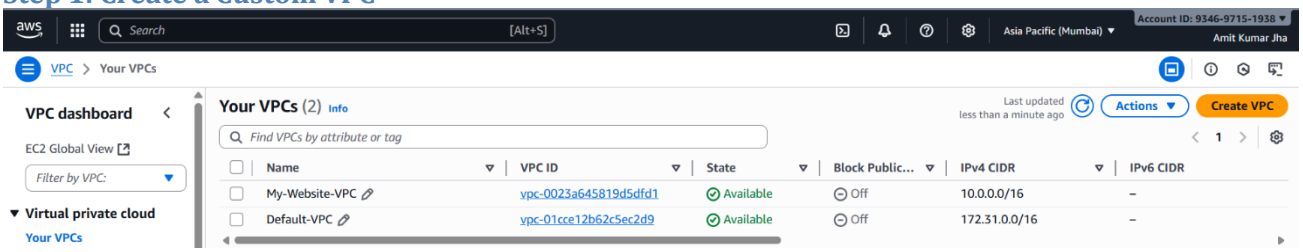
Website Deployment on AWS using Custom VPC and Monitoring

Project Overview

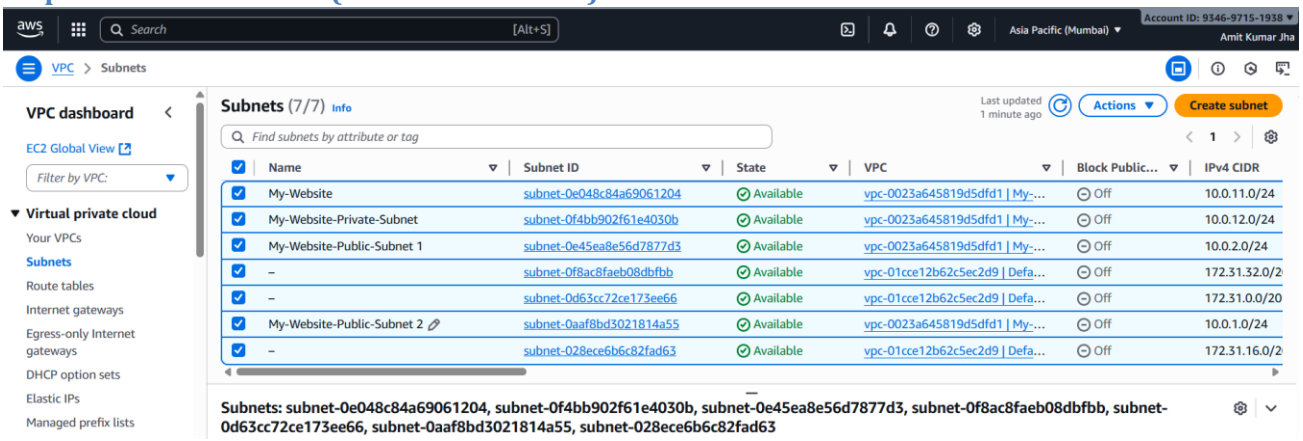
This project demonstrates website hosting on AWS by creating a custom VPC with Auto Scaling, Application Load Balancer, and monitoring using CloudWatch. It also integrates Simple Notification Service (SNS) for alerts and notifications, ensuring continuous availability, scalability, and operational visibility.

Step 1: Create a Custom VPC



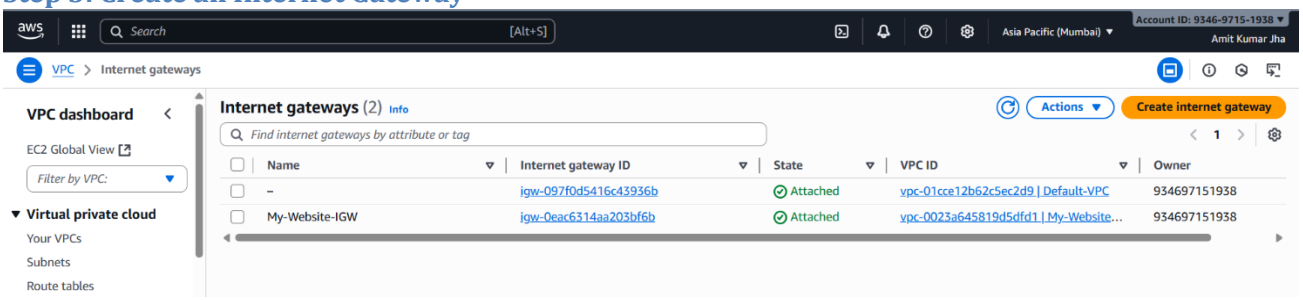
Screenshot 1: Custom VPC Creation

Step 2: Create 2 Subnets (Public and Private)



Screenshot 2: Subnet Configuration

Step 3: Create an Internet Gateway



Screenshot 3: Internet Gateway Setup

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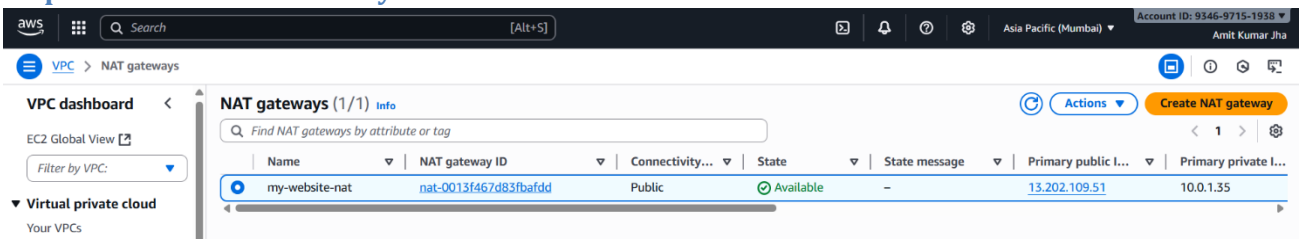
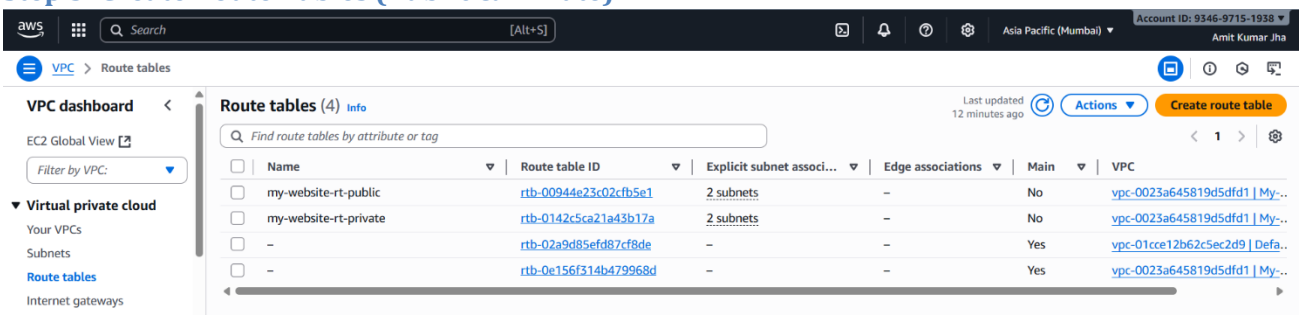
Step 4: Create a NAT Gateway



