology. Elastic Beanstalk is the serverless service offered by AWS to deploy web applications on the go without focusing much on virtual infrastructure. This service comes under the category of Platform as a Service (PaaS).

Created an isolated network in cloud that is Virtual Private Cloud, as network service offered by AWS to create networks within regions. Launched the ec2 server resources in VPC and used concepts of Subnet, Internet Gateway, Routing Tables etc to connect successfully to these services.



## ACTIVITY LOG FOR THE NINTH WEEK

	Date	Day	Brief Description of Daily Activity	Learning Outcomes
9 <sup>th</sup> WEEK	08-07-2024	Monday	Introduction to Development on AWS	Exploring development services in AWS
	09-07-2024	Tuesday	Working with AWS Cloud Shell, AWS CLI & AWS Cloud9 IDE	Understanding CLI access and AWS Cloud9 IDE environments
	10-07-2024	Wednesday	Static website deployment in AWS S3 using Python for AWS SDK (boto3)	Understanding how to deploy the AWS services using boto3
	11-07-2024	Thursday	Secure access to cloud resources using AWS Identity and Access Management	Understanding how the access to cloud resources can be controlled using AWS IAM
	12-07-2024	Friday	Working with AWS NoSQL services and AWS DynamoDB	Differentiate between SQL and NoSQL databases and explore on NoSQL based AWS DynamoDB service
	13-07-2024	Saturday	Project Deployment	Hand-on project with use case applying knowledge of all topics covered until Week-9

## WEEKLY REPORT

WEEK – 9 (From Dt 08/07/2024 to Dt 13/07/2024)

**Objective of the Activity Done:** Working with AWS Development Services

**Detailed Report:** After going through the development services available in AWS, able to work with them by deploying and creating web applications and databases in cloud.

Worked with AWS SDK, AWS Cloud9, AWS CLI and AWS Code Whisperer to deploy the applications and database services. Used AWS SDK for Python that is also known as boto3 in AWS to deploy the static website in s3.

Configured the users and groups to access resources securely using IAM service. Used the NoSQL based AWS DynamoDB service to create tables and items related to web applications.

## ACTIVITY LOG FOR THE TENTH WEEK

10 <sup>th</sup> WEEK	Date	Day	Brief Description of Daily Activity	Learning Outcomes
	15-07-2024	Monday	Project Deployment	Hand-on project with use case applying knowledge of all topics covered until Week-9

## **WEEKLY REPORT**

WEEK – 10 (From Dt 13/07/2024 to Dt 15/07/2024)

**Objective of the Activity Done:** Project Deployment

### **Detailed Report:**

**Project Title:** Deploy an eCommerce Website on EC2

**Objective:** Set up and deploy a fully functional eCommerce website on an Amazon EC2 instance

#### **1. Requirement Analysis:**

- Determine the specific requirements for the eCommerce website, including functionalities and technologies.

#### **2. Environment Setup:**

- Provision an Amazon EC2 instance with an appropriate configuration based on anticipated traffic and resource needs.
- Configure the EC2 instance with the necessary operating system and software stack.

#### **3. Website Deployment:**

- Install and configure the eCommerce platform on the EC2 instance.
- Upload and configure the website files, including themes, plugins, and extensions.

#### **4. Security Configuration:**

- Implement security measures such as firewalls, SSL certificates, and access controls to protect the website and user data.
- Regularly update and patch software to address vulnerabilities.

**5. Testing:**

- Conduct thorough testing of the website to ensure all functionalities work as intended.
- Perform load testing to assess the website's performance under various traffic conditions.

**6. Launch and Monitoring:**

- Launch the eCommerce website and monitor its performance using AWS tools and third-party services.
- Set up automated scaling and load balancing if needed to handle varying traffic loads.

**7. Maintenance and Support:**

- Provide ongoing maintenance, including software updates, security patches, and performance optimizations.
- Offer technical support to address any issues or improvements.

**Deliverables:**

- Fully functional eCommerce website deployed on Amazon EC2.
- Documentation including setup procedures, configurations, and security measures.
- Testing reports and performance assessments.

