Cloud Based Enterprise System

Mini-Project

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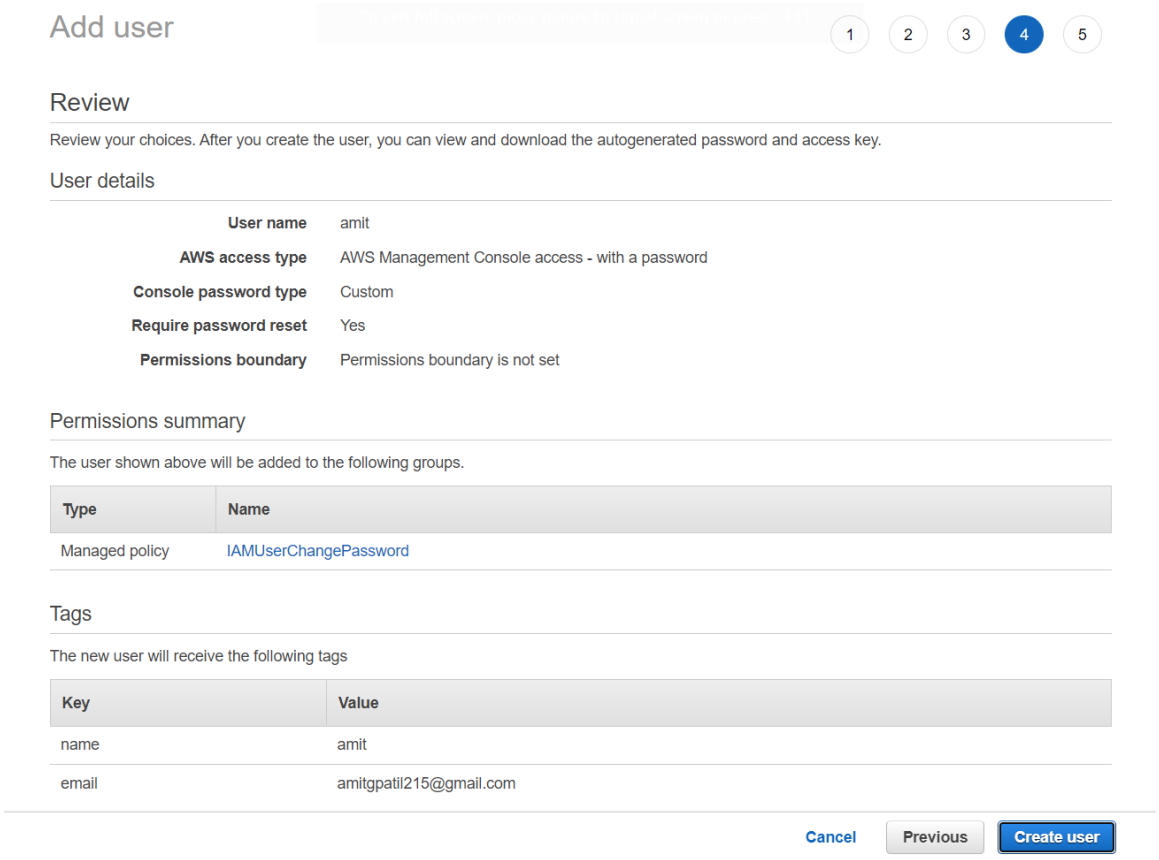
Abstract

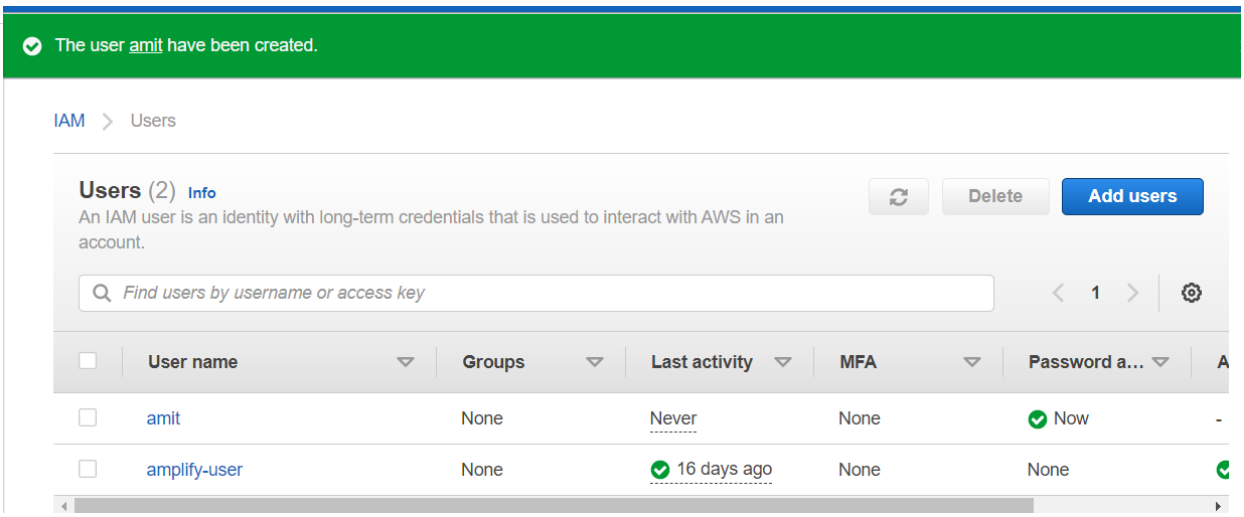
Developed an Employee Website which has operations like adding new employees, deleting and modifying the details of the employee using react and node js. Application hosted on **AWS EC2** machine and mysql is hosted on **amazon RDS.**