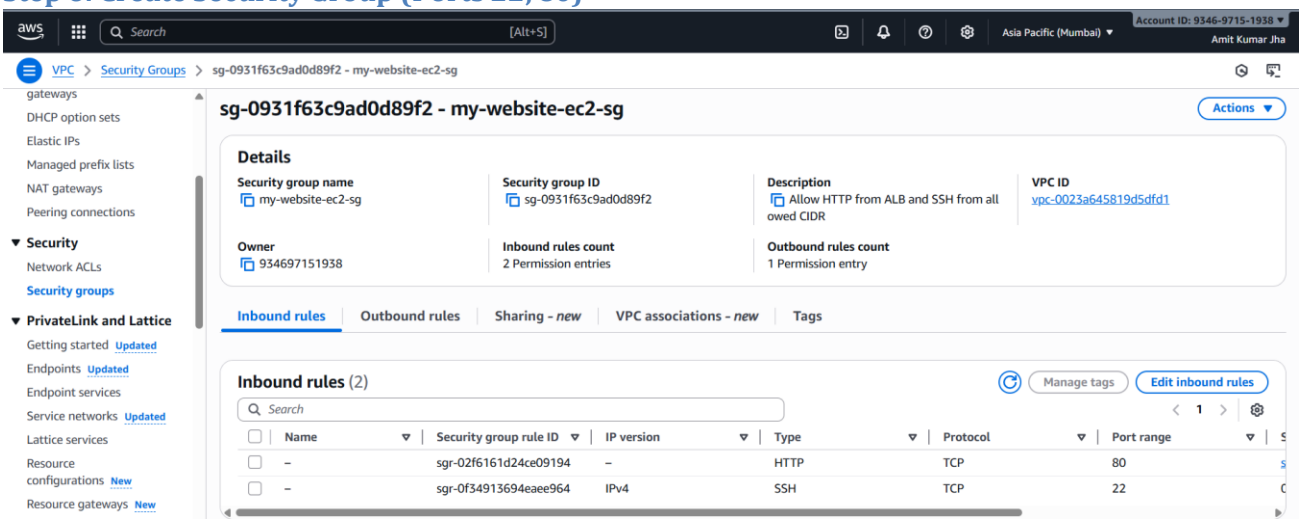
Screenshot 4: NAT Gateway Setup

Step 5: Create Route Tables (Public & Private)



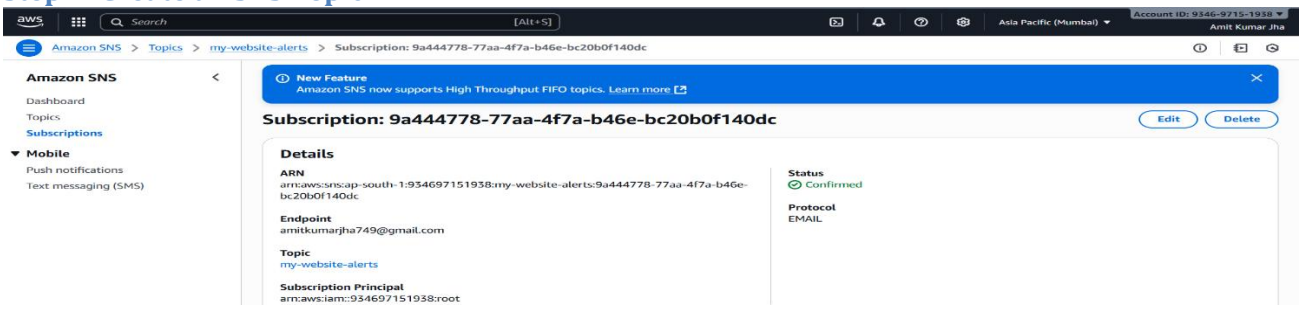
Screenshot 5: Route Tables Setup

Step 6: Create Security Group (Ports 22, 80)



Screenshot 6: Security Group Rules

Step 7: Create an SNS Topic



Screenshot 7: SNS Topic Creation and Subscription

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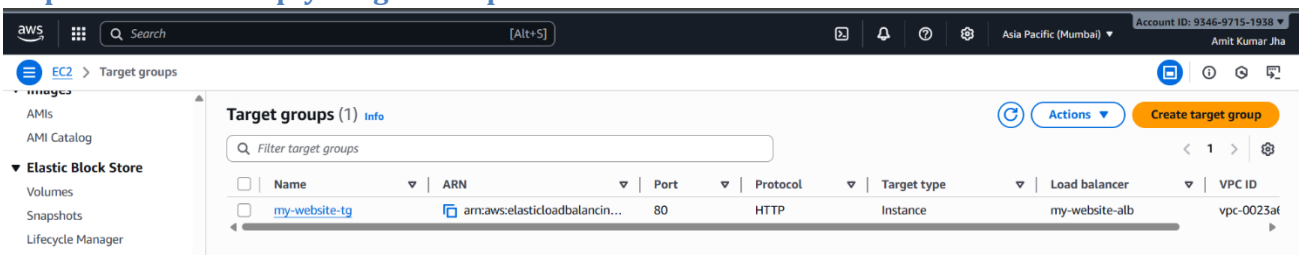
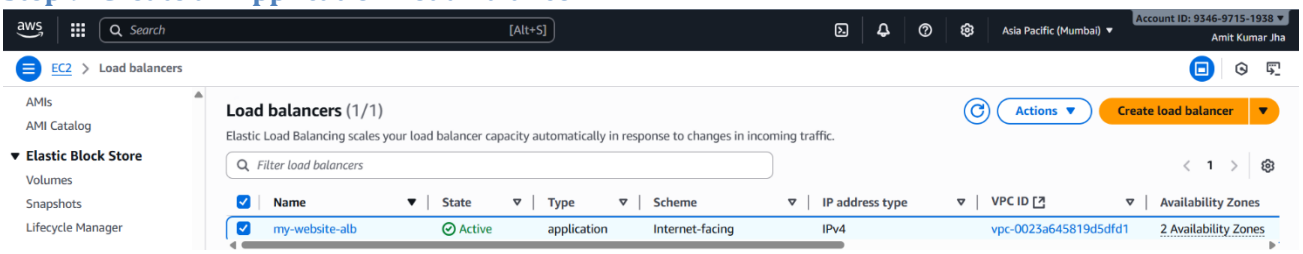
Step 8: Create an Empty Target Group