## CHAPTER 5: PROJECT

### TITLE: DEPLOY AN ECOMMERSE WEBSITE ON EC2.

#### ➤ Introduction

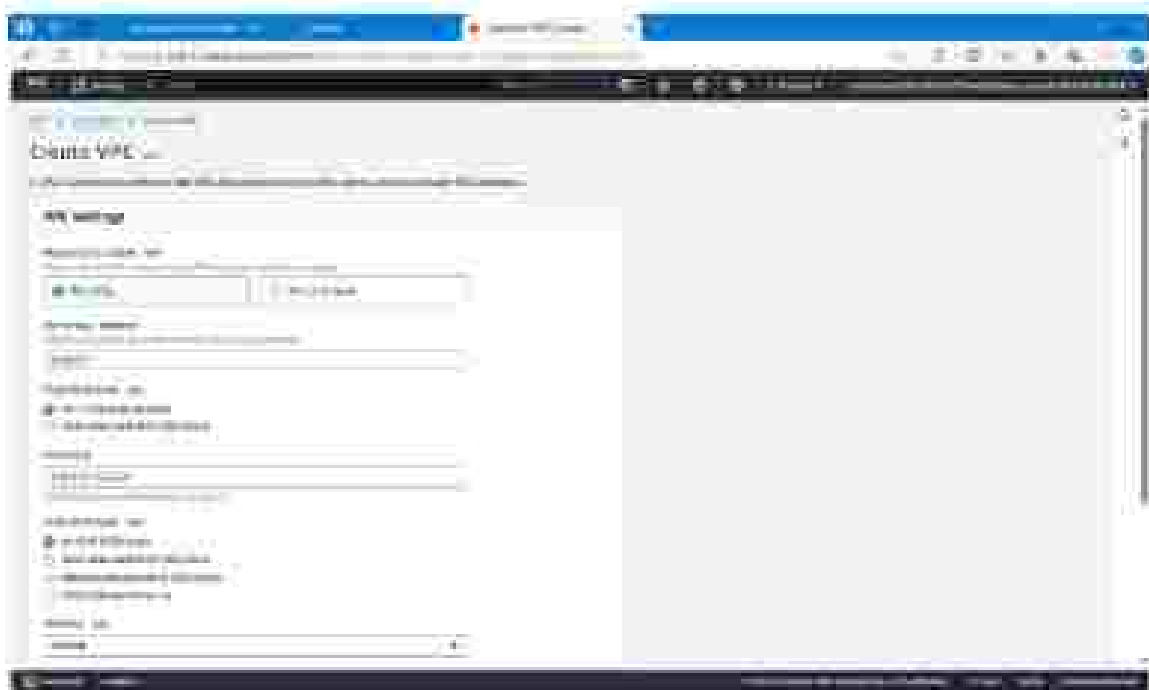
This guide provides step-by-step instructions for setting up a Virtual Private Cloud (VPC) in Amazon Web Services (AWS) and launching an EC2 instance within that VPC. A VPC is a virtual network dedicated to your AWS account, allowing you to isolate your resources and control network settings.

#### ➤ Creating a Virtual Private Cloud (VPC)

1. Sign in to AWS Management Console
  2. Go to the [AWS Management Console](#).
  3. Log in with your AWS credentials.
- Access the VPC Dashboard
    1. In the AWS Management Console, navigate to [Services](#).



- **Create a VPC and Configure VPC Settings**



1. Click on **Create VPC**.

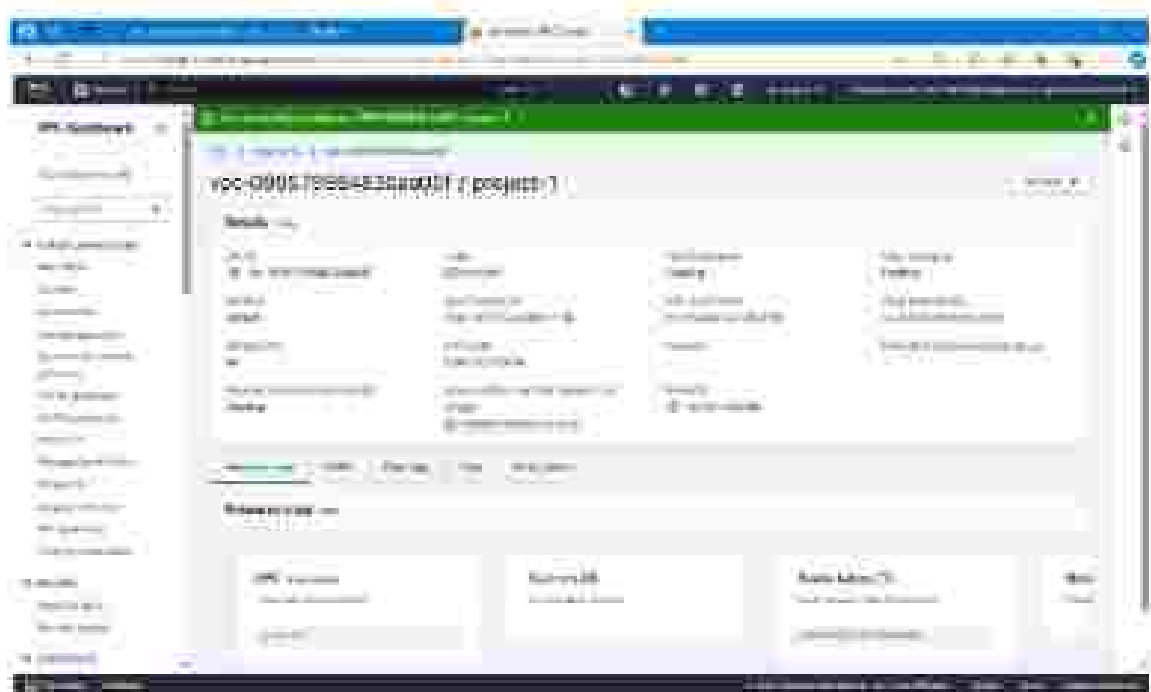
2. **Name tag:** Enter a name for your VPC.