1. User details in AWS.

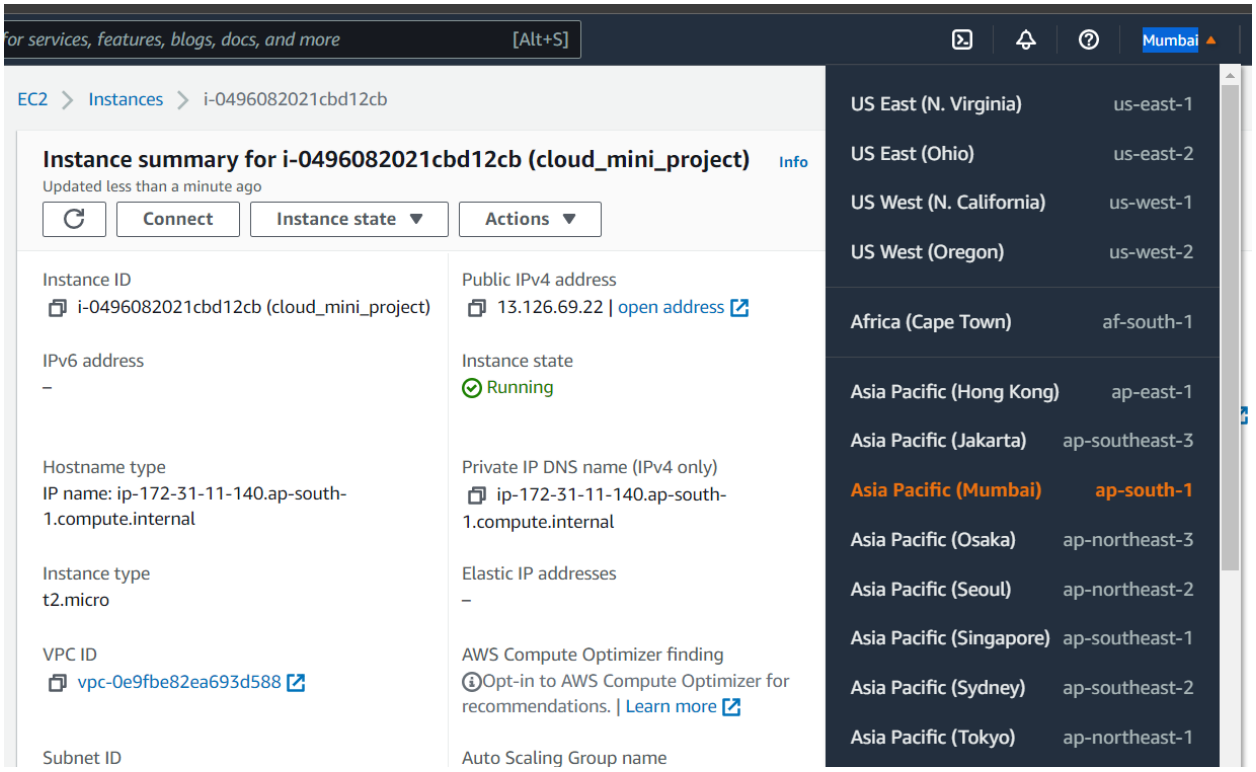
1.1 Adding new user



1.2 User Details

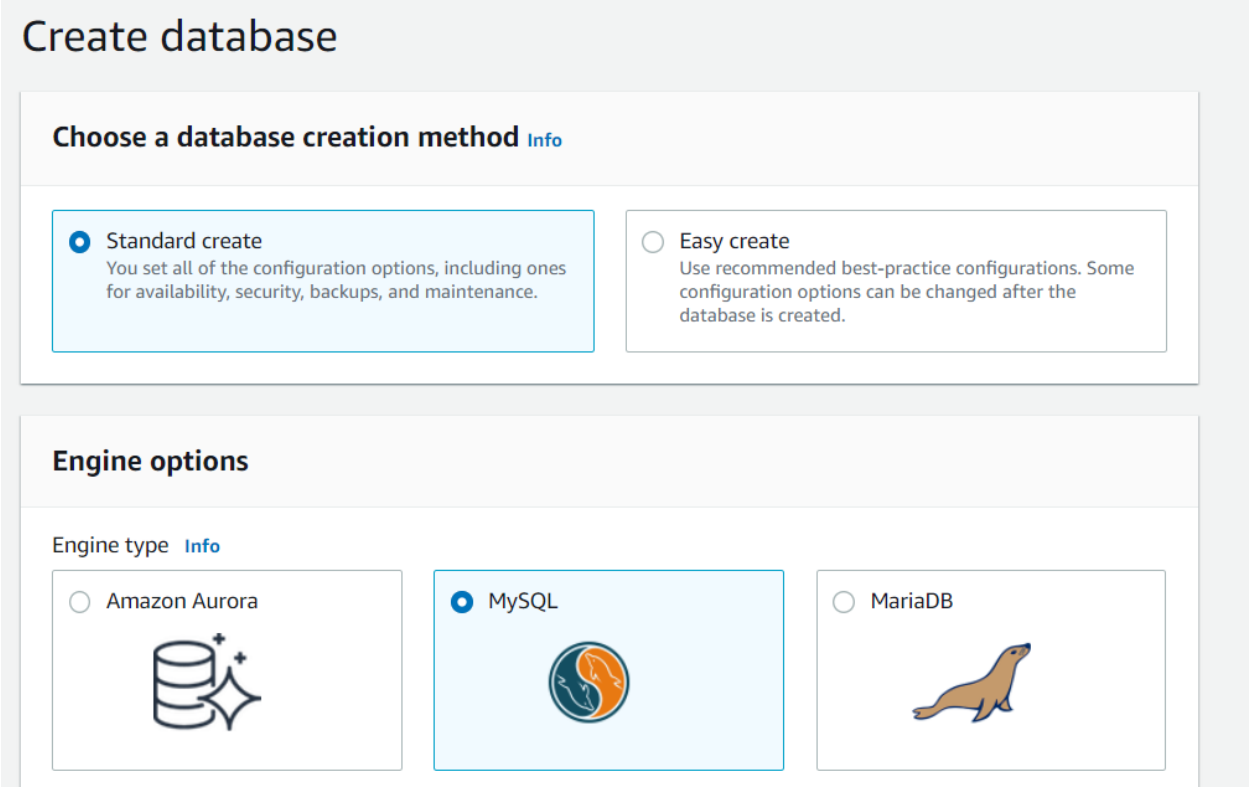


2. Region/Zone selected (Indian/ Data center) in AWS.



3. Developed application should have a database in AWS

3.1 AWS RDS



3.2 Creating react_mysql database

```
MariaDB [(none)]> create database react_node
    -> ;
```

3.3 Creating tables

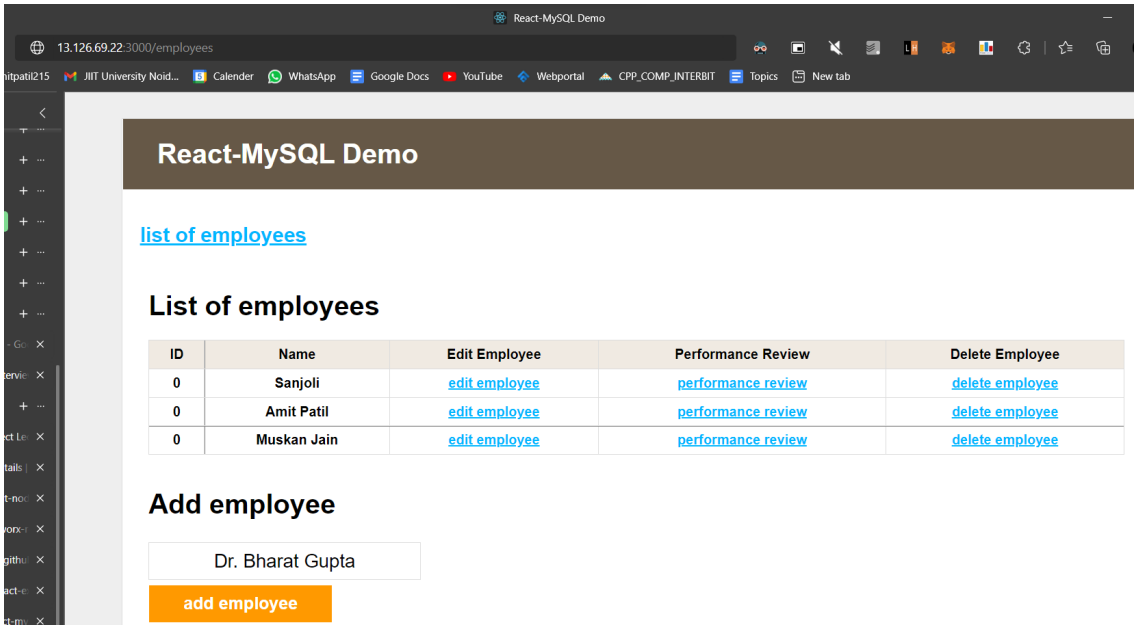
```
MariaDB [(none)]> use react_node
Database changed
MariaDB [react_node]> CREATE TABLE admin ( id int(11) NOT NULL, name varchar(30) NOT NULL ) ENGINE=InnoDB DEFAULT CHARSET=utf8;
Query OK, 0 rows affected (0.052 sec)

MariaDB [react_node]> CREATE TABLE employees ( id int(11) NOT NULL, adminId int(11) NOT NULL, name varchar(30) NOT NULL ) ENGINE=InnoDB DEFAULT CHARSET=utf8;
Query OK, 0 rows affected (0.043 sec)

MariaDB [react_node]> CREATE TABLE performreview ( id int(11) NOT NULL, refid int(11) NOT NULL, content text NOT NULL ) ENGINE=InnoDB DEFAULT CHARSET=utf8;
Query OK, 0 rows affected (0.033 sec)

MariaDB [react_node]>
```

3.4 Show employee table

```
MariaDB [react_node]> select * from employees;
+----+---------+------------------+
| id | adminId | name             |
+----+---------+------------------+
|  0 |       1 | Amit patil       |
|  0 |       1 | Dr. Bharat Gupta |
|  0 |       1 | Sanjoli Goyal    |
|  0 |       1 | Muskan Jain      |
+----+---------+------------------+
4 rows in set (0.003 sec)
```