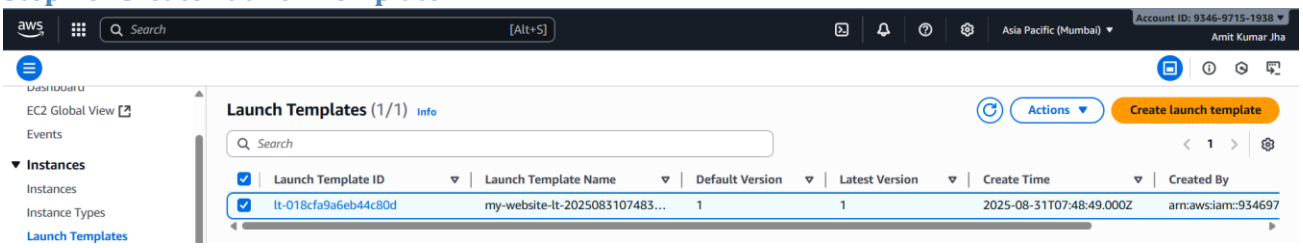
Screenshot 8: Target Group Setup

Step 9: Create an Application Load Balancer



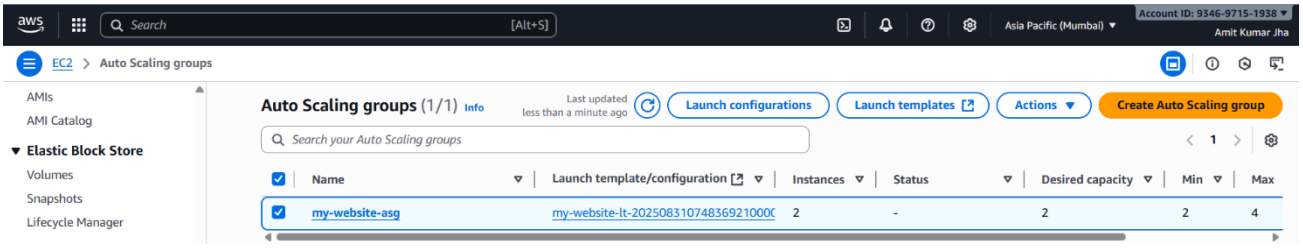
Screenshot 9: ALB Creation

Step 10: Create Launch Template



Screenshot 10: Launch Template Setup

Step 11: Create an Auto Scaling Group



Screenshot 11: Auto Scaling Group

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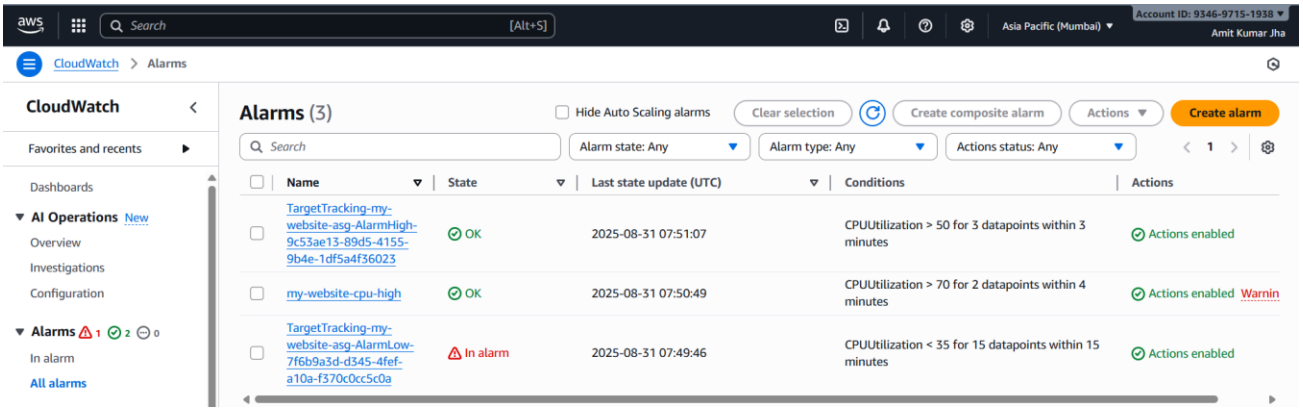
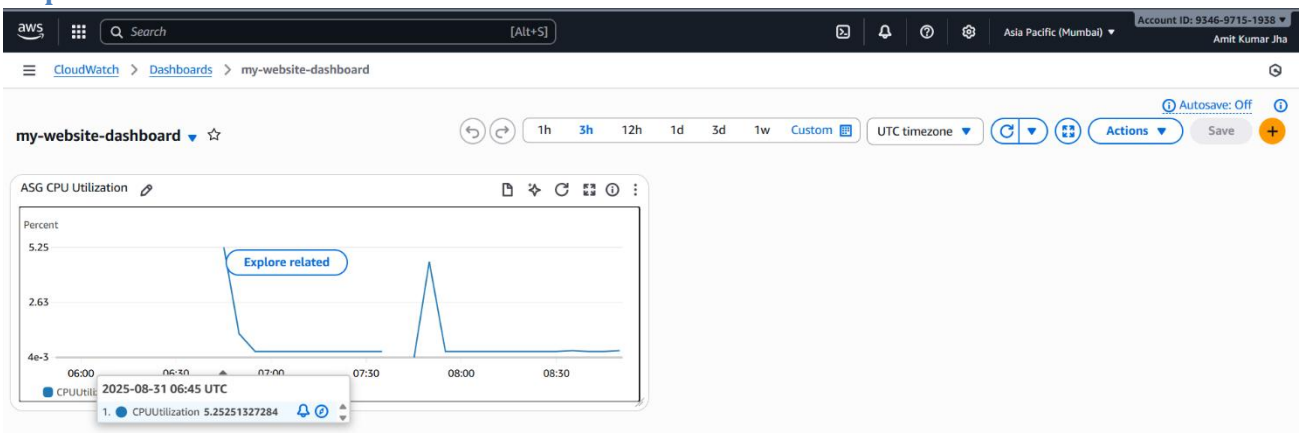
Step 12: Create 2 CloudWatch Alarms