3. **IPv4 CIDR block:** Specify the IPv4 CIDR block. This defines the IP address range for your VPC.

4. **IPv6 CIDR block:** Choose an IPv6 CIDR block if needed.

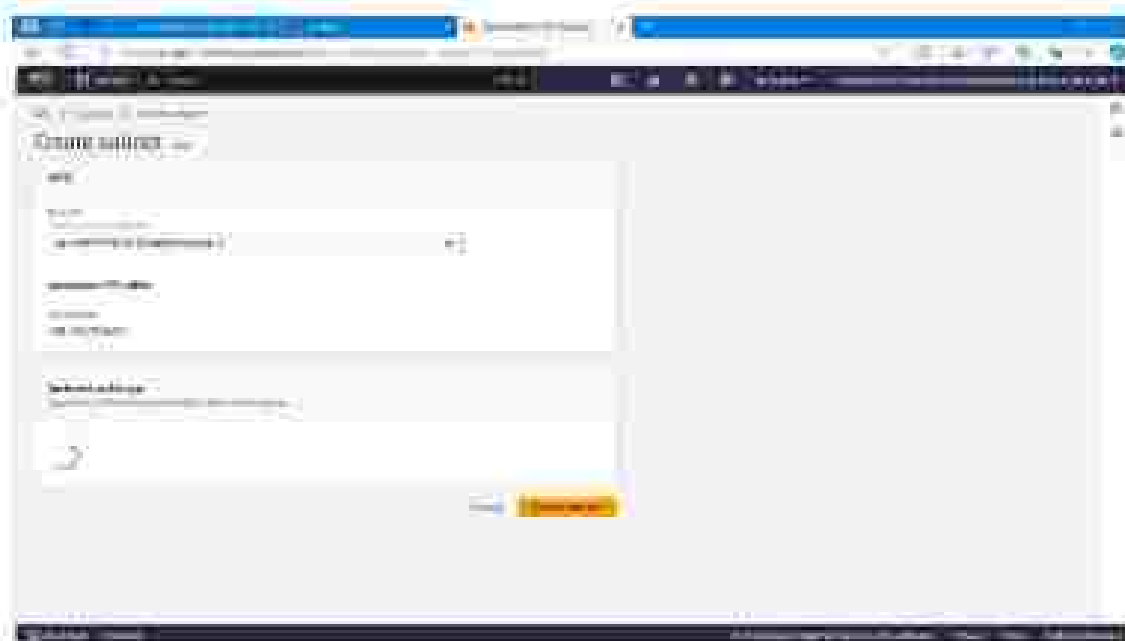
5. **Tenancy:** Select **Default** for standard usage or **Dedicated** if you need a dedicated instance hardware.

- 6. Click Create VPC.



- Create Subnets

In the VPC Dashboard, select Subnets from the left-hand menu.





Click **Create subnet**.