4 The application should be able to insert/ delete/ query data from a database stored in AWS.

4.1 Insert New Employee

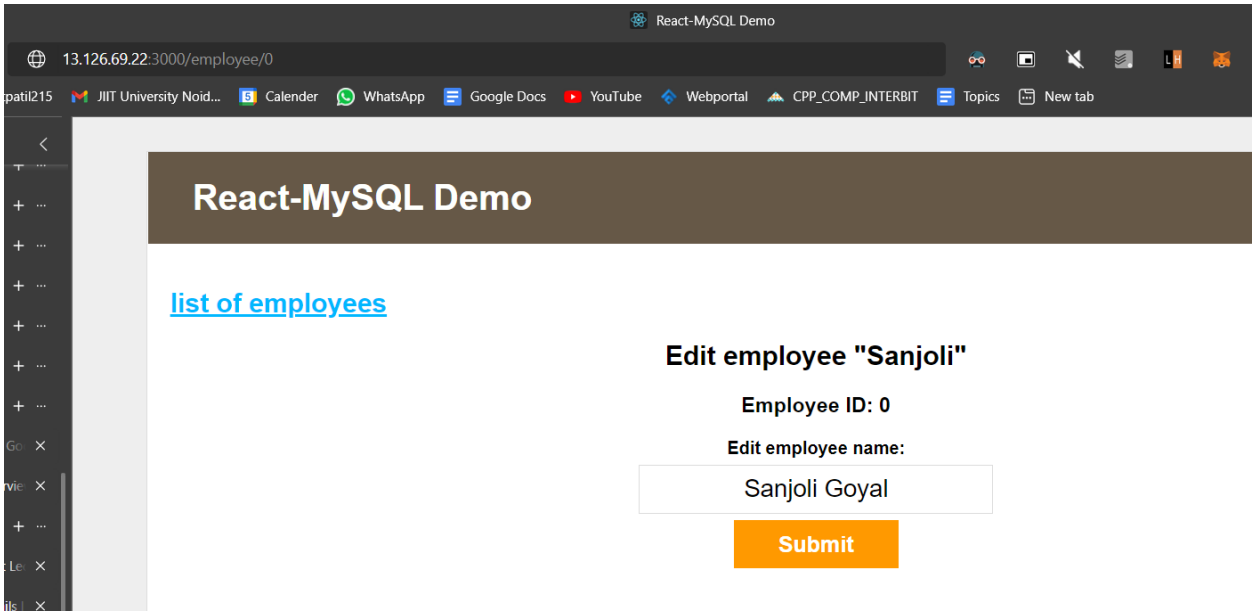


Console logs

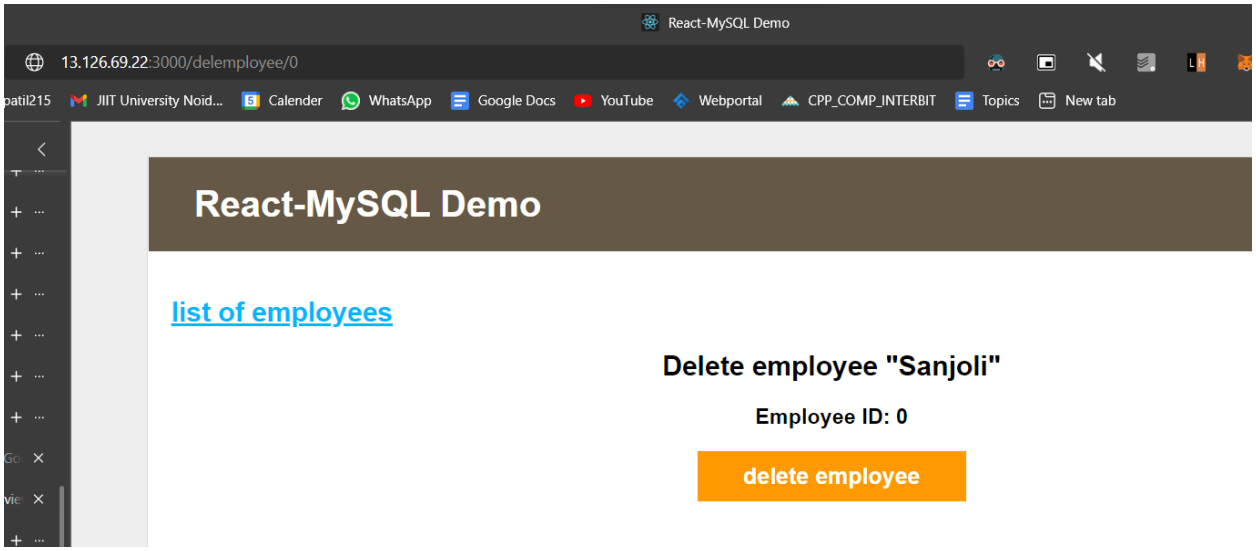
```
Inserting a new employee...
{ newname: 'Amit Patil' }
OkPacket {
  fieldCount: 0,
```

```
  affectedRows: 1,
  insertId: 0,
  serverStatus: 2,
  changedRows: 0
}
```

