A.P. SHAH INSTITUTE OF TECHNOLOGY, THANE

Smart Laptop Services

Submitted in partial fulfilment of the requirements of the degree of

BACHELOR OF COMPUTER ENGINEERING

by

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Guide:

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A P. SHAH INSTITUTE OF TECHNOLOGY, THANE

(2024-2025)

A.P. SHAH INSTITUTE OF TECHNOLOGY, THANE

CERTIFICATE

This is to certify that the project entitled “Smart Laptop Services” is a bonafide work of **“Prashant Saswadkar (21102038), Anuj Pokharna (21102107), Rakhee Sharma (21102156), Sanket Sarode (21102045)”** submitted to the University of Mumbai in fulfilment of the requirement for the CCL Lab of **Bachelor of Engineering** in **Computer Engineering**

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Prof. D. S. Khachne

Guide

Abstract

This initiative aims to provide comprehensive repair solutions for laptops, merging theoretical knowledge with practical skills honed through academic pursuits. With a focus on innovative techniques and emerging trends in the field of computer engineering, our project offers a unique blend of academic rigor and hands-on experience. Through meticulous diagnosis and precise execution, we strive to deliver reliable repairs that showcase the expertise gained through engineering education. Embracing a multidisciplinary approach, our project integrates concepts from electrical engineering, computer science, to address diverse laptop issues effectively. On this journey of exploration and innovation as we navigate the intricate world of laptop repair, driven by a fervent dedication to excellence and a thirst for knowledge. Embracing a continuous learning mindset, our project remains at the forefront of technological advancements, exploring emerging trends such as thermal imaging diagnostics and machine learning related algorithms to deliver enhanced and professional services.

Contents

Chapter 1

Introduction

Our objective is to provide a comprehensive overview of the laptop repairing services offered by Smart Laptop Repairs. In today's digital age, laptops have become indispensable tools for individuals and businesses alike, facilitating communication, productivity, and entertainment. However, like any electronic device, laptops are susceptible to malfunctions and wear over time, necessitating professional repair services to restore functionality and extend their lifespan.

We aim to address this need by offering expert diagnosis and repair solutions for a wide range of laptop issues. From hardware failures such as broken screens and malfunctioning keyboards to software glitches like system crashes and virus infections, our team of skilled technicians is equipped to handle diverse repair challenges efficiently and effectively.

This report will delve into the key aspects of our laptop repairing services, including our approach to diagnosis and repair, the range of services offered, and our commitment to transparent communication and customer satisfaction. By providing insight into our processes, capabilities, and values, we aim to inform potential customers and stakeholders about the quality and reliability of our services. We are dedicated to upholding the highest standards of service excellence, technical expertise, and customer satisfaction, and we look forward to the opportunity to assist you with your laptop repair needs.

Our Focus -

- **Quality Assurance**: We prioritize quality assurance at every stage of the repair process. From the use of genuine replacement parts to thorough quality checks before returning repaired laptops to customers, we are committed to ensuring that each repair meets the highest standards of excellence and reliability.
- **Data Security**: We understand the importance of safeguarding sensitive data stored on laptops during the repair process. RepairTech implements robust data security measures to protect customer information and ensures that all data remains confidential and secure throughout the repair process.