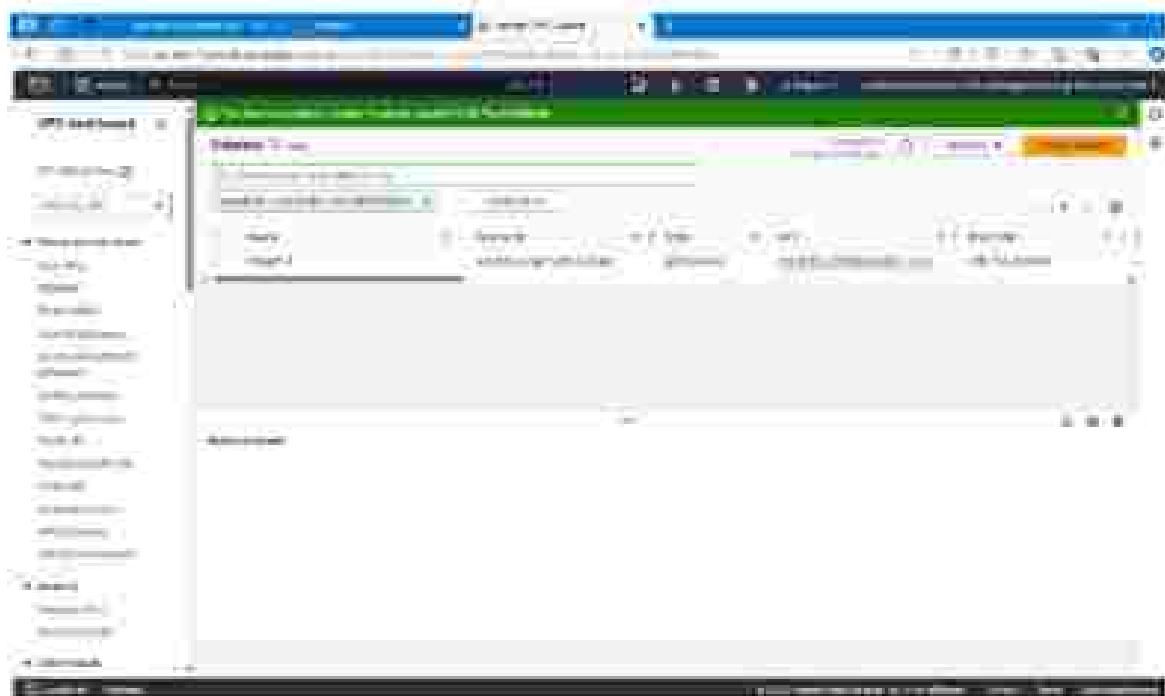
- **Configure Subnet Settings:**

1. **Name tag:** Enter a name for the subnet.

2. **VPC:** Select the VPC you created.

3. **Availability Zone:** Choose an Availability Zone.

4. **IPv4 CIDR block:** Specify a CIDR block for the subnet. Click **Create subnet**.



- **Create an Internet Gateway:**

Click **Create internet gateway**.

**Configure Settings:**

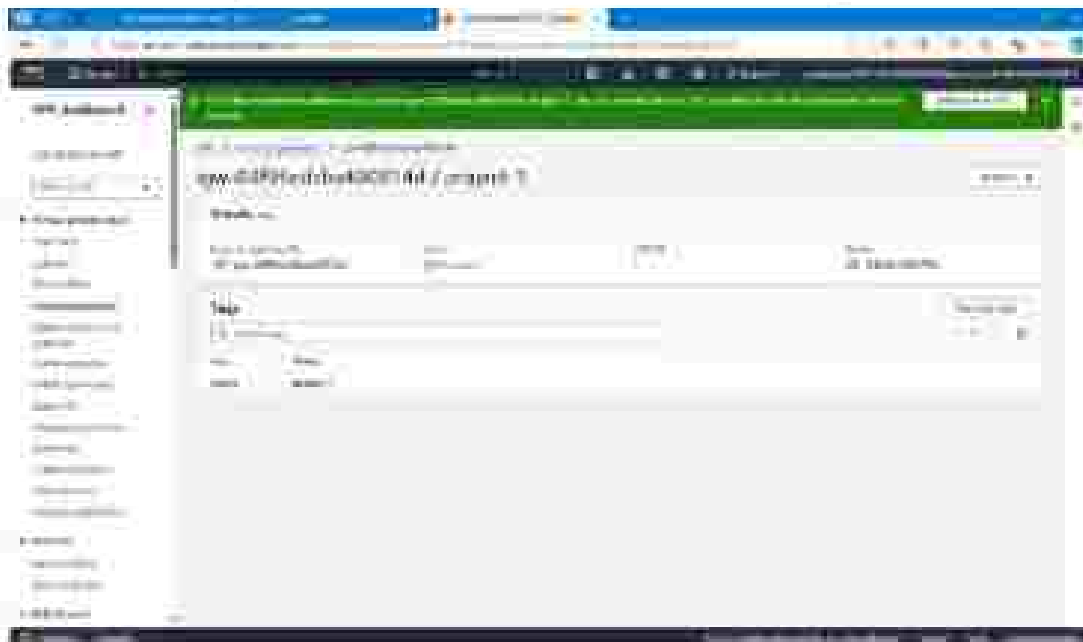
1. **Name tag:** Enter a name for the Internet Gateway.

