😊 Creating SQL Database

Azure SQL Database is a fully managed relational database service provided by Microsoft Azure. It's a cloud-based version of Microsoft SQL Server that offers similar features and functionality but with the benefits of cloud computing, such as scalability, high availability, and automatic backups.

Key features of Azure SQL Database include:

1. **Managed Service:** The Azure SQL Database is fully managed by Microsoft, which means that Microsoft handles tasks such as patching, backups, and maintenance, allowing you to focus on building and managing your applications.
2. **Scalability:** Azure SQL Database allows you to easily scale your database resources up or down based on demand. You can adjust compute and storage resources dynamically to accommodate changes in workload without downtime.
3. **High Availability:** Azure SQL Database offers built-in high availability features such as automatic failover and geo-replication, ensuring that your database remains accessible and resilient to failures.
4. **Security:** Azure SQL Database provides robust security features including encryption at rest and in transit, threat detection, firewall rules, and role-based access control (RBAC) to help protect your data.
5. **Compatibility:** Azure SQL Database is compatible with existing SQL Server tools, libraries, and applications, making it easy to migrate your on-premises SQL Server databases to the cloud.
6. **Integration:** Azure SQL Database integrates seamlessly with other Azure services such as Azure Active Directory, Azure Monitor, Azure Data Factory, and Power BI, enabling you to build end-to-end solutions in the cloud.

😄 Use Cases of Azure SQL Database:

Azure SQL Database is a cloud-based relational database service provided by Microsoft Azure. It offers several use cases across various industries and applications:

1. **Web Applications:** Azure SQL Database is well-suited for powering web applications, providing a reliable and scalable backend for applications hosted on Azure App Service or any other web hosting platform.
2. **Mobile Apps:** Mobile applications often require backend databases to store user data, preferences, and other information. Azure SQL Database can serve as a backend for mobile apps, providing seamless integration with Azure Mobile App Services.
3. **Business Applications:** Many business applications, such as CRM (Customer Relationship Management), ERP (Enterprise Resource Planning), and HRM (Human Resource Management) systems, require robust and scalable databases to manage large volumes of data. Azure SQL Database can handle such workloads effectively.
4. **E-commerce:** Online retail platforms require databases capable of handling high transaction volumes, managing product catalogs, user profiles, and order processing

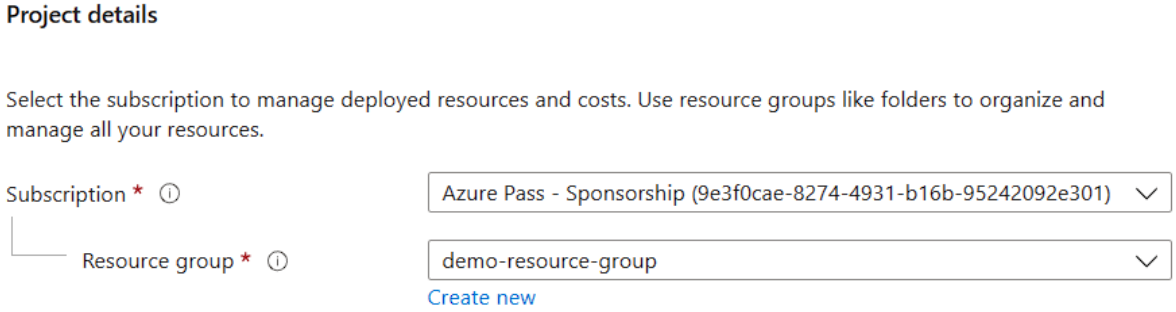
efficiently. Azure SQL Database can support the demanding requirements of e-commerce applications.

5. **Analytics and Reporting:** Azure SQL Database integrates with Azure Analysis Services, Power BI, and other analytics tools, enabling organizations to perform advanced analytics, generate reports, and gain insights from their data.
6. **IoT (Internet of Things):** IoT applications generate vast amounts of data from sensors, devices, and other sources. Azure SQL Database can store and process this data, enabling real-time analytics, predictive maintenance, and other IoT-related functionalities.
7. **Gaming:** Online gaming platforms often require databases to manage user profiles, game states, leaderboards, and other gaming-related data. Azure SQL Database can provide the necessary backend infrastructure for gaming applications.
8. **DevOps and CI/CD Pipelines:** Azure SQL Database supports integration with Azure DevOps and other CI/CD tools, facilitating automated database deployment, version control, and continuous integration/continuous deployment pipelines.
9. **Data Warehousing:** Azure SQL Database can be used as a data warehousing solution for storing and analyzing large volumes of structured data. It integrates with Azure Synapse Analytics (formerly Azure SQL Data Warehouse) for scalable analytics and data warehousing capabilities.
10. **Hybrid Scenarios:** Azure SQL Database supports hybrid cloud scenarios, allowing organizations to extend their on-premises databases to the cloud, implement disaster recovery solutions, or create hybrid data architectures for distributed applications.