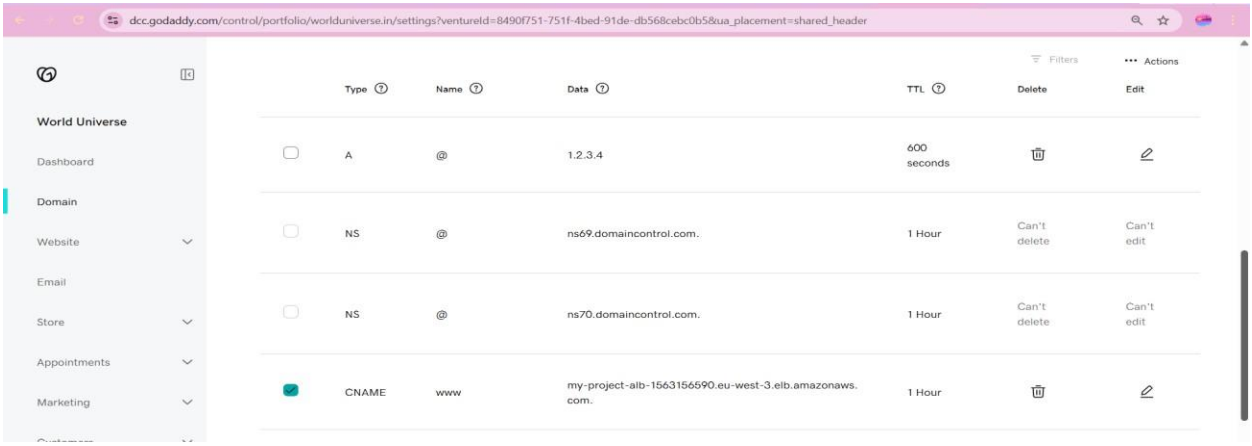
Screenshot 12: CloudWatch Alarm

Step 13: Create a CloudWatch Dashboard



Screenshot 13: Monitoring Dashboard

Step 14: Attach Domain to Load Balancer



Screenshot 14: DNS Mapping

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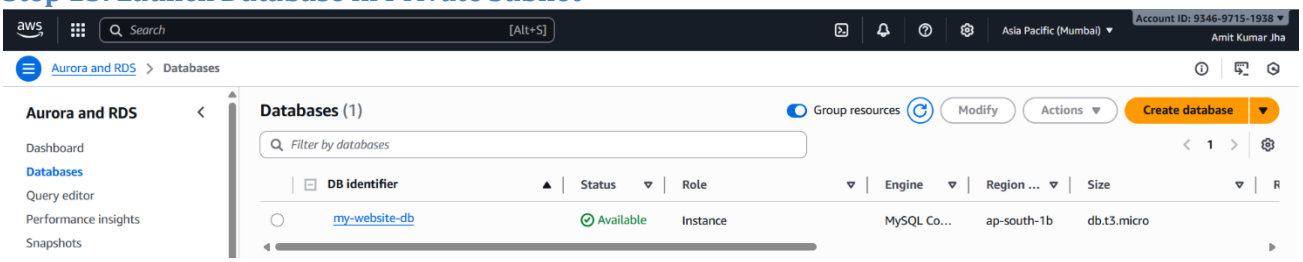
Step 15: Launch Database in Private Subnet

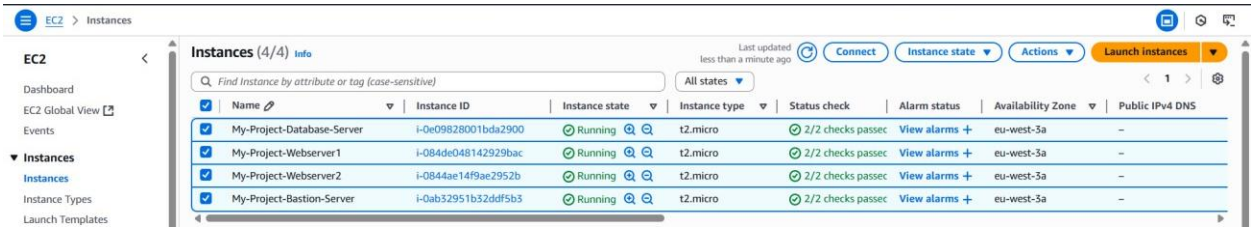


Screenshot 15: DB Instance Setup

Step 16: Outputs & Screenshots

This step showcases the visual output of the hosted website, including various pages such as Home, About, Contact, and Services. These screenshots demonstrate that the website is fully functional, accessible via the domain, and properly served through the load balancer.

Screenshot 16: Deployed Server Instances




```
mysql> show tables;
+----------------------------+
| Tables_in_JayshriProjectdb |
+----------------------------+
| Employee                   |
+----------------------------+
1 row in set (0.01 sec)

mysql> select * from Employee;
+-------------+---------+-------------+------------+--------+-------------------+------------+------------+
| employee_id | name    | designation | department | salary | email_id          | phone_no   | city       |
+-------------+---------+-------------+------------+--------+-------------------+------------+------------+
|           1 | Rohan   | Developer   | IT         |  60000 | rohan@gmail.com   | 2147483647 | Pune       |
|           2 | Neha    | HR          | HR         |  55000 | neha@gmail.com    | 2147483647 | Mumbai     |
|           3 | Ravi    | Analyst     | Finance    |  58000 | ravi@gmail.com    | 2147483647 | Mumbai     |
|           4 | Sneha   | Team Lead   | IT         |  80000 | sneha@gmail.com   | 2147483647 | Aurangabad |
|           5 | Sai     | Salesman    | Sales      |  45000 | sai@gmail.com     | 2147483647 | Nagpur     |
|           6 | Roshani | Accountant  | Finance    |  52000 | roshani@gmail.com | 2147483647 | Pune       |
|           7 | Rahul   | DevOps Engg | IT         |  67000 | rahul@gmail.com   | 2147483647 | Nagpur     |
|           8 | Mayur   | Intern      | IT         |  15000 | mayur@gmail.com   | 2147483647 | Pune       |
+-------------+---------+-------------+------------+--------+-------------------+------------+------------+
8 rows in set (0.00 sec)

mysql>
```