2. Click **Create internet gateway**.

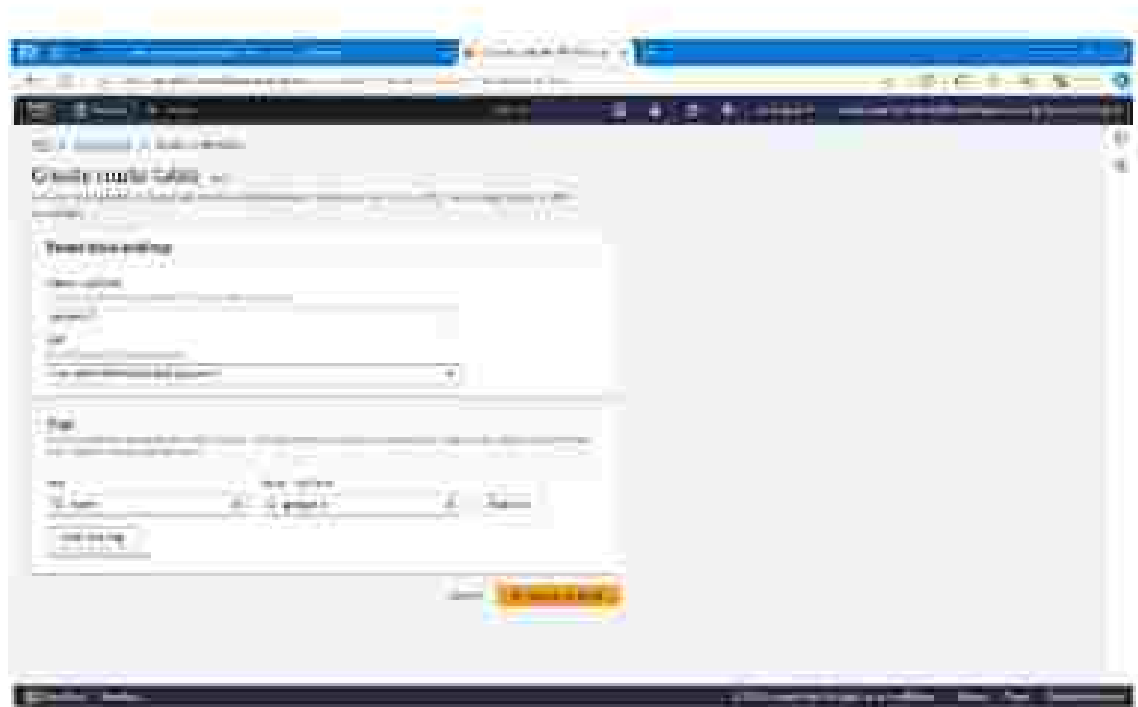
3. After creating the Internet Gateway, select it from the list and click Actions; then Attach to VPC.