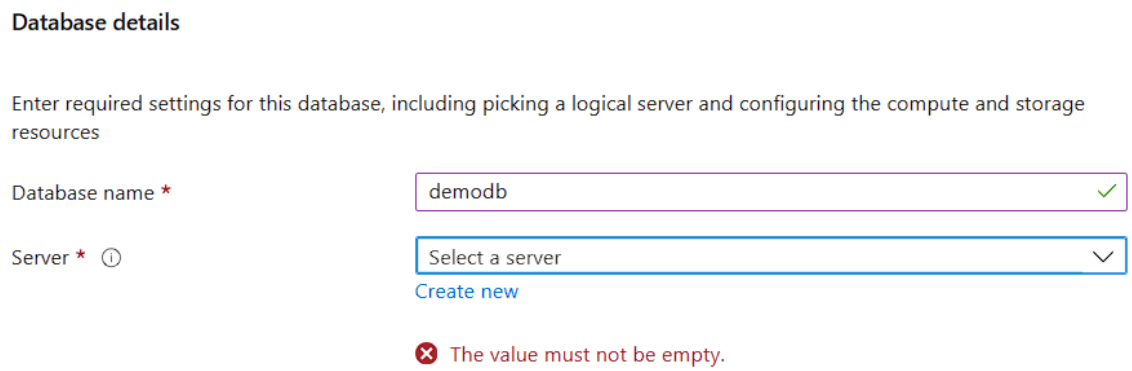
In this lab, we are creating an Azure SQL Database instance using the Azure Portal. The end goal is to have a fully managed relational database service in the cloud, capable of storing and managing data for various applications. By following the provided step-by-step instructions, users can set up the database, configure its settings, and explore its functionalities using the query editor. The lab aims to familiarize users with the process of provisioning and working with Azure SQL Database, empowering them to leverage cloud-based database solutions effectively for their projects and applications.

😄 To begin with the Lab:

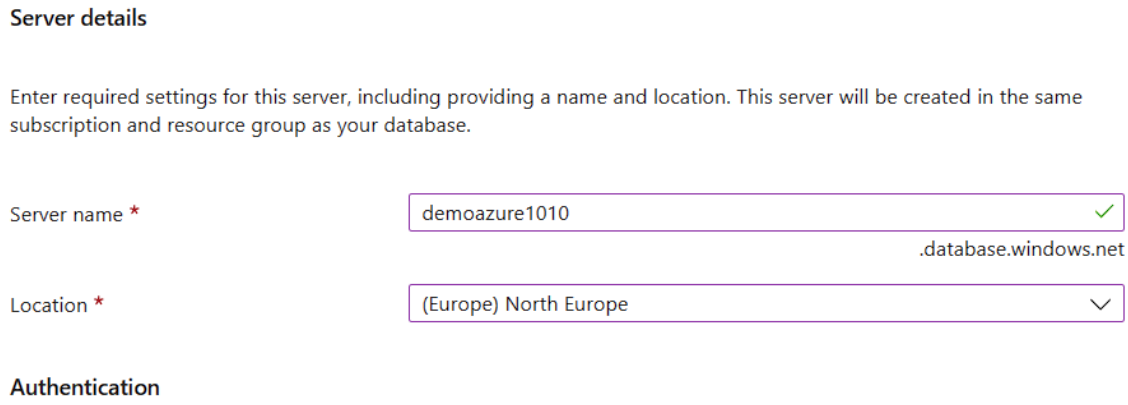
1. In your Azure Portal navigate to SQL Databases and there you have to create a new database.
2. First you have to select your subscription and then choose your resource group.