Screenshot 17: Database Table In Private Subnet

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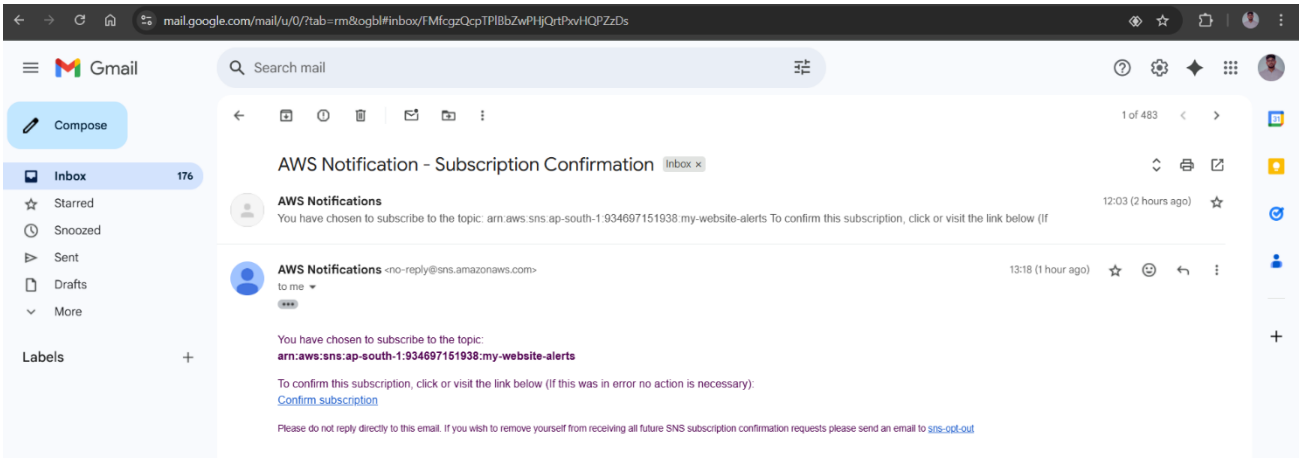
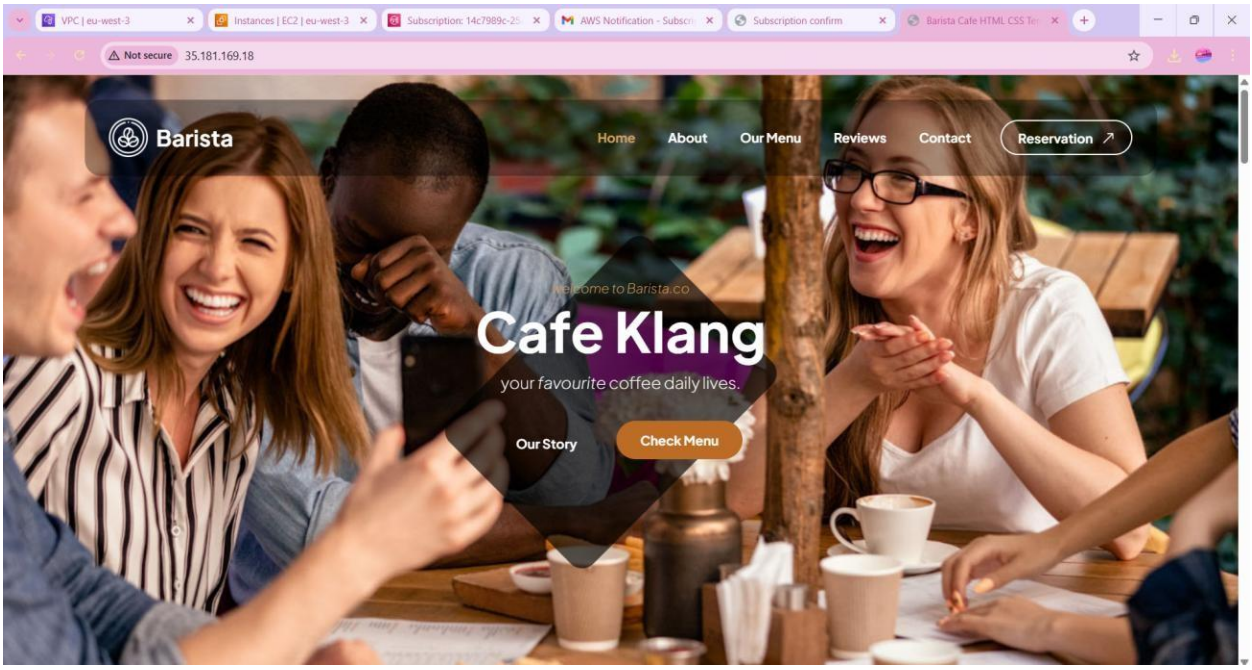
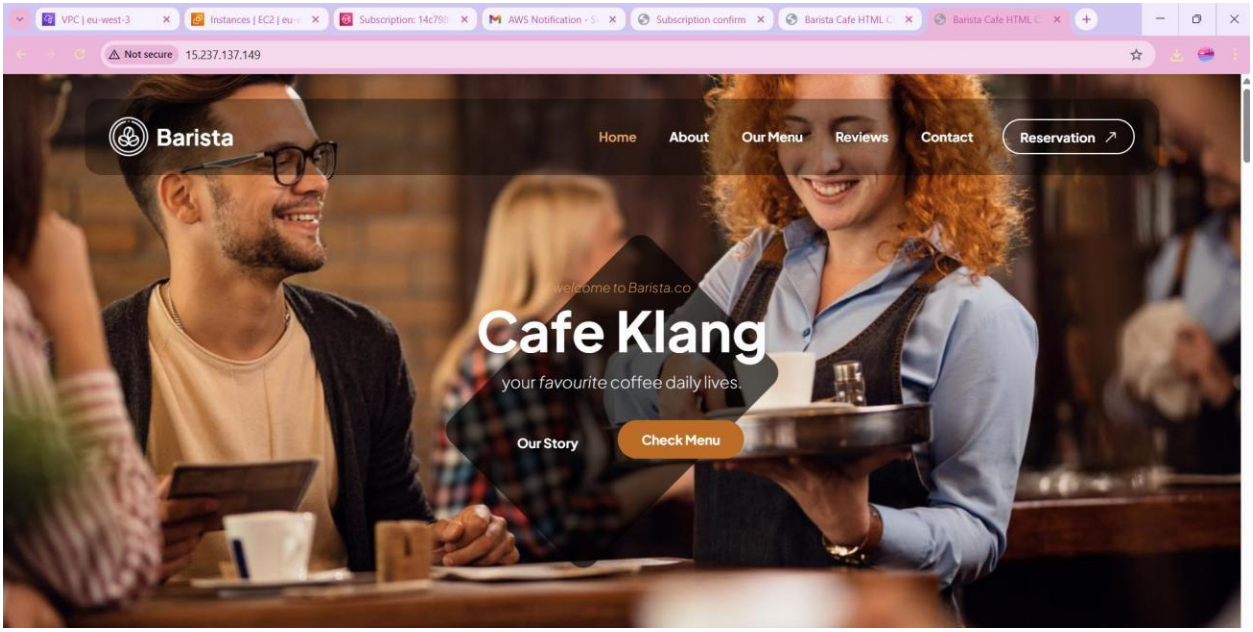