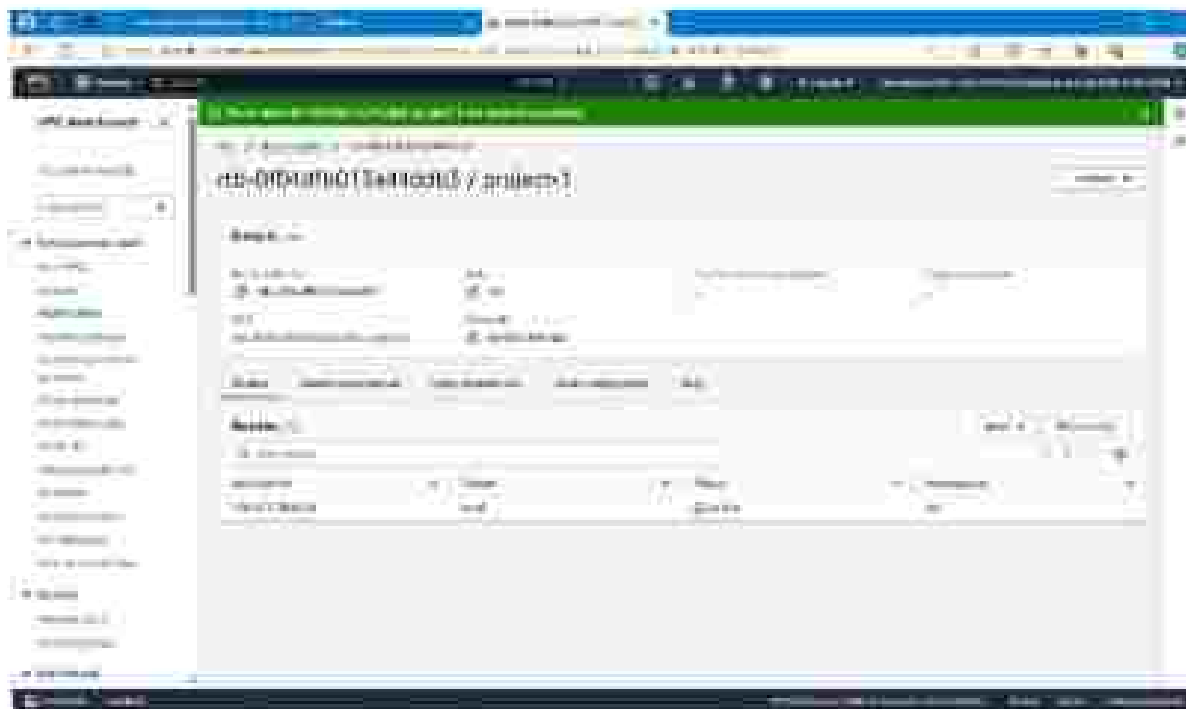


4. Choose the VPC you created and click Attach Internet Gateway.

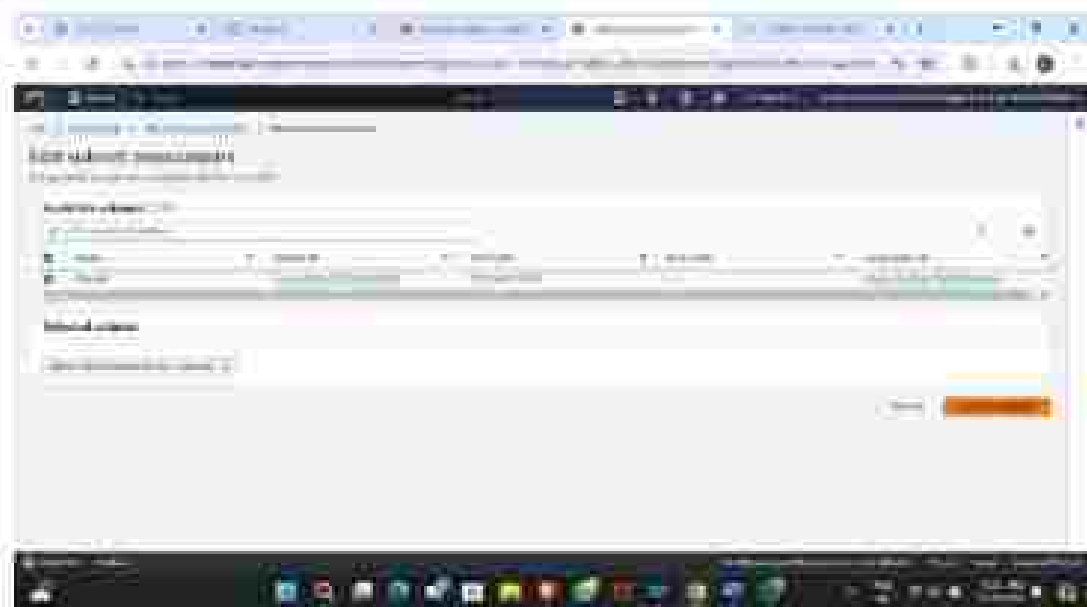


- Create Route Table and Attach to subnets.





1. Choose the main route table associated with your VPC (or create a new one if necessary).
2. Click Edit routes and then Add route.
3. Destination: Enter 0.0.0.0/0 to allow all outbound traffic.
- 4 Target: Select the Internet Gateway you created.
5. Click Save routes.





## ➤ Launch an EC2 Instance in the VPC

- Access the EC2 Dashboard
- In the AWS Management Console, navigate to Services.
- Under Compute, select EC2.
- Launch an EC2 Instance
- Click Launch Instance



- Choose an Amazon Machine Image (AMI): Select an AMI that suits your needs



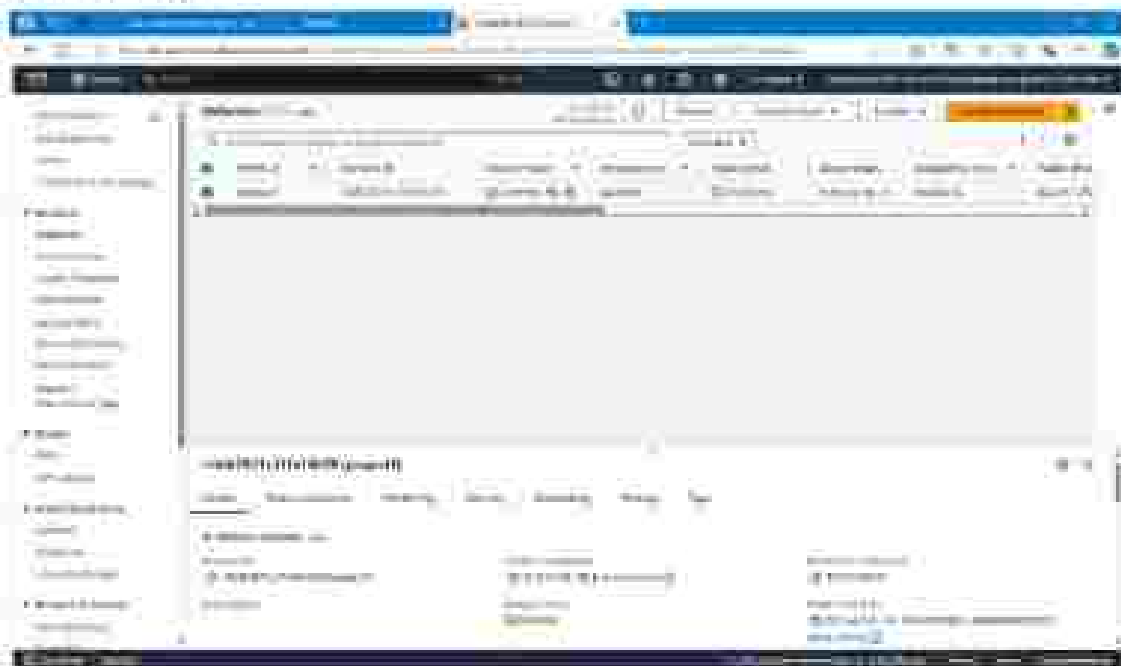
- **Network:** Select the VPC you created
- **Subnet:** Choose the subnet within the VPC.
- **Auto-assign Public IP:** Choose Enable if you need the instance to be accessible from the internet.
- **Configure other settings as needed**



