Experiment No 5

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Cloud Computing
CSL605

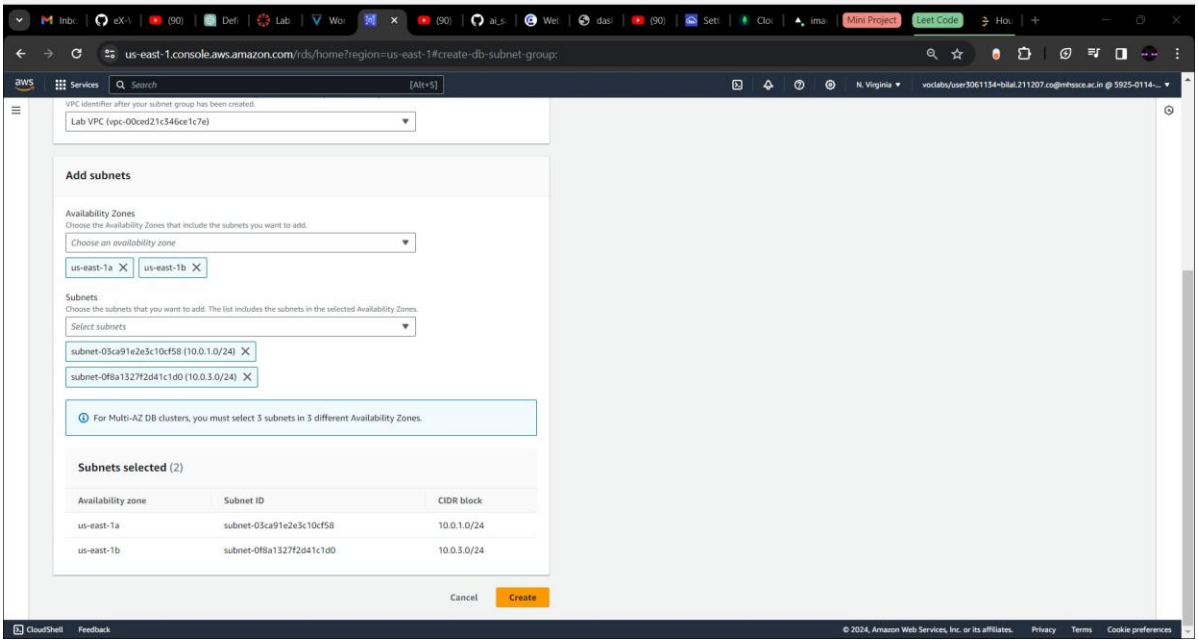
Aim: To study and Implement Database as a Service on SQL/NOSQL databases like AWS RDS, AZURE SQL/ MongoDB Lab/ Firebase.

Theory:

To undertake the study and implementation of Database as a Service (DBaaS) using SQL/NOSQL databases such as AWS RDS, Azure SQL, MongoDB Atlas, or Firebase requires a deep understanding of the unique features and capabilities of each platform. AWS RDS offers managed relational database services supporting various SQL engines like MySQL, PostgreSQL, and SQL Server, simplifying database administration tasks such as provisioning, patching, and backups. Similarly, Azure SQL provides a fully managed SQL database service with built-in high availability and scaling capabilities, empowering developers to focus on application development rather than infrastructure management. On the other hand, MongoDB Atlas offers a cloud-based managed service for MongoDB, a popular NoSQL database, providing automated backups, scaling, and monitoring to streamline database operations. Firebase, Google's mobile and web application development platform, includes a real-time NoSQL database as part of its suite of services, enabling rapid prototyping and development of scalable applications with real-time synchronization across devices.

By immersing oneself in the study and implementation of DBaaS with these platforms, individuals and organizations gain insights into modern database management practices tailored to specific use cases and requirements. From designing data models to optimizing database performance and ensuring data security and compliance, hands-on experience with features like automated scaling, data replication, and disaster recovery mechanisms equips professionals with the skills needed to architect robust and resilient database solutions in the cloud. Moreover, understanding the integration capabilities of these DBaaS offerings with other cloud services, development frameworks, and analytics tools empowers businesses to leverage data-driven insights and innovation to drive growth and competitive advantage in today's digital economy