Screenshot 18: SNS Notification Received in Gmail



Screenshot 19: Output of My_Project_Webserver1 via Public IP



Screenshot 20: Output of My_Project_Webserver2 via Public IP

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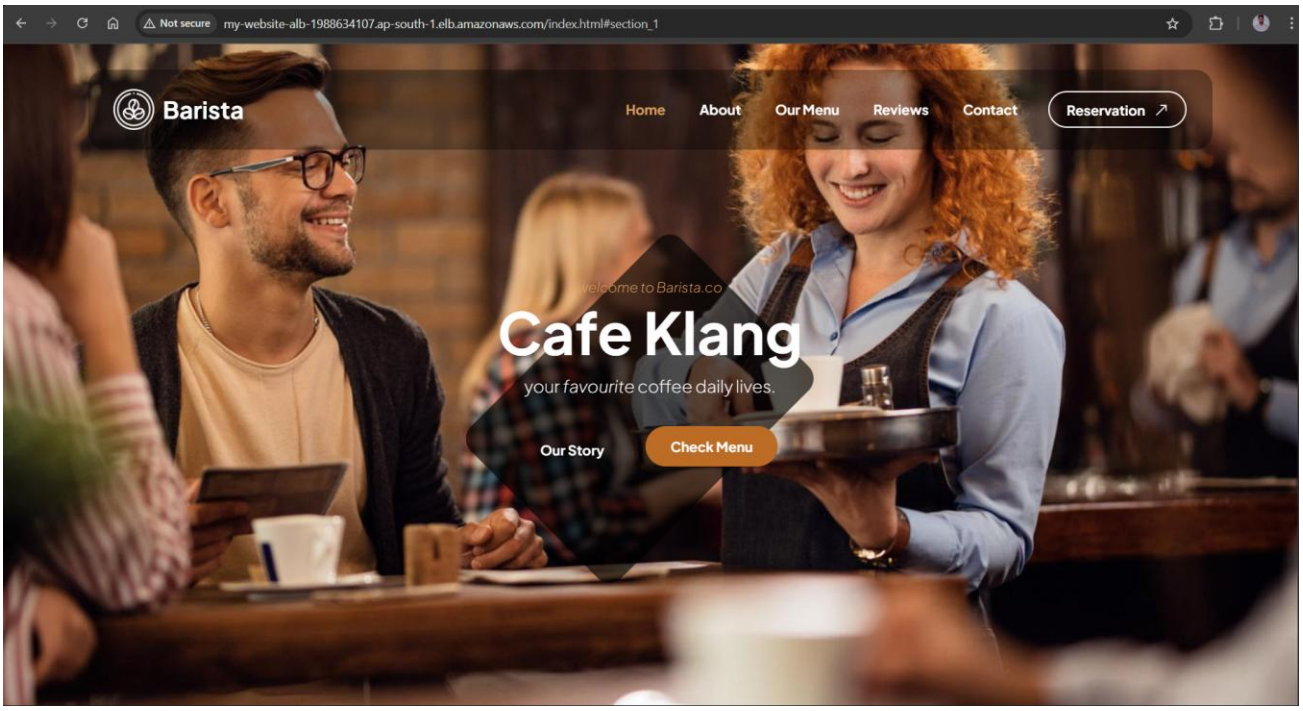
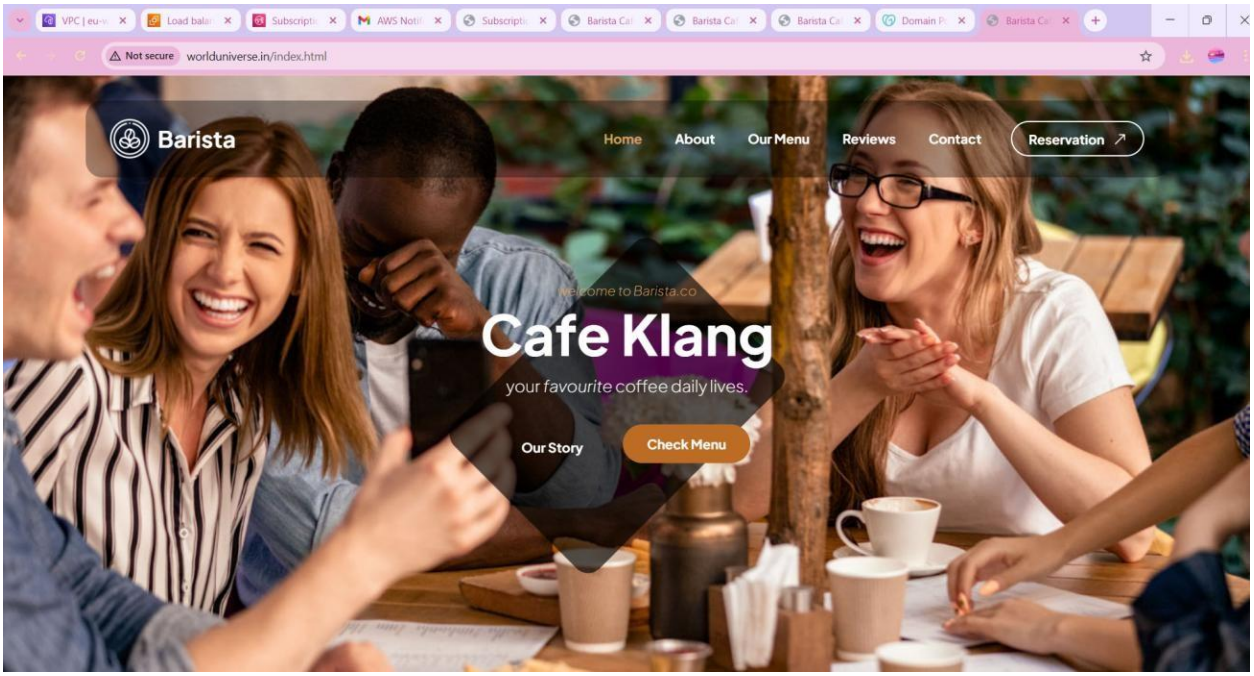