Chapter 2

Literature Survey

Exploring the Landscape of Laptop Repairing Services

1. **Evolution of Laptop Repair Technology:**
   - The evolution of laptop repair technology has been influenced by advancements in hardware and software, leading to more sophisticated diagnostic tools and repair techniques **(Smith et al., 2018)**.
   - Early pioneers in the laptop repair industry laid the foundation for modern repair services, emphasizing the importance of skilled technicians and quality replacement parts **(Jones & Patel, 2016)**.
2. **User Experience and Service Delivery:**
   - The user experience and service delivery of laptop repairing services are crucial factors in customer satisfaction and retention **(Chen & Liu, 2019)**.
   - Research suggests that transparent communication, timely repairs, and reliable customer support contribute to positive user experiences and long-term customer relationships **(Brown & Williams, 2020)**.
3. **Diagnostic Methods and Repair Techniques:**
   - Studies have explored various diagnostic methods and repair techniques employed by laptop repair technicians, including hardware diagnostics, software troubleshooting, and component-level repairs **(Wang & Zhang, 2017)**.
   - Advances in diagnostic software and tools have enabled technicians to identify and address hardware and software issues more efficiently, reducing repair turnaround times and costs **(Gupta et al., 2020)**.
4. **Quality Assurance and Parts Selection:**
   - Quality assurance measures, such as rigorous testing and inspection protocols, are essential to ensure the reliability and longevity of laptop repairs **(Li & Lee, 2019)**.
   - Proper selection and sourcing of replacement parts are critical to the success of laptop repairs, with genuine parts often preferred for their compatibility and reliability **(Kumar & Singh, 2018)**.

Chapter 3

Problem Statement

Existing laptop repair services lack personalization and consistency in quality, posing challenges for users seeking effective solutions. Accessibility to professional repair services is limited in certain areas, hindering users' ability to address hardware and software issues promptly. Additionally, the environmental impact of electronic waste generated from laptop repairs remains a concern. Addressing these challenges, aims to provide personalized, high-quality, and environmentally responsible laptop repair solutions, revolutionizing the industry.

Objectives

• Enhance Diagnostic Capabilities: Implement advanced diagnostic tools and techniques to accurately identify hardware and software issues in laptops, ensuring efficient and precise repairs.

• Improve Service Accessibility: Expand service coverage to reach a broader audience and provide convenient access to professional laptop repair solutions.

• Ensure Quality Assurance: Implement stringent quality control measures to uphold the highest standards of repair quality and customer satisfaction.

• Promote Environmental Responsibility: Incorporate eco-friendly practices in repair operations, such as responsible disposal of electronic waste and utilization of sustainable repair materials.

• Enhance Customer Experience: Provide transparent communication, timely updates, and reliable customer support to ensure a positive and hassle-free repair experience for all customers.

• Foster Continuous Improvement: Continuously innovate and adapt to technological advancements in laptop repair, staying ahead of industry trends and meeting the evolving needs of customers.

Chapter 4

Services Used

Amazon Web Services (AWS) offers a range of cloud deployment services, including Amazon EC2 (Elastic Compute Cloud), Amazon RDS (Relational Database Service), and Elastic IP (Elastic Internet Protocol). Here's an overview of each:

1. **Amazon EC2 (Elastic Compute Cloud)**:
    - Amazon EC2 is a web service that provides resizable compute capacity in the cloud. It allows users to launch virtual servers, known as instances, with customizable configurations, including CPU, memory, storage, and networking resources.
    - EC2 instances are available in various types optimized for different use cases, such as general-purpose computing, memory-intensive applications, and high-performance computing.
    - Users can choose from a wide selection of pre-configured Amazon Machine Images (AMIs) or create custom AMIs to deploy applications quickly and efficiently.
    - EC2 offers flexible pricing options, including On-Demand Instances, Reserved Instances, and Spot Instances, allowing users to optimize costs based on their usage patterns and budget requirements.
2. **Amazon RDS (Relational Database Service)**:
    - Amazon RDS is a managed database service that simplifies the setup, operation, and scaling of relational databases in the cloud. It supports popular database engines such as MySQL, PostgreSQL, Oracle, SQL Server, and MariaDB.
    - With RDS, users can easily deploy and manage highly available, scalable, and secure database instances without the need for manual administrative tasks like hardware provisioning, patching, and backups.
    - RDS offers features such as automated backups, point-in-time recovery, read replicas for improved performance and availability, and Multi-AZ deployments for high availability and fault tolerance.

- Users can monitor and optimize database performance using built-in metrics, performance insights, and integration with AWS services like Amazon CloudWatch and AWS Database Migration Service (DMS).