4.2 Edit Employee Name



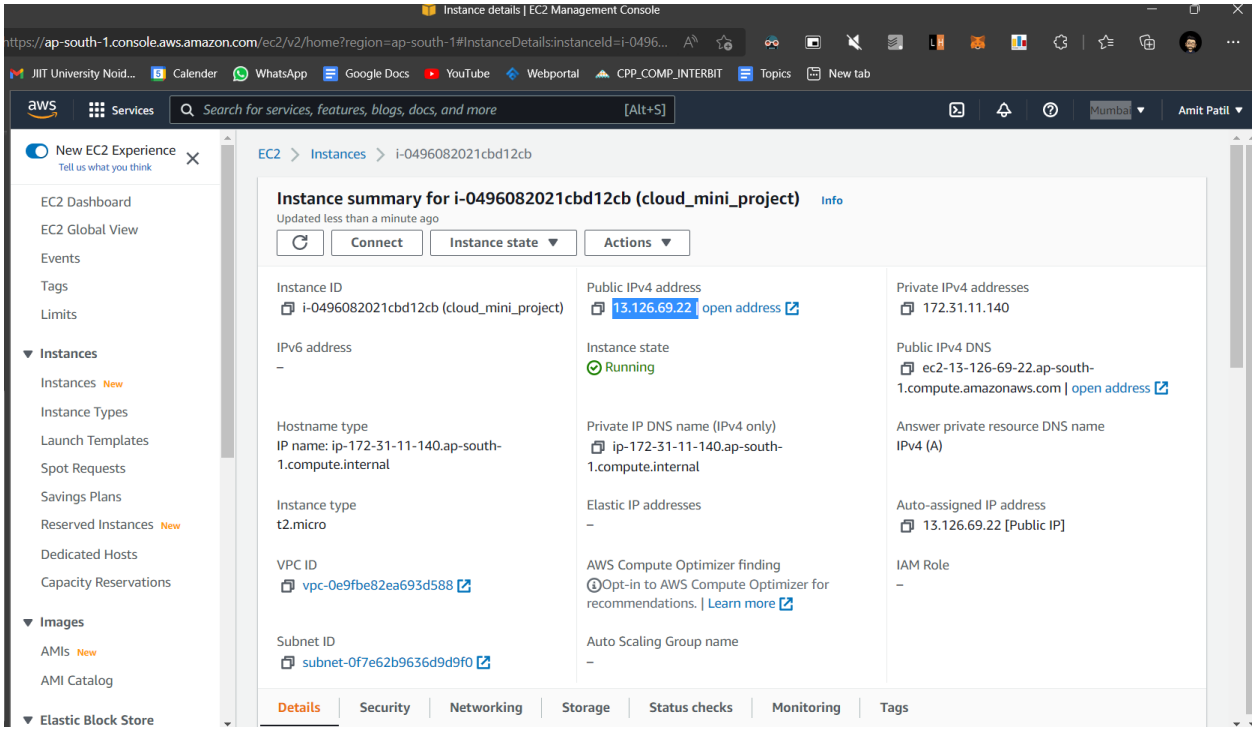
4.3 Delete Employee



5 Snapshots of IP address, starting page URI of the application from the browser.

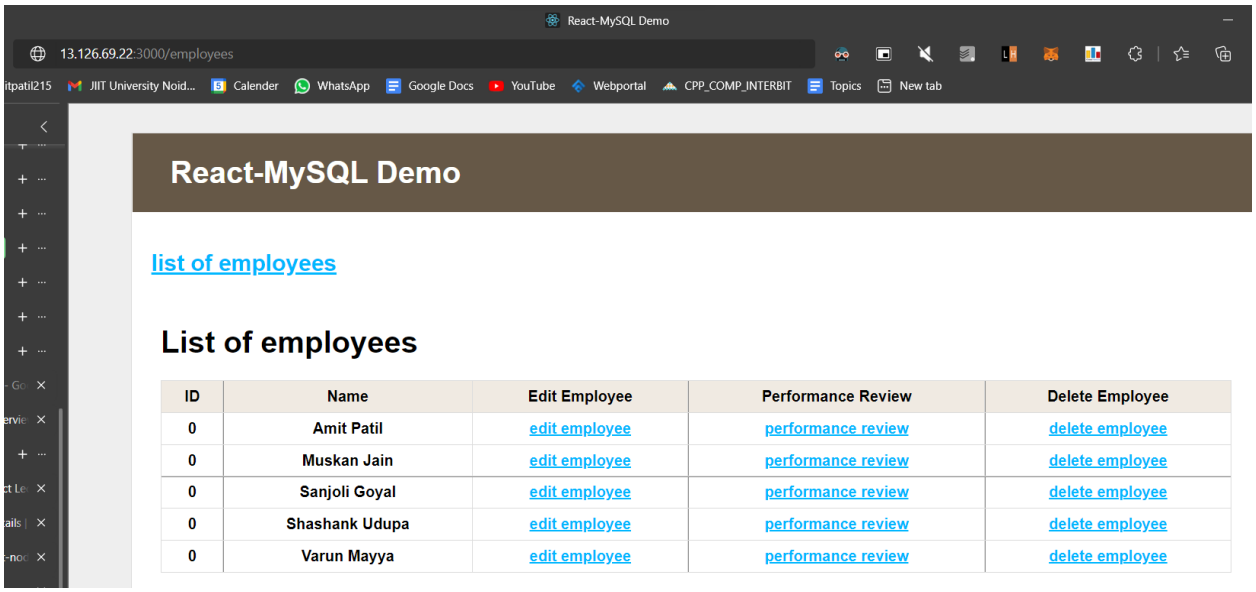
5.1 EC2 IP address Snapshot

IP address : **13.126.69.22**



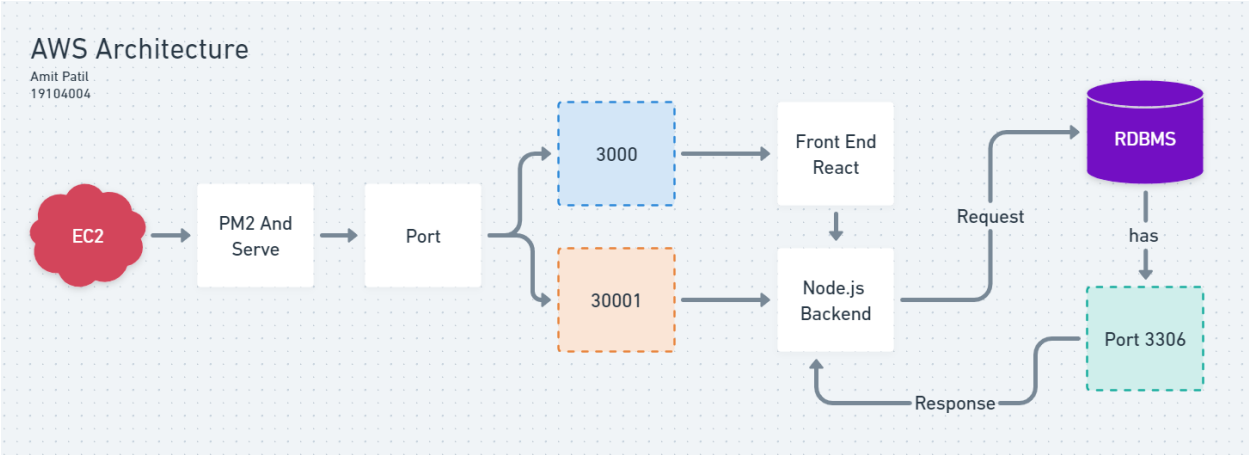
5.2 Application Web Browser URL