Screenshot 21: Application Output via Load Balancer DNS



Screenshot 22: Final Deployed Website Home Page with Domain

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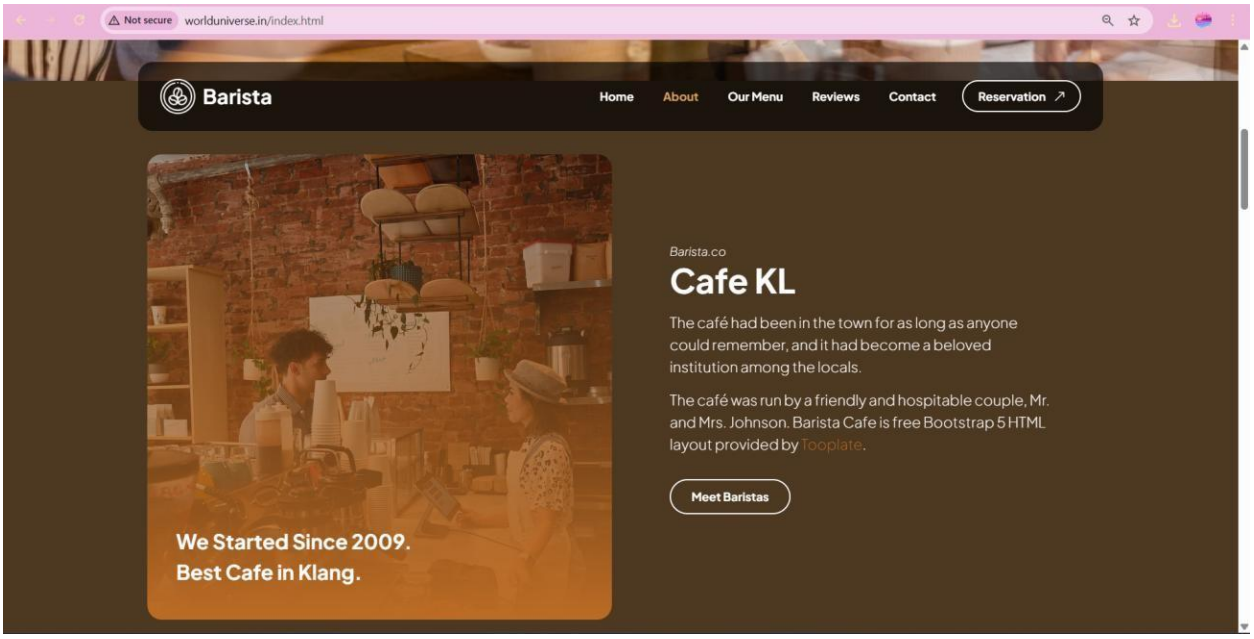
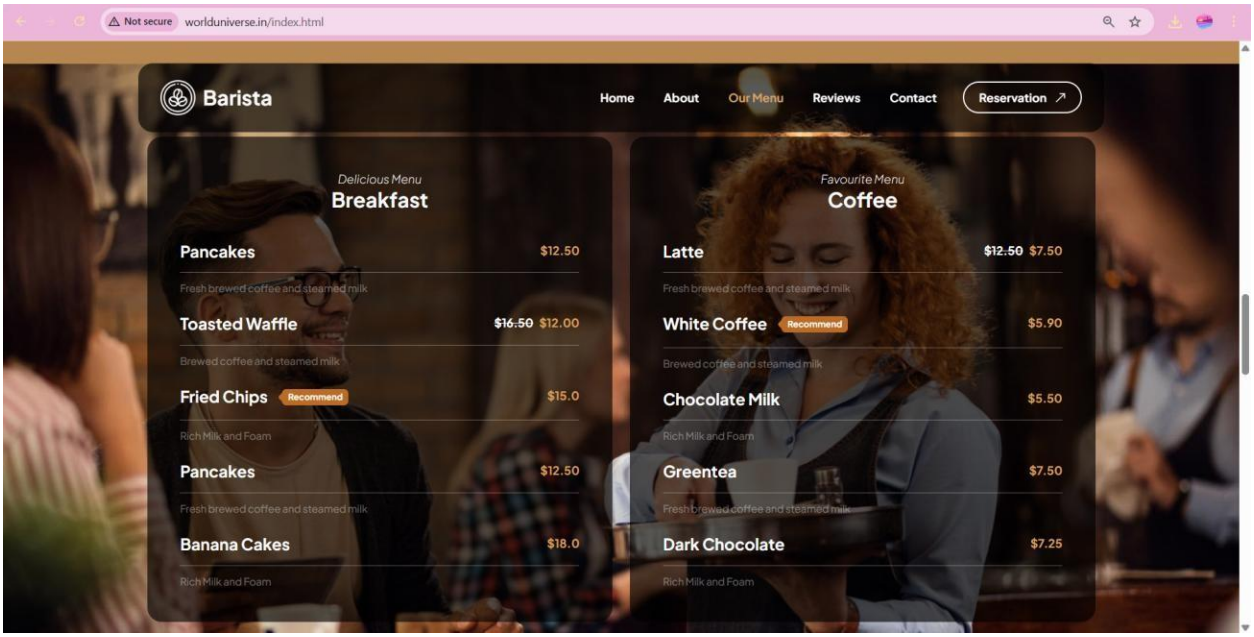


Screenshot 23: Deployed Website About Page Using Domain



Screenshot 24: Deployed Website Our Menu Section via Domain

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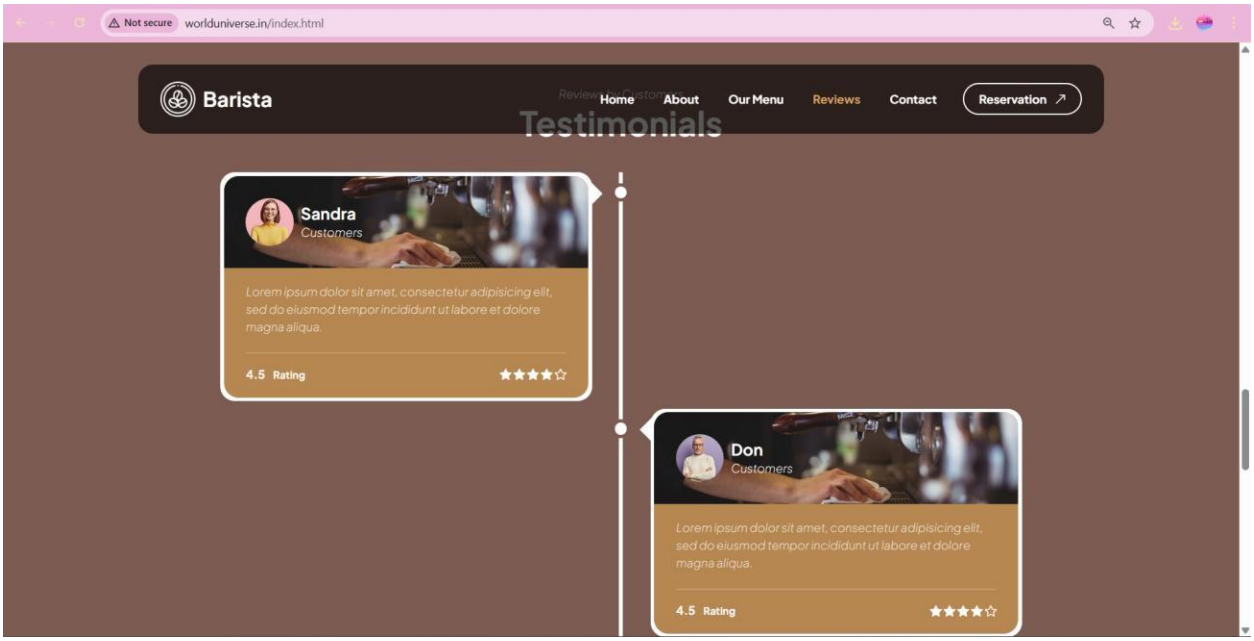
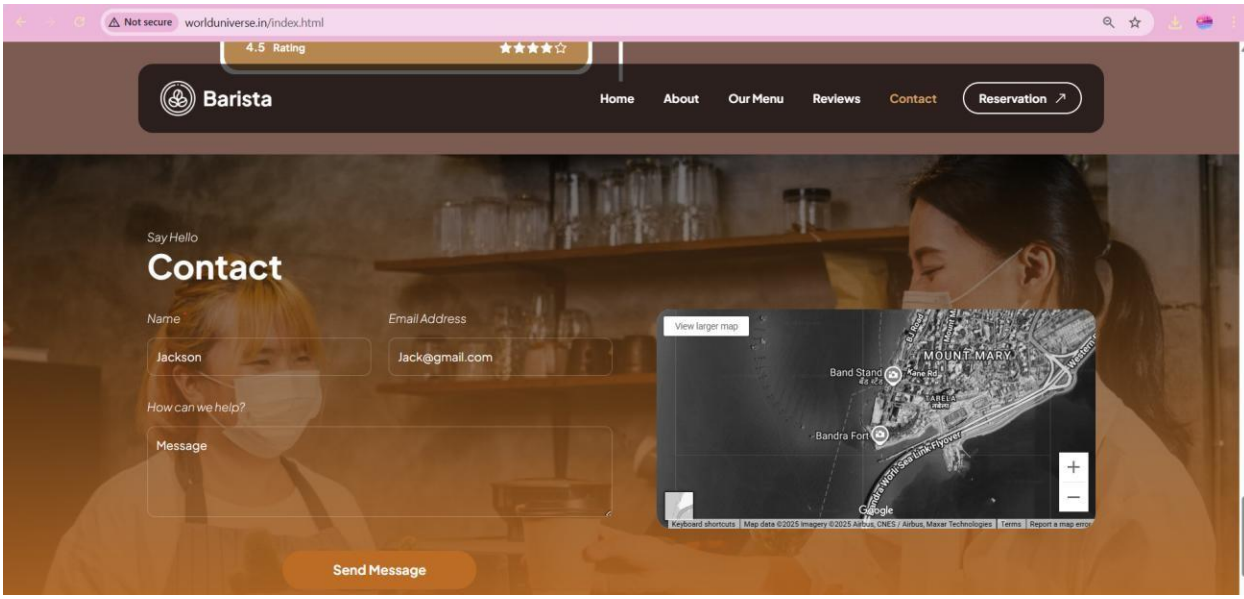