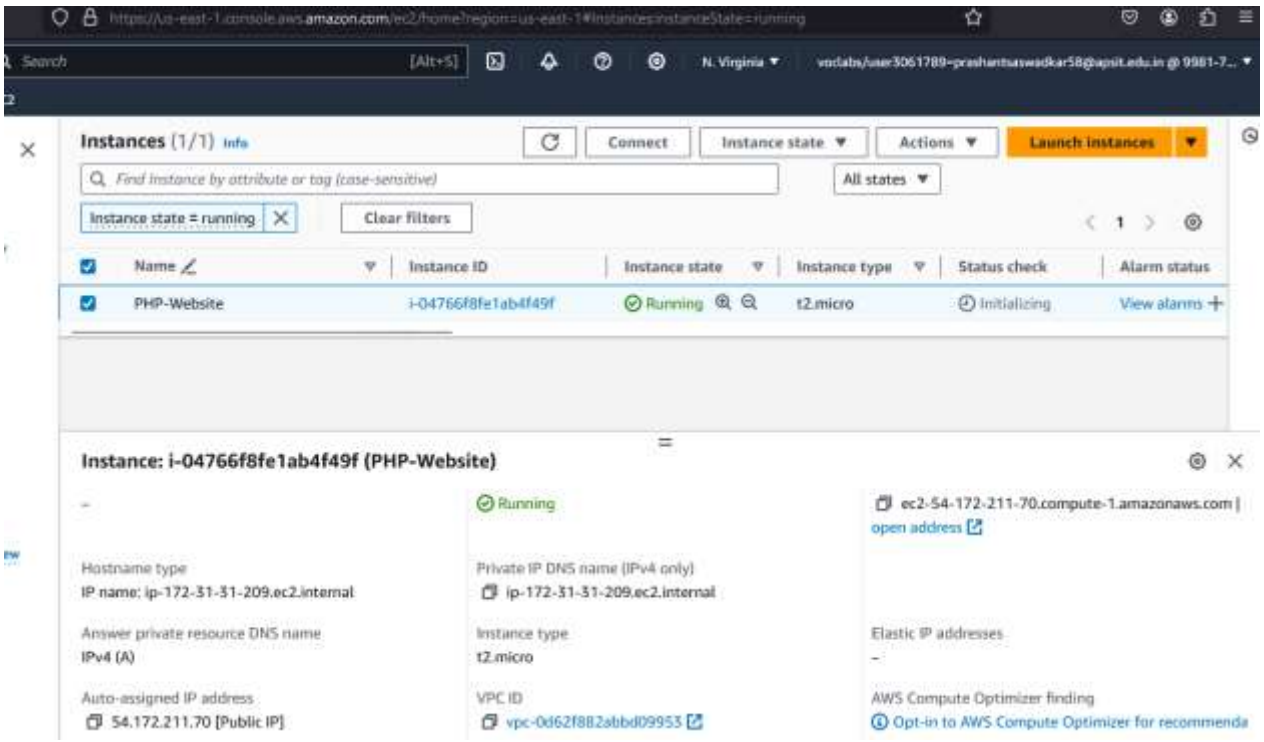
3. **Elastic IP (Elastic Internet Protocol)**:
   - Elastic IP is a static IPv4 address designed for dynamic cloud computing. It allows users to associate a persistent IP address with their EC2 instances, providing a consistent endpoint for communication.
   - Unlike traditional static IP addresses, Elastic IPs can be easily remapped to different instances within the same AWS region, enabling seamless failover and recovery in case of instance failure or maintenance.
   - Elastic IPs help minimize downtime and disruption during instance replacement or scaling activities by ensuring that applications retain the same IP address even when instances are stopped or terminated.
   - AWS charges a nominal fee for unused Elastic IPs to encourage efficient resource utilization, but users can release and reassign Elastic IPs as needed to optimize costs.