Running on url : https:/13.126.69.22:3000/employees

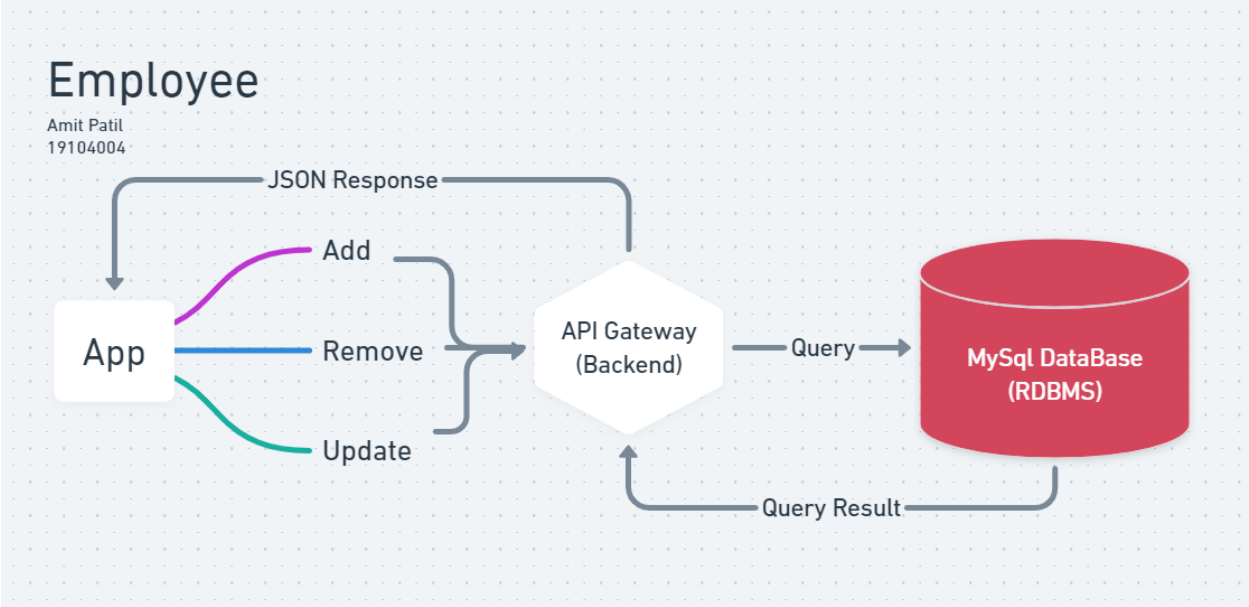


6 Architecture diagram/ Flow Chart of the application

6.1 AWS Architecture flow



6.2 Application Flow



7 Tools and techniques used in AWS

EC2 - For hosting frontend and backend
RDS - For MYSQL relational database
IAM - Access management for ec2 and RDS