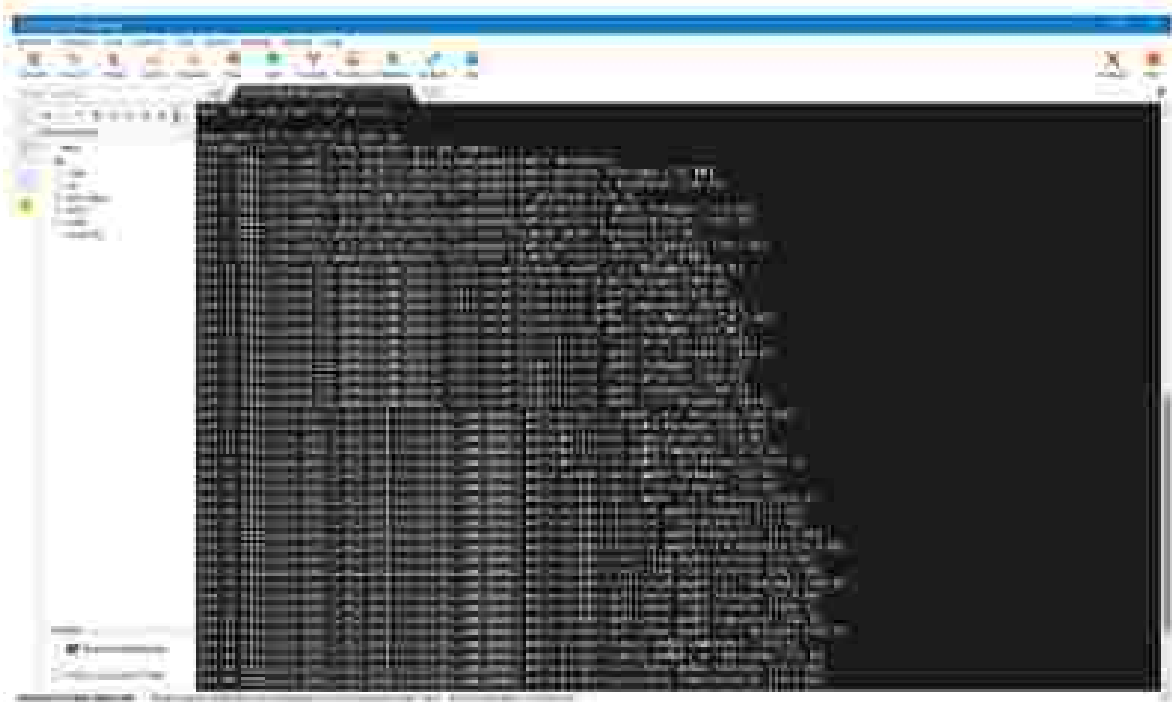
- **Configure Security Group:**



- **Launch Instance**

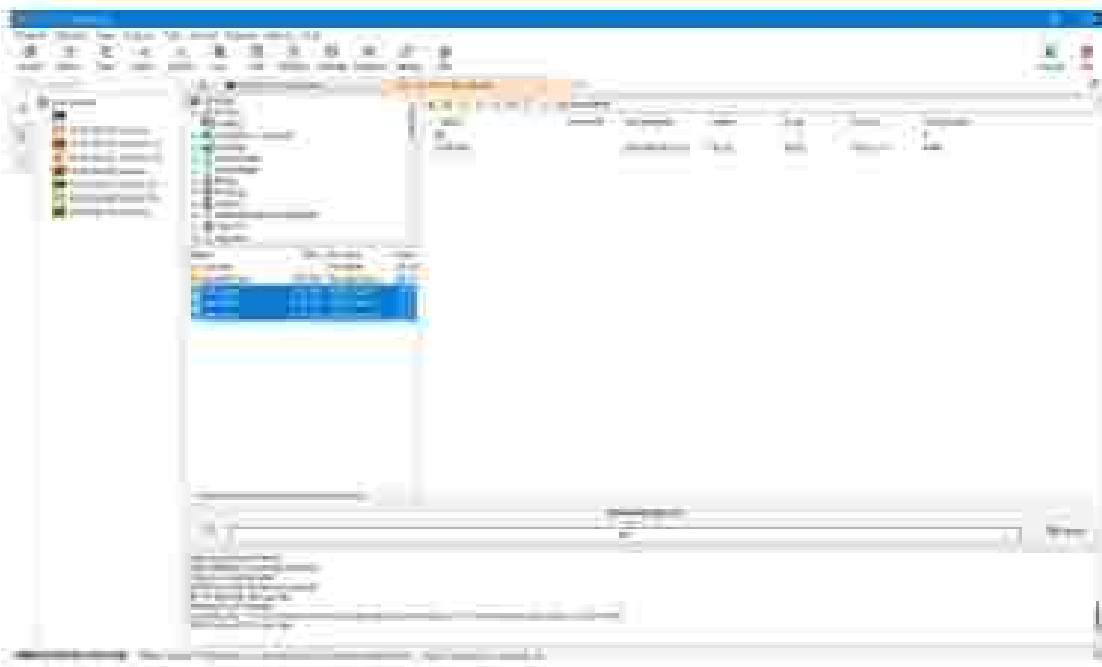


- Through MobaXterm we connect to Ubuntu Server through SSH





- After connecting the ubuntu go to /var/www/html location  
And delete the default the html file.
- Move the ecommerce files to the /var/www/html location and restart the ubuntu server



- The EC2 Instance Public Ip Address Browse on the any of the browser you get the web application page



## CHAPTER 6: Outcomes Description

### Project Outcomes: Hosting an E-commerce Website on EC2

#### 1. Infrastructure Setup and Configuration

- Launched and configured an EC2 instance tailored for hosting a dynamic e-commerce website.
- Selected appropriate instance types (e.g., t3.medium or higher) for optimal performance based on projected traffic.

#### 2. Web Server and Application Server Setup

- Installed and configured Apache or Nginx as the web server to handle dynamic requests.
- Successfully integrated server-side programming environments like PHP, Node.js, or Python required by the chosen e-commerce platform (Magento, WooCommerce, etc.).

#### 3. Database Setup and Management

- Set up and configured a database server (MySQL, MariaDB) on the EC2 instance or using Amazon RDS for scalable database management.
- Ensured secure database connections and configured database backups for disaster recovery.

#### 4. E-commerce Platform Deployment

- Installed and deployed a popular e-commerce platform such as Magento, WooCommerce, or OpenCart.
- Configured the platform with necessary plugins, themes, and modules to enable e-commerce functionality (cart, payment gateways, etc.).

#### 5. SSL Encryption and HTTPS Setup

- Successfully implemented SSL certificates using Certbot and Let's Encrypt to enable HTTPS, securing transactions and protecting user data.

- Ensured compliance with security standards for handling sensitive customer information.

## 6. Domain and DNS Configuration

- Assigned an Elastic IP to the EC2 instance for a static IP address.
- Configured DNS settings to link a custom domain to the EC2 instance, making the e-commerce site accessible via the domain.