OUPUT:


us-east-1.console.aws.amazon.com/rds/home?region=us-east-1#create-db-subnet-group:
Lab VPC (vpc-00ced21c346ce1c7e)
Add subnets
Availability Zones
Choose the Availability Zones that include the subnets you want to add.
Choose an availability zone
us-east-1a
us-east-1b
Subnets
Choose the subnets that you want to add. The list includes the subnets in the selected Availability Zones.
Select subnets
subnet-03ca91e2e3c10cf58 (10.0.1.0/24)
subnet-0f8a1327f2d41c1d0 (10.0.3.0/24)
For Multi-AZ DB clusters, you must select 3 subnets in 3 different Availability Zones.
Subnets selected (2)
Availability zone
Subnet ID
CIDR block
us-east-1a
subnet-03ca91e2e3c10cf58
10.0.1.0/24
us-east-1b
subnet-0f8a1327f2d41c1d0
10.0.3.0/24
Cancel
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CloudShell
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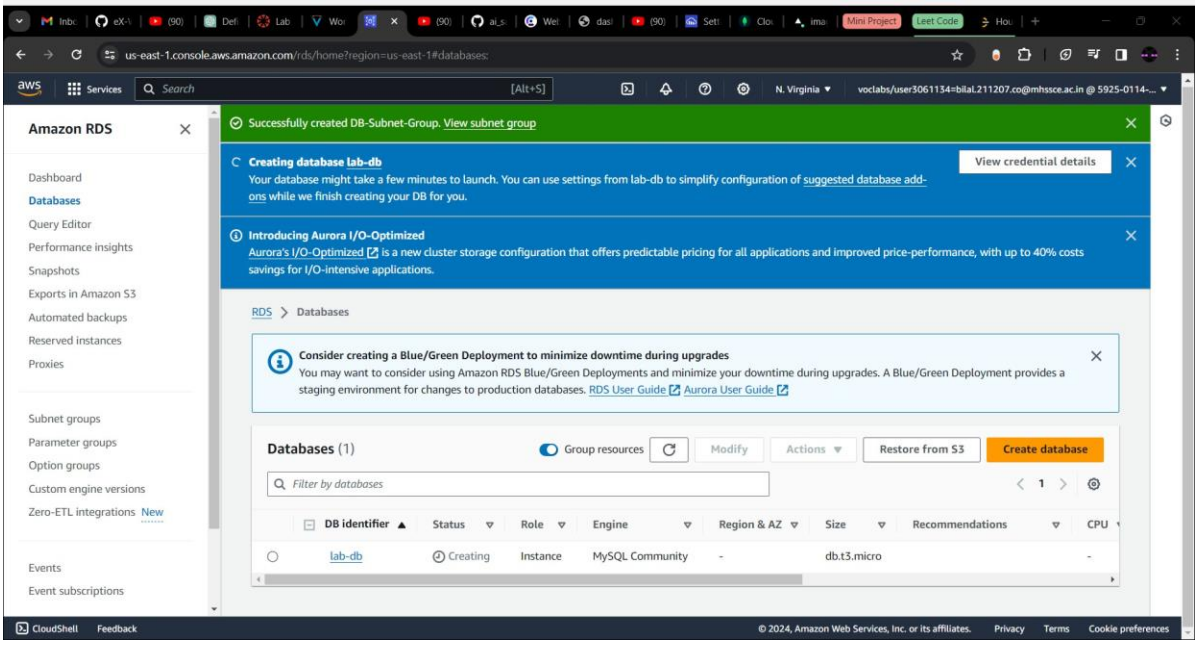
us-east-1.console.aws.amazon.com/rds/home?region=us-east-1#databases:
Amazon RDS
Dashboard
Databases
Query Editor
Performance insights
Snapshots