PM2 -Process manager and For scalability of employee frontend and backend
Serve - for running npm servers on both ports

8 Interaction between different modules in AWS (EC2, Database, S3, etc)

8.1 Code to connect with RDS from EC2 using endpoints

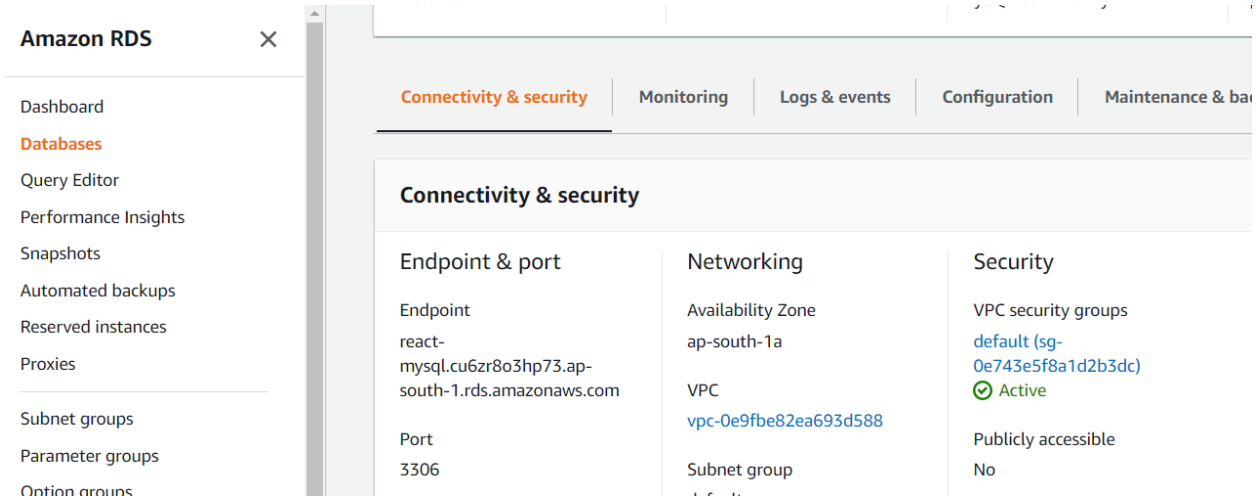
```
// Create MySQL connection
const db = mysql.createConnection({
  host     : 'react-mysql.cu6zr8o3hp73.ap-south-1.rds.amazonaws.com',
  user     : 'root',
  password : 'root',
  port     : "3306",
  database : 'react_node',
})
```

9 Data stored in Storage bucket (if used)

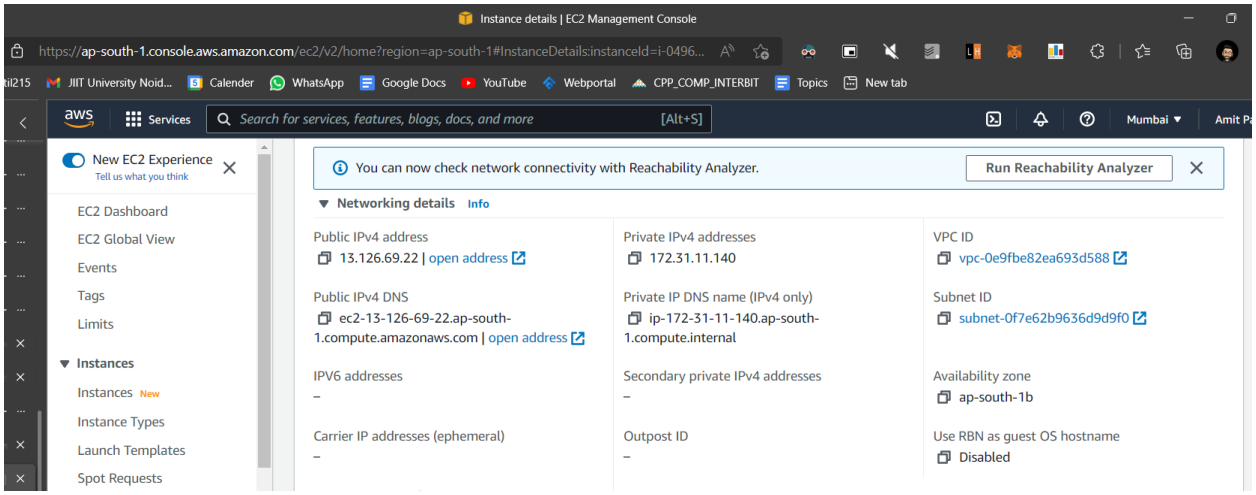
S3 not used

10 Snapshots of End point(s).

10.1 RDS Endpoints



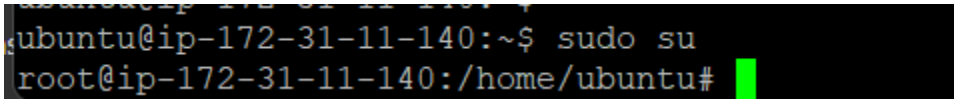
10.2 EC2 Endpoints



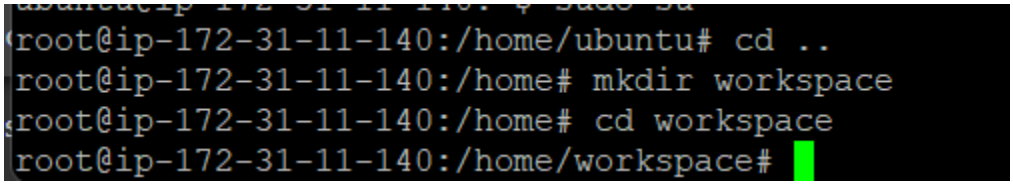
11 Installation of the software(s) in AWS