## 7. Performance Optimization

- Enabled caching mechanisms (Memcached, Redis) to improve site speed and reduce server load.
- Integrated Amazon CloudFront (CDN) to deliver content faster across global locations, improving website performance.
- Implemented server-side optimization techniques for faster page load times and user experience improvements.

## 8. Scalability and Auto-Scaling

- Configured Auto Scaling to automatically increase or decrease the number of EC2 instances based on traffic demand, ensuring high availability and performance under load.

## Student Self Evaluation of the Short-Term Internship

**Student Name:** VADAPARTHILAKSHMINARAYANA

**Registration No:** 22P31A42C6

**Duration of Internship:** 2 Months

**From:** 16-05-2024

**To:** 13-07-2024

**Date of Evaluation:**

**Organization Name & Address:** Technical Hub Pvt Ltd, Surampalem, 533101.

Please rate your performance in the following areas

### Rating Scale: Letter grade of CGPA calculation to be provided

1	Oral communication	1	2	3	4	5
2	Written communication	1	2	3	4	5
3	Interaction ability with community	1	2	3	4	5
4	Positive Attitude	1	2	3	4	5
5	Self-confidence	1	2	3	4	5
6	Ability to learn	1	2	3	4	5
7	Work Plan and organization	1	2	3	4	5
8	Quality of work done	1	2	3	4	5
9	Time Management	1	2	3	4	5
10	Achievement of Desired Outcomes	1	2	3	4	5
OVERALL PERFORMANCE						

**Student Signature**

## Evaluation by the Supervisor of the Intern Organization

**Student Name:** VADAPARTHI LAKSHMI NARAYANA

**Registration No:** 22P31A42C6

**Duration of Internship:** 2 Months

**From:** 16-05-2024 **To :** 15-07-2024

**Date of Evaluation:**

**Organization Name & Address:** Technical Hub Pvt Ltd, Surampalem, 533101

**Name & Address of the Supervisor with Mobile Number**

Please rate the student's performance in the following areas:

Please note that your evaluation shall be done independent of the Student's self evaluation.

**Rating Scale:** 1 is lowest and 5 is highest rank

1	Oral communication	1	2	3	4	5
2	Written communication	1	2	3	4	5
3	Interaction ability with community	1	2	3	4	5
4	Positive Attitude	1	2	3	4	5
5	Self-confidence	1	2	3	4	5
6	Ability to learn	1	2	3	4	5
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<b>OVERALL PERFORMANCE</b>						

**Signature of the Supervisor**