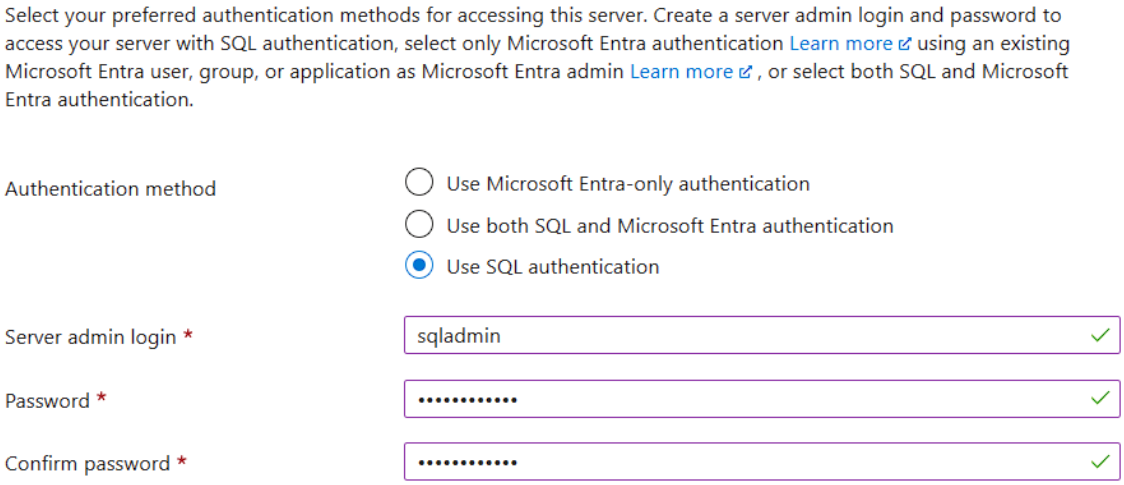
3. Then in the database details give it a database name then for the server click on create new.



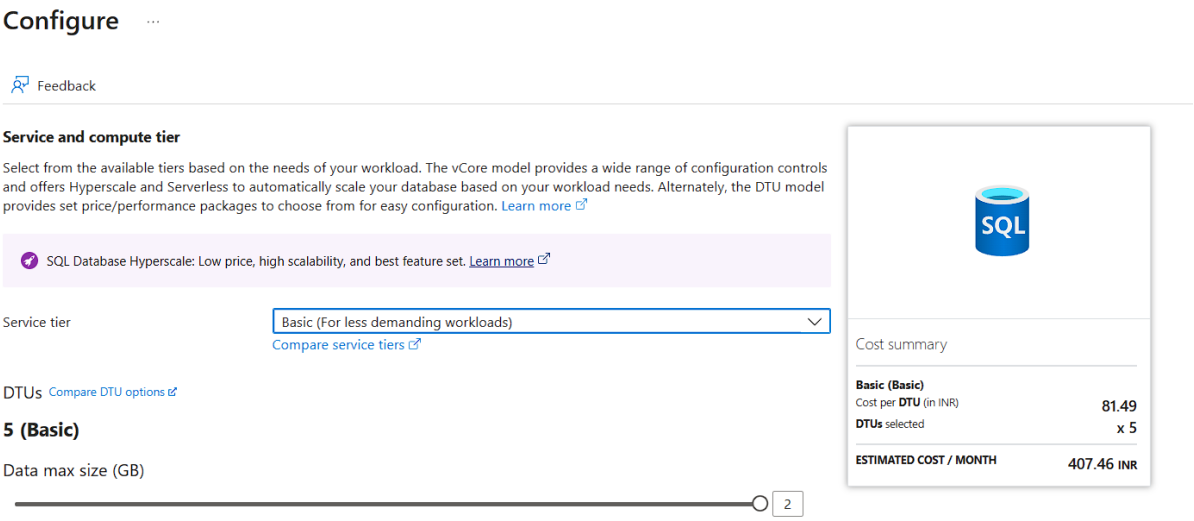
4. Now you are going to create your server for that give it a unique server name and then select your location.



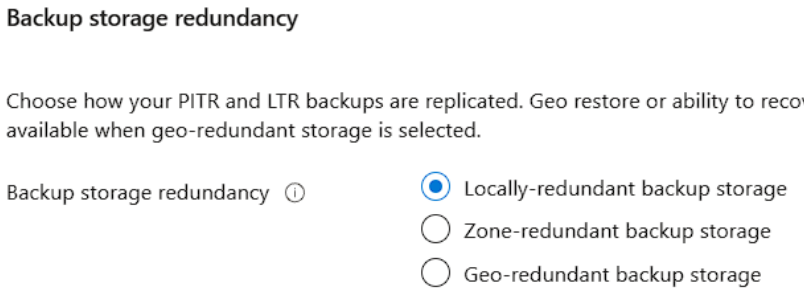
5. After that you have to authenticate your server and give it a username and password.