Note: Using private IP address to connect through SSH

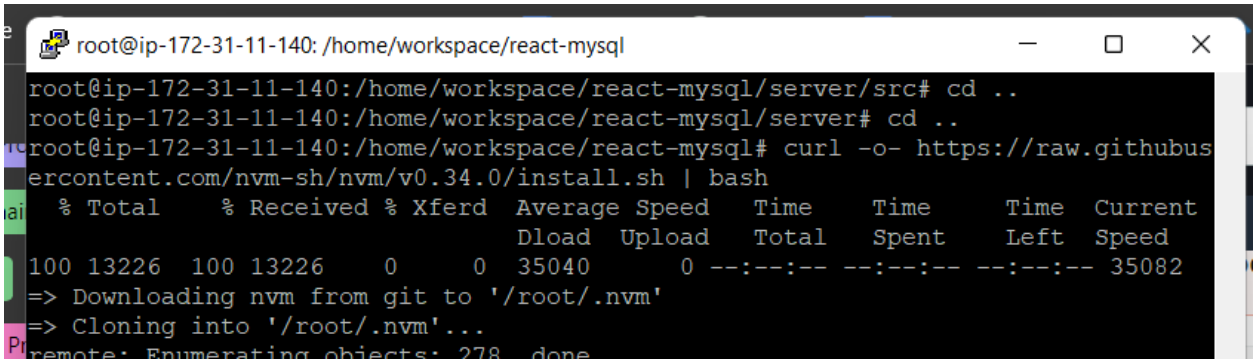
11.1 Getting root access



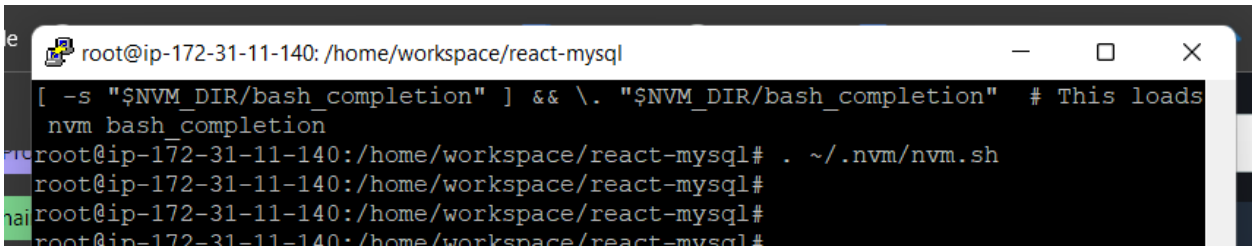
11.2 Creating Workspace Folder in home directory