Exports in Amazon S3
Automated backups
Reserved instances
Proxies
Subnet groups
Parameter groups
Option groups
Custom engine versions
Zero-ETL integrations New
Events
Event subscriptions
Successfully created DB-Subnet-Group. View subnet group
Creating database lab-db
Your database might take a few minutes to launch. You can use settings from lab-db to simplify configuration of suggested database add-ons while we finish creating your DB for you.
View credential details
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
Consider creating a Blue/Green Deployment to minimize downtime during upgrades
You may want to consider using Amazon RDS Blue/Green Deployments and minimize your downtime during upgrades. A Blue/Green Deployment provides a staging environment for changes to production databases. RDS User Guide Aurora User Guide
Databases (1)
Group resources
Modify
Actions
Restore from S3
Create database
Filter by databases
DB identifier
Status
Role
Engine
Region & AZ
Size
Recommendations
CPU
lab-db
Creating
Instance
MySQL Community
-
db.t3.micro
-
CloudShell
Feedback
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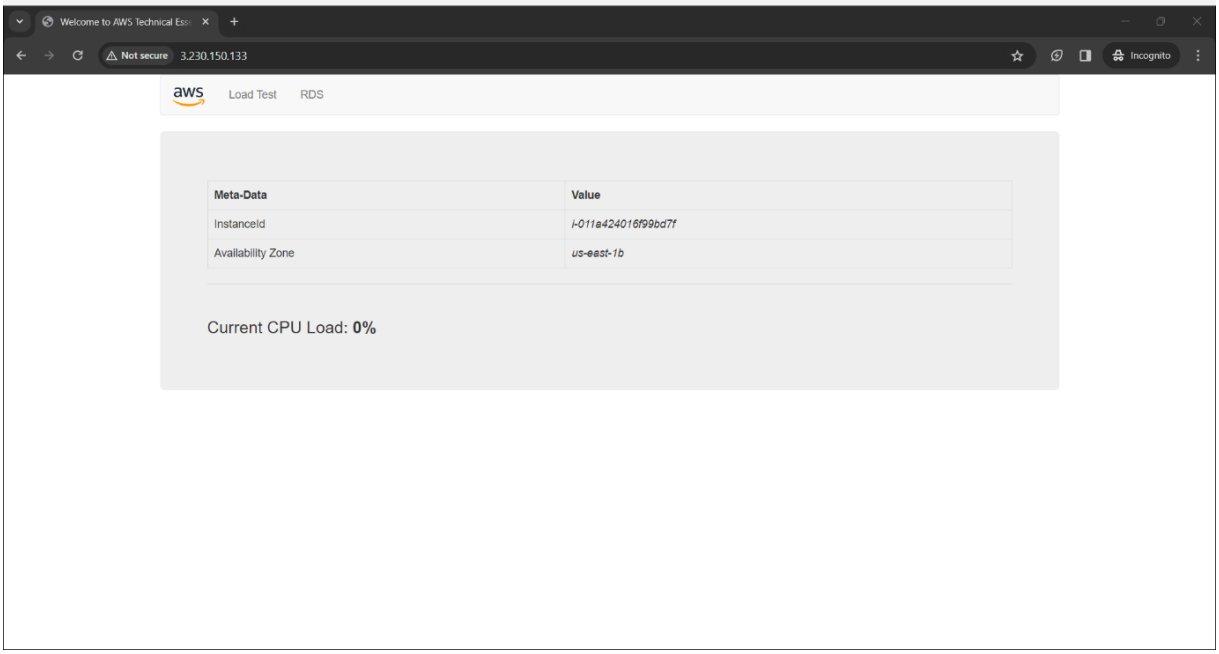
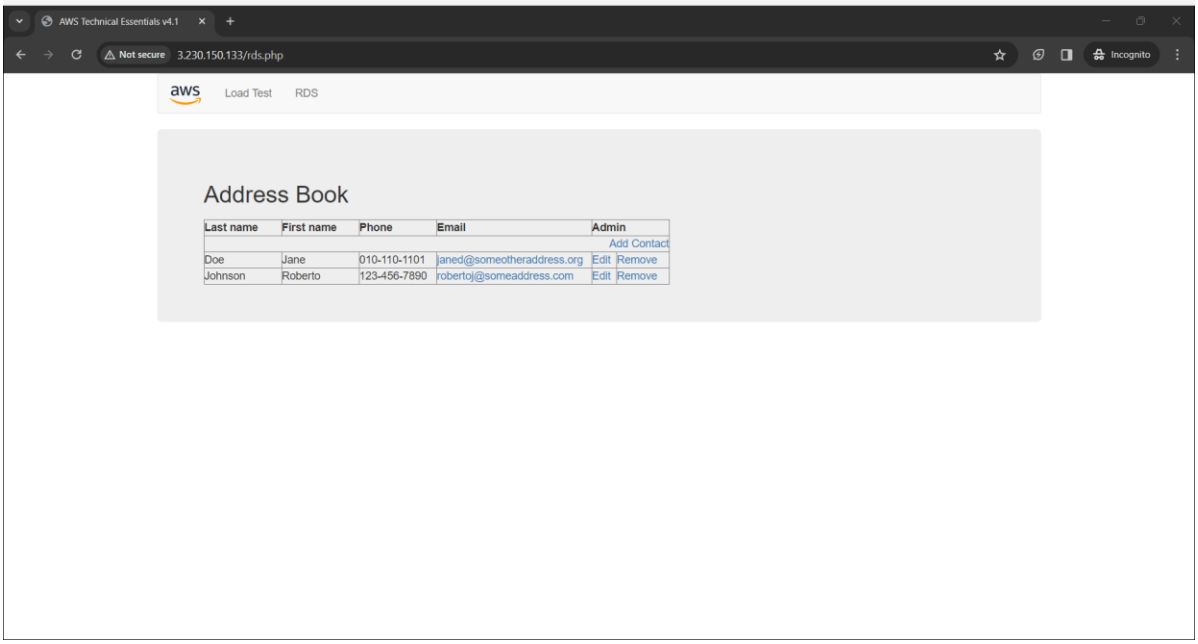
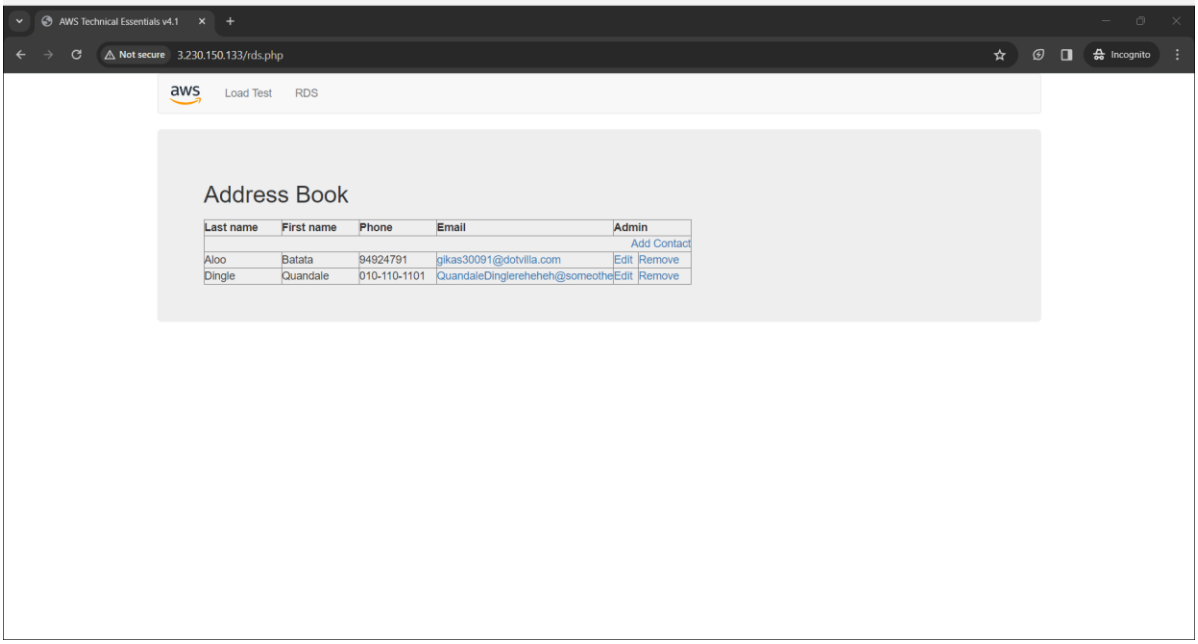

Welcome to AWS Technical Ess
Not secure
3.230.150.133
Incognito
aws
Load Test
RDS
Meta-Data
Value
InstanceId
i-011a424016f99bd7f
Availability Zone
us-east-1b
Current CPU Load: 0%


AWS Technical Essentials v4.1
Not secure
3.230.150.133/rds.php
Incognito
aws
Load Test
RDS
Address Book
Last name
First name
Phone
Email
Admin
Add Contact
Doe
Jane
010-110-1101
janed@someotheraddress.org
Edit
Remove
Johnson
Roberto
123-456-7890
robertoj@someaddress.com
Edit
Remove


AWS Technical Essentials v4.1
Not secure
3.230.150.133/rds.php
Incognito
aws
Load Test
RDS
Address Book
Last name
First name
Phone
Email
Admin
Add Contact
Aloo
Batata
94924791
gikas30091@dotvilla.com
Edit
Remove
Dingle
Quandale
010-110-1101
QuandaleDinglereheheh@someothe
Edit
Remove

Conclusion: We have successfully implemented Database as a Service.