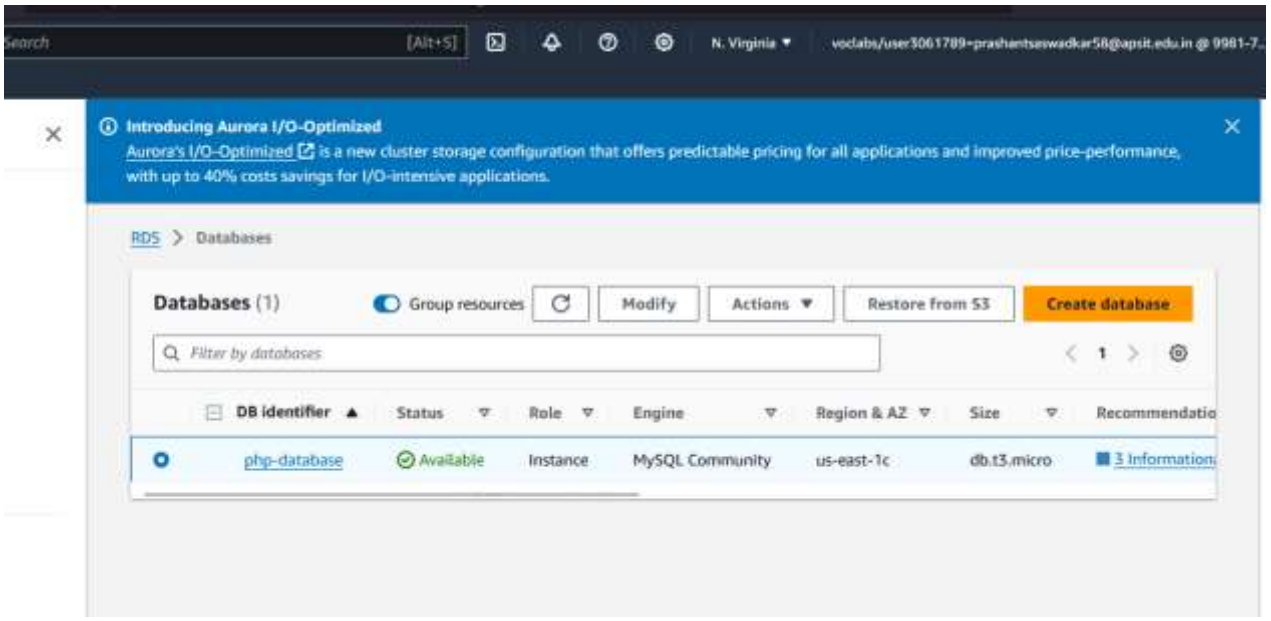
These AWS cloud deployment services - EC2, RDS, and Elastic IP - play essential roles in building scalable, reliable, and cost-effective cloud-based applications and infrastructure. By leveraging these services, organizations can benefit from increased agility, scalability, and operational efficiency in their cloud deployments.