Screenshot 25: Customer Reviews Section Using Domain



Screenshot 26: Contact Page of Final Deployed Website

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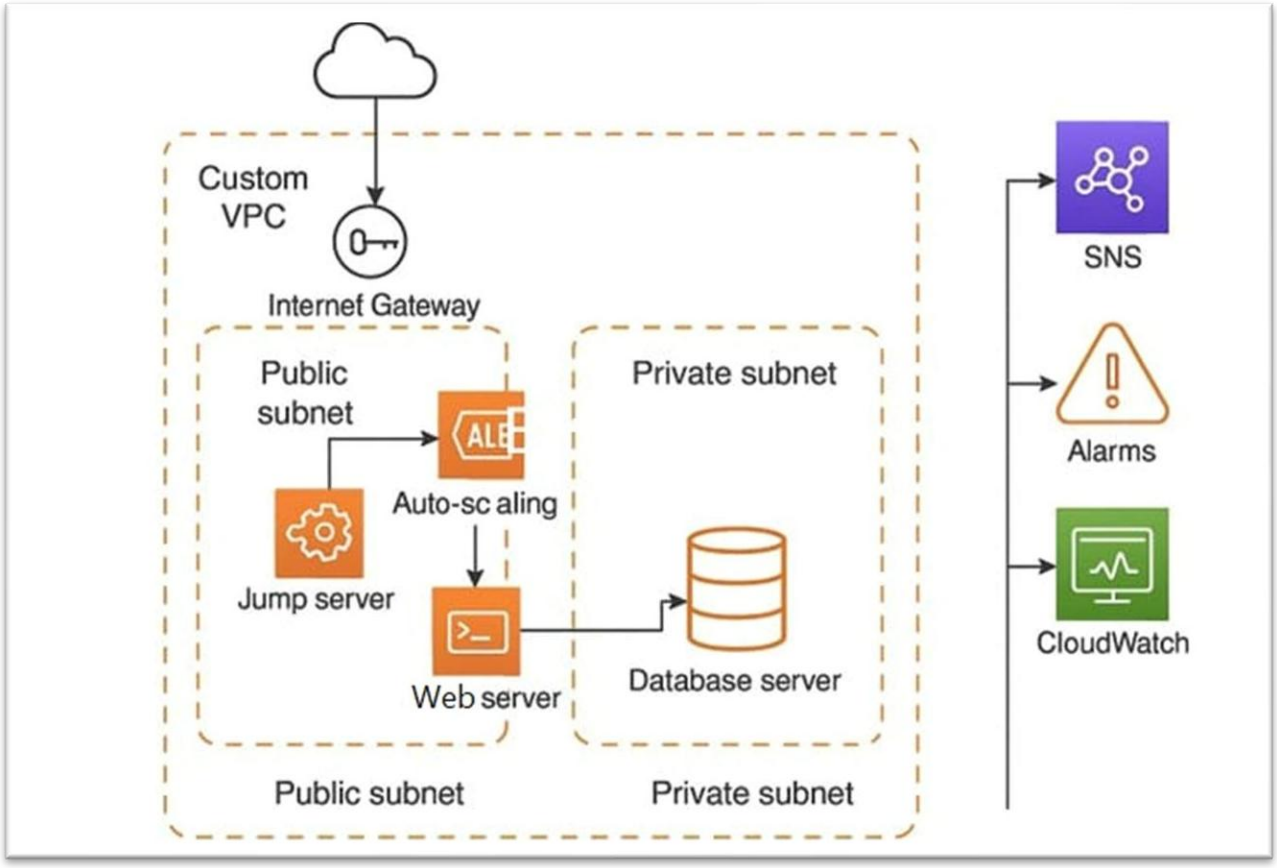
Project Summary

This project focuses on deploying a reliable, scalable, and secure web hosting infrastructure using core AWS services. Below are the key highlights of the implementation:

- Hosted a scalable and highly available website on AWS using a custom Virtual Private Cloud (VPC).
- Implemented Auto Scaling and Application Load Balancer (ALB) for efficient traffic management and fault tolerance.
- Enabled monitoring using Amazon CloudWatch with configured alarms and dashboards for performance visibility.
- Integrated AWS SNS for real-time alert notifications to ensure quick response to system events.
- Deployed a secure architecture by isolating the database server in a private subnet.



Screenshot 27: AWS Project Architecture Diagram

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