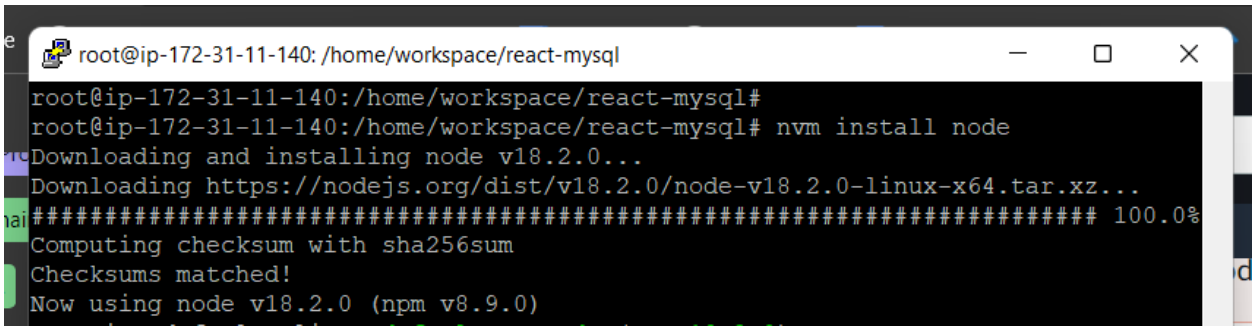
11.3 Install nvm



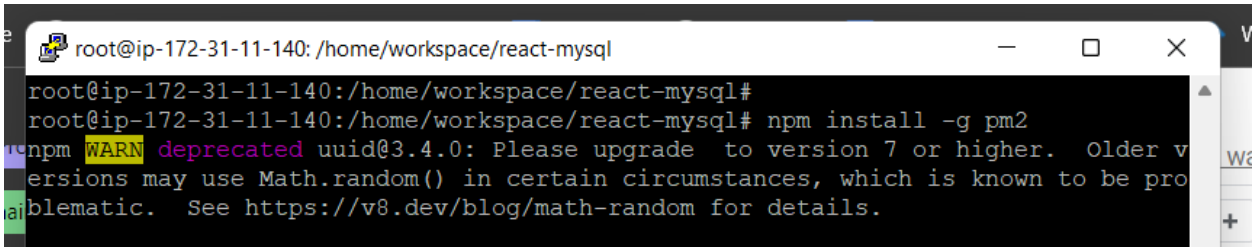
11.4 Activate nvm



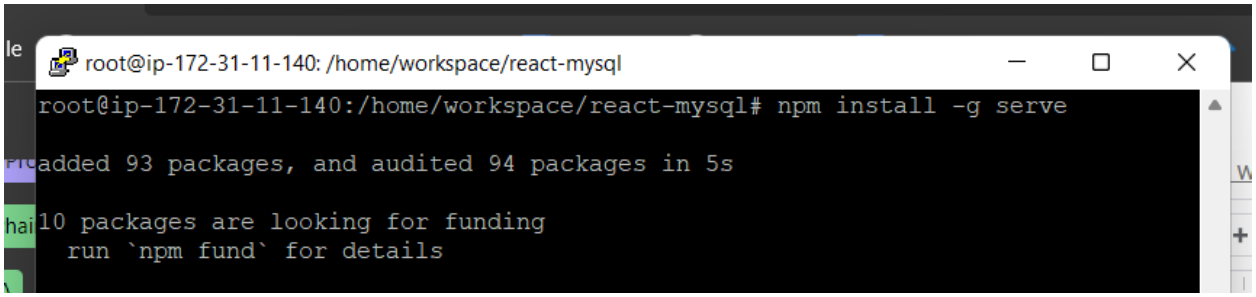
11.5 Install nodejs



11.6 Install PM2 Server



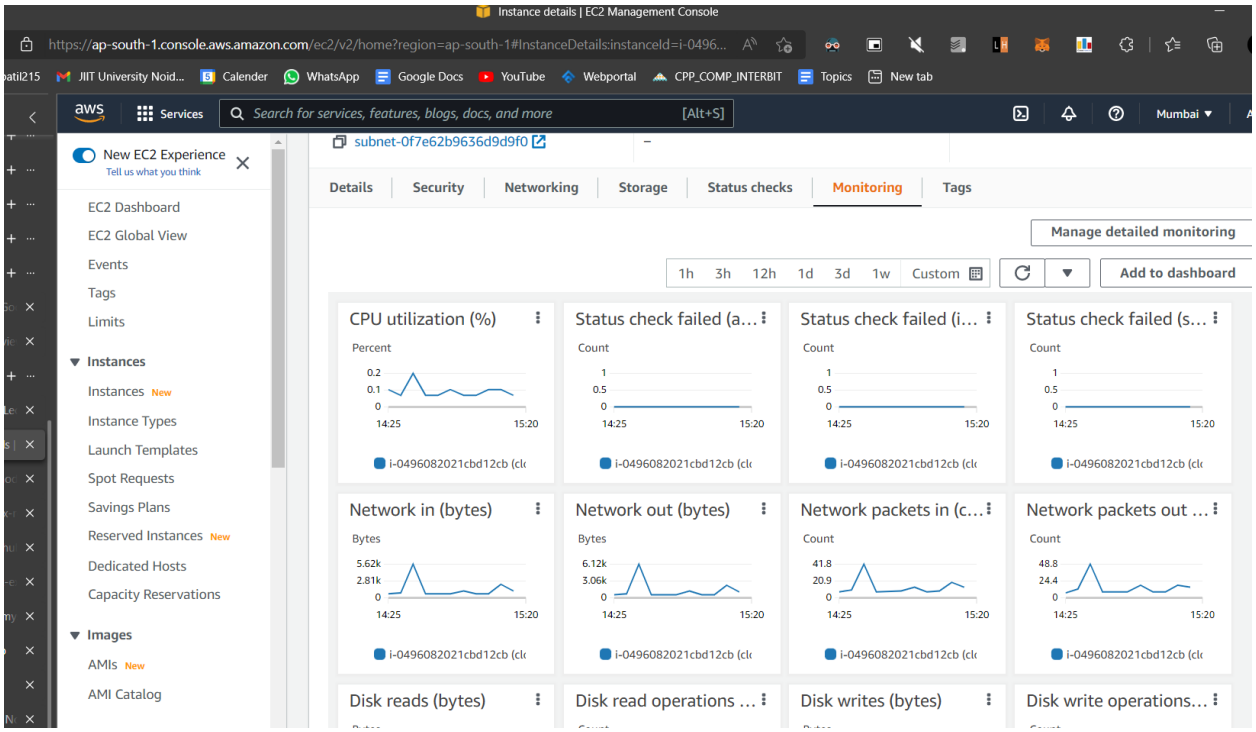
11.7 Install Serve



12 Steps of developed application execution

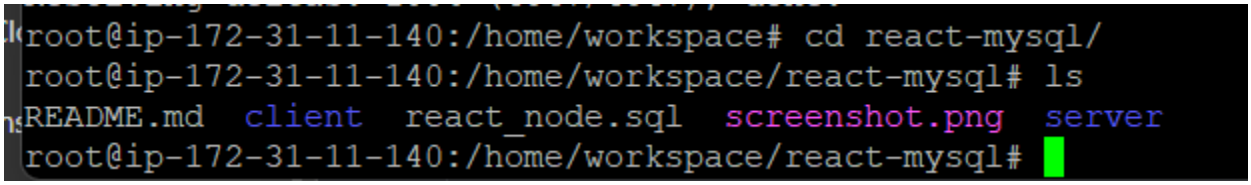
Step 1: Go to the url https:/13.126.69.22:3000/employees
Step 2: Click on add new employee button
Step 3: Click on Delete Employee button to delete that employee
Step 4: Edit employee to edit the name of the employee

13 EC2 usage in the application

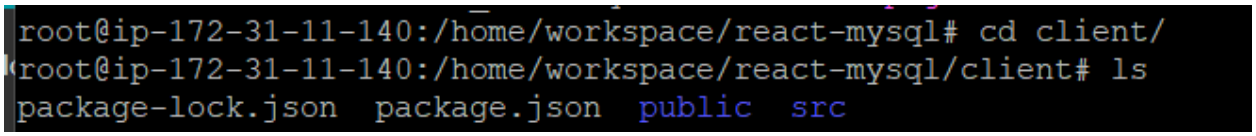


14 Code storage location (screenshots)

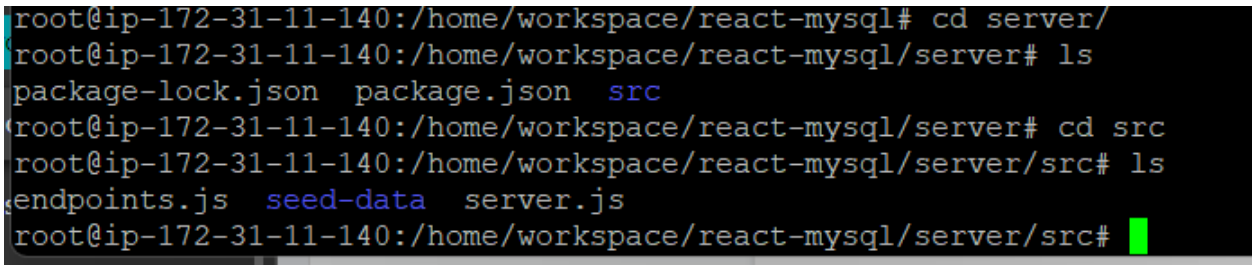
14.1 Workspace folder



14.2 Client Directory



14.3 Server Directory



15. References

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