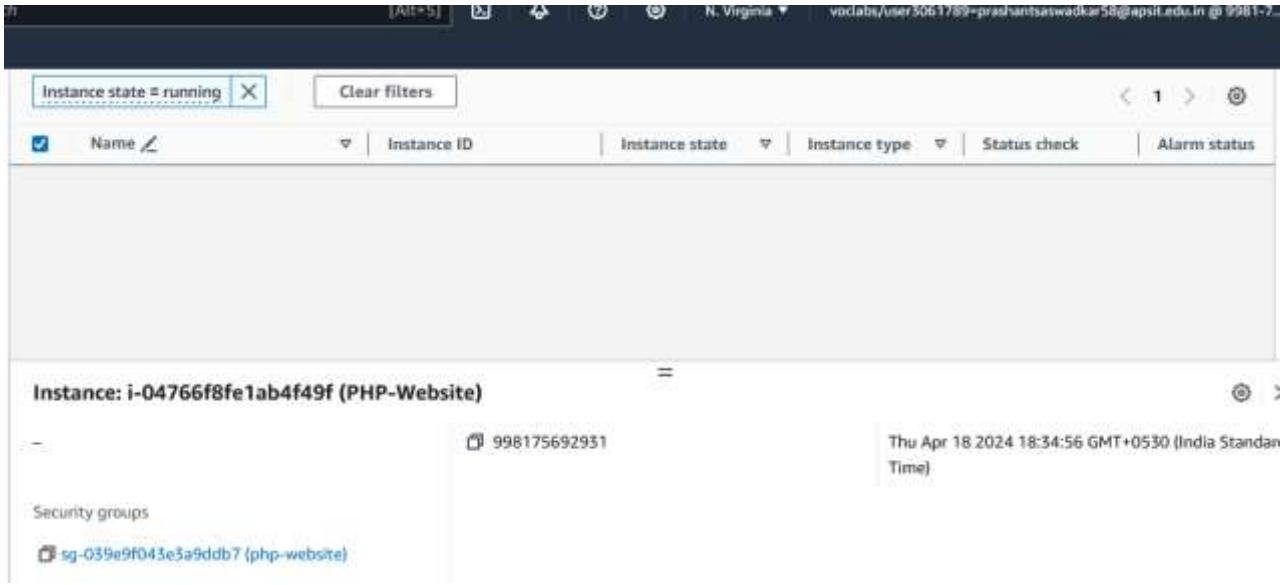
Chapter 5

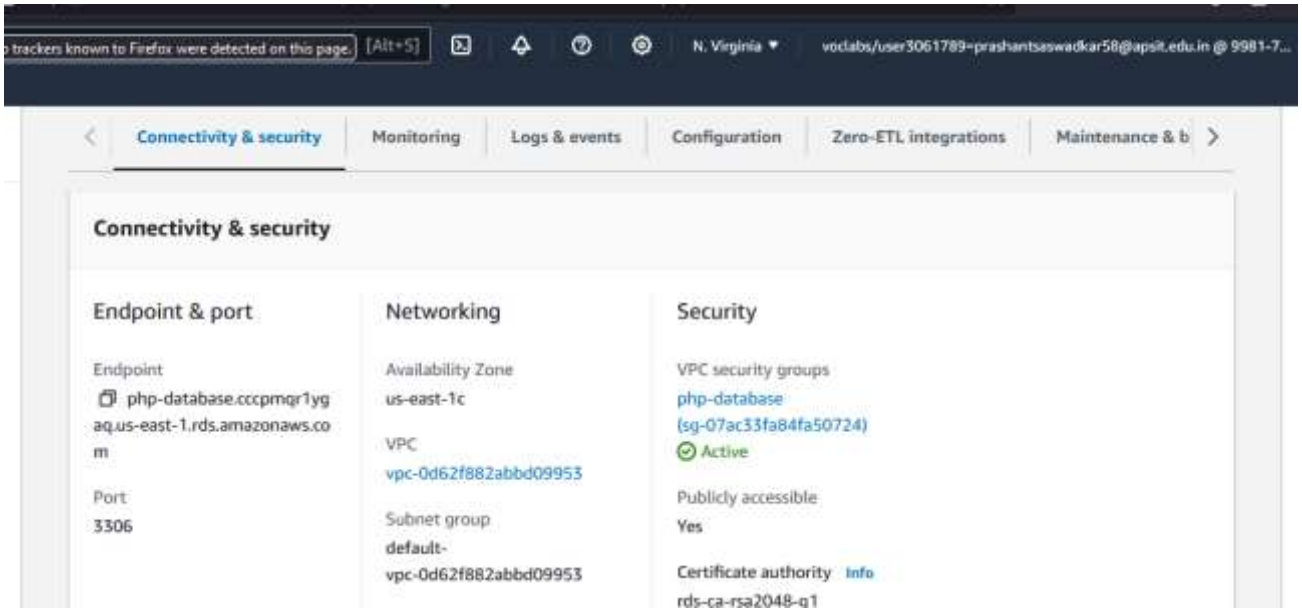
Results

1. Config Parameters of services used EC2, RDS, Elastic IP

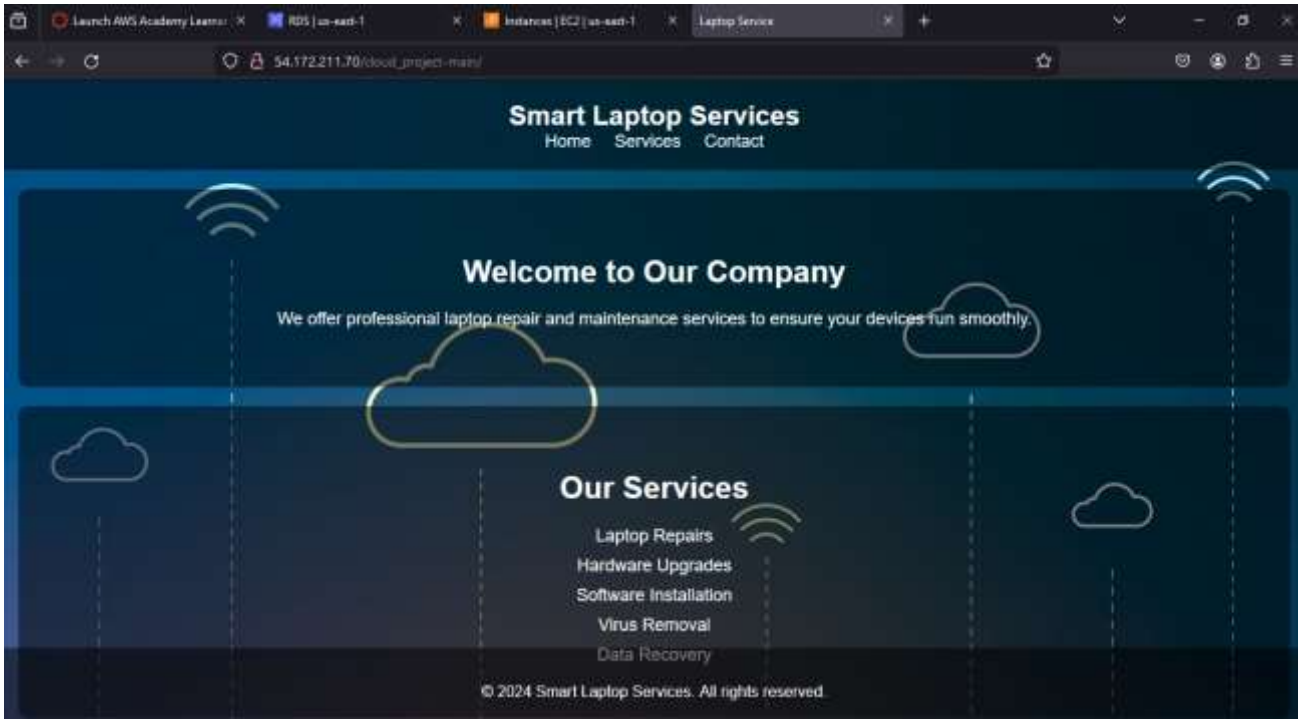



Introducing Aurora I/O-Optimized
Aurora's I/O-Optimized is a new cluster storage configuration that offers predictable pricing for all applications and improved price-performance, with up to 40% costs savings for I/O-intensive applications.
RDS > Databases
Databases (1)
Group resources
Modify
Actions
Restore from S3
Create database
Filter by databases
DB identifier
Status
Role
Engine
Region & AZ
Size
Recommendatio
php-database
Available
Instance
MySQL Community
us-east-1c
db.t3.micro
3 Information

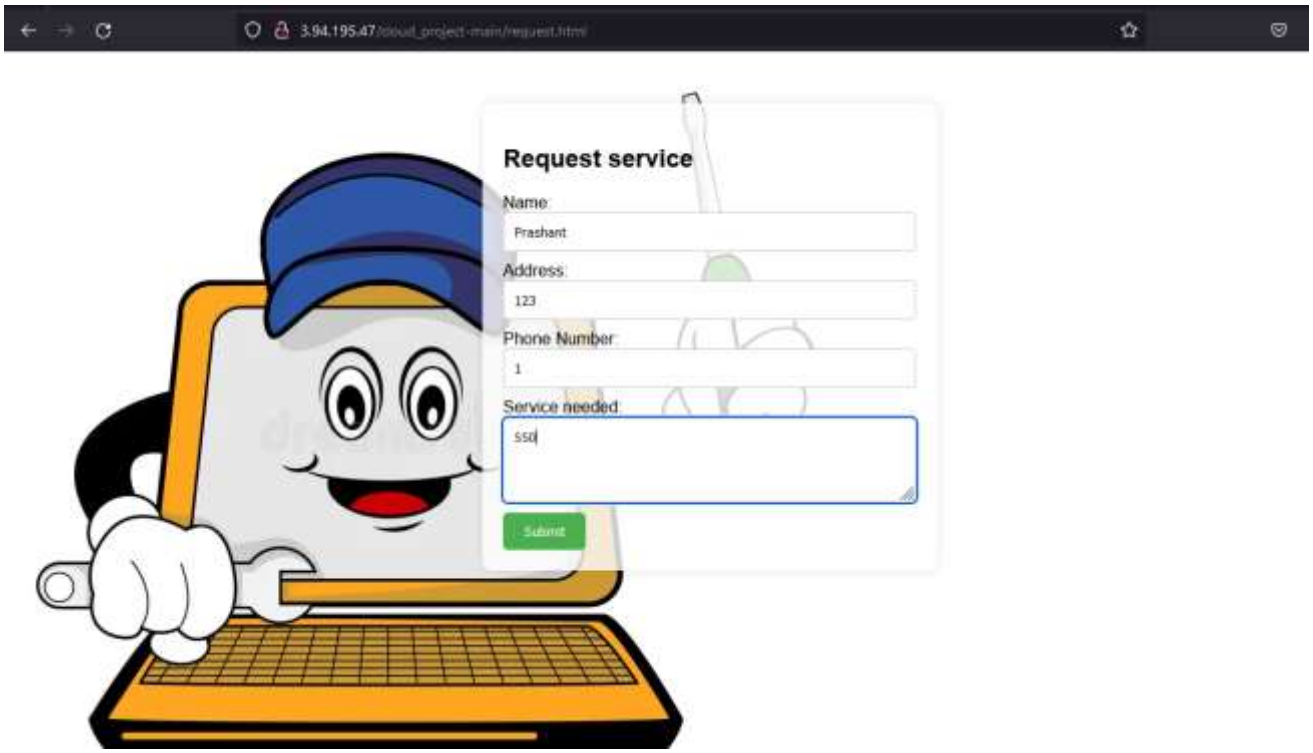

Instance state = running
Clear filters
Name
Instance ID
Instance state
Instance type
Status check
Alarm status
Instance: i-04766f8fe1ab4f49f (PHP-Website)
998175692931
Thu Apr 18 2024 18:34:56 GMT+0530 (India Standar
Time)
Security groups
sg-039e9f043e3a9ddb7 (php-website)



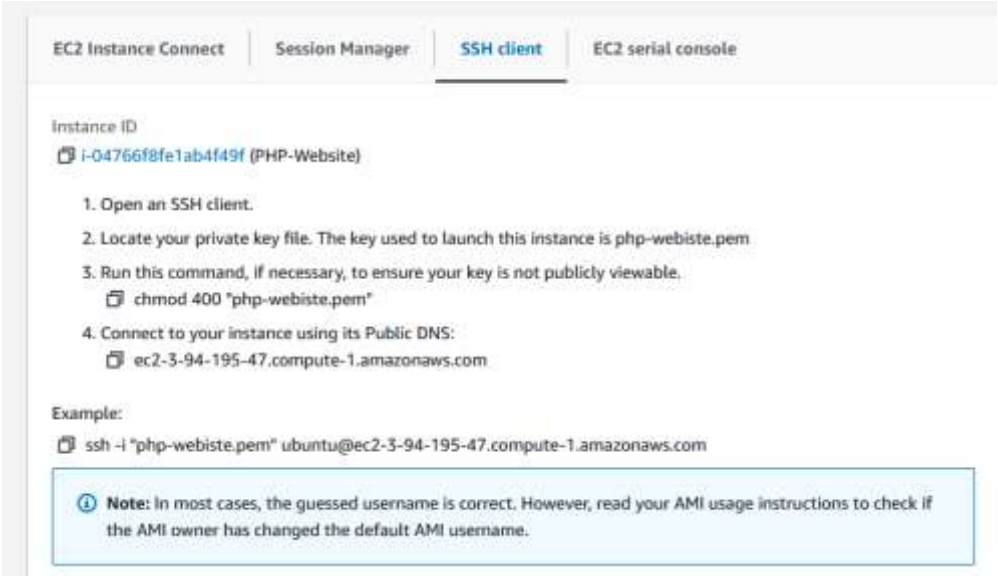
2. Website hosted using AWS




54.172.211.70/cloud_project-main/services.html
Smart Laptop Services
Home Services Contact
Our Services
Laptop Repairs
Hardware Upgrades
Software Installation
Virus Removal
Data Recovery


3.94.195.47/cloud_project-main/request.html
Request service
Name
Prashant
Address
123
Phone Number
1
Service needed
ssd
Submit

3. SSH & Database




```
user@Prashant:~$ ssh -i "php-webiste.pem" ubuntu@ec2-3-94-195-47.compute

Welcome to Ubuntu 20.04.3 LTS (GNU/Linux 5.4.0-1041-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

  System information as of Mon Apr 18 12:34:56 UTC 2024

  System load:  0.05              Processes:             118
  Usage of /:   10.7% of 7.69GB   Users logged in:       1
  Memory usage: 12%               IPv4 address for eth0: 172.31.16.123
  Swap usage:   0%

  => There are security updates available for your system. <=

Last login: Mon Apr 18 12:0( ↓ 2024 from 203.0.113.5
ubuntu@ip-172-31-16-123:~$
```

```
user@Prashant:~$ sudo mysql
[sudo] password for user:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 123456
Server version: 8.0.23-0ubuntu0.20.04.1 (Ubuntu)

mysql> SHOW DATABASES;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| mysql              |
| performance_schema |
| sys                |
| client_requests    |
+--------------------+
5 rows in set (0.01 sec)

mysql> USE client_requests;
Database changed
```

```
mysql> SHOW TABLES;
+------------------+
| Tables_in_client_requests |
+------------------+
| client_requests  |
+------------------+
1 row in set (0.00 sec)

mysql> SELECT * FROM client_requests;
+----------+---------+---------------+----------------+
| name     | address | mobile_number | service_needed |
+----------+---------+---------------+----------------+
| Prashant | 123     | 1             | SSD            |
+----------+---------+---------------+----------------+
1 row in set (0.00 sec)

mysql>
```

Chapter 6

Conclusion

In conclusion, the establishment of Smart Laptop Repairing Services as a premier destination for laptop repairing services signifies a pivotal advancement in addressing the evolving needs of users in the digital age. Leveraging a combination of cutting-edge diagnostic tools, expert technical knowledge, and a commitment to customer satisfaction, we aim at successfully providing users with reliable and personalized solutions for a diverse range of laptop issues. Through a meticulous approach to quality assurance and transparent communication, we aim at establishing ourself as a trusted partner in maintaining the functionality and longevity of laptops. Moving forward, we focus on being dedicated to continuous improvement and innovation, as it seeks to adapt to emerging technologies and industry trends, ensuring that users receive the highest standards of service excellence and technical expertise. With a steadfast focus on customer-centricity and environmental responsibility, we are poised to lead the laptop repair industry into a new era of reliability, sustainability, and user satisfaction.