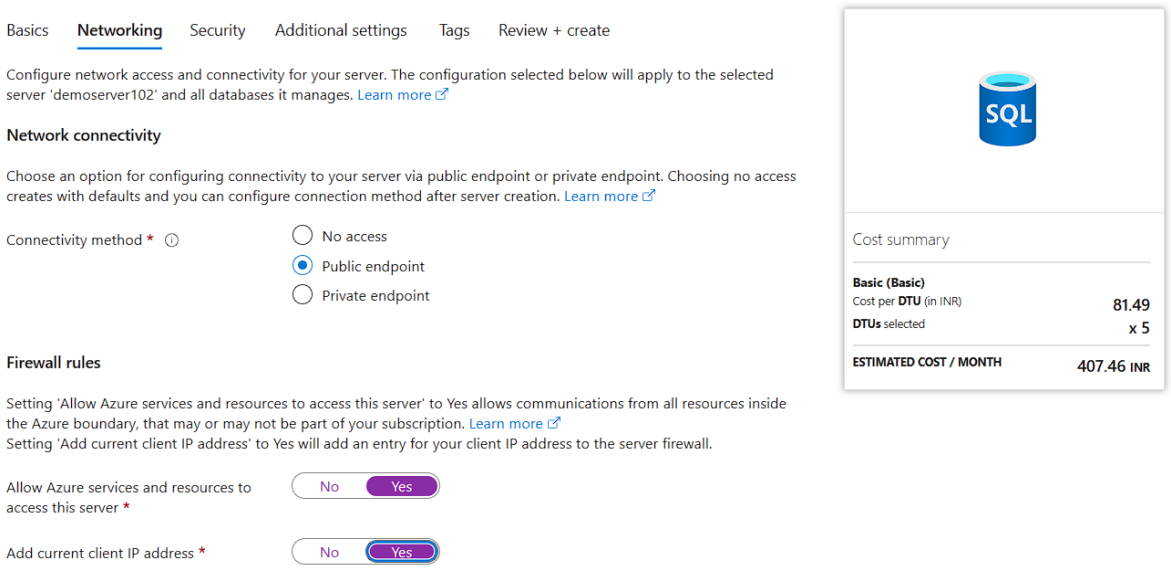
6. Now in the compute and storage option click on configure and select basic DTU for the workload.



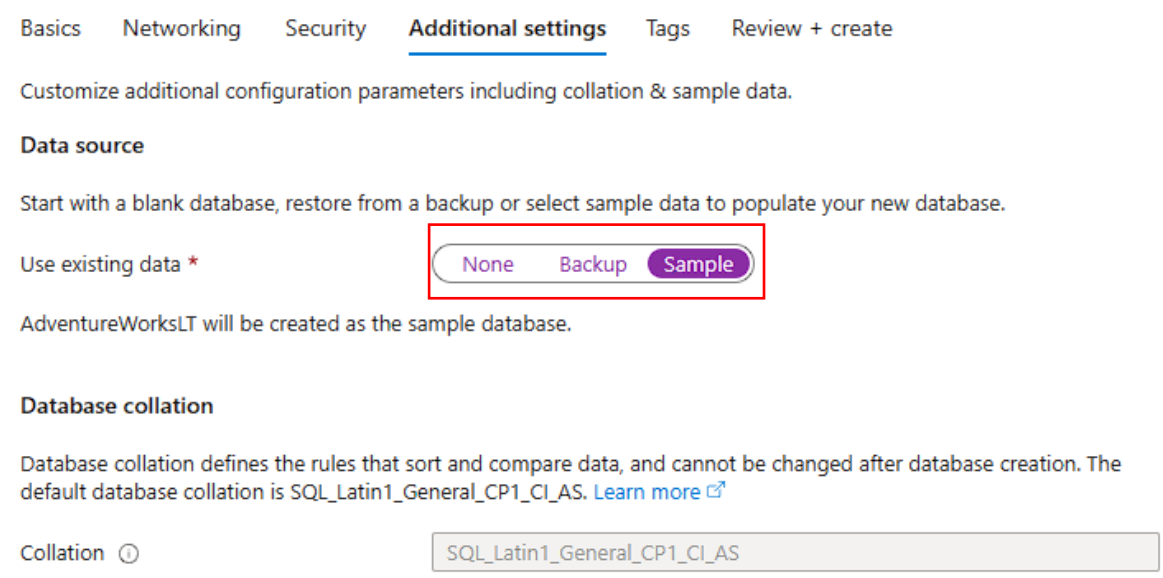
7. Now in the Backup storage you have to choose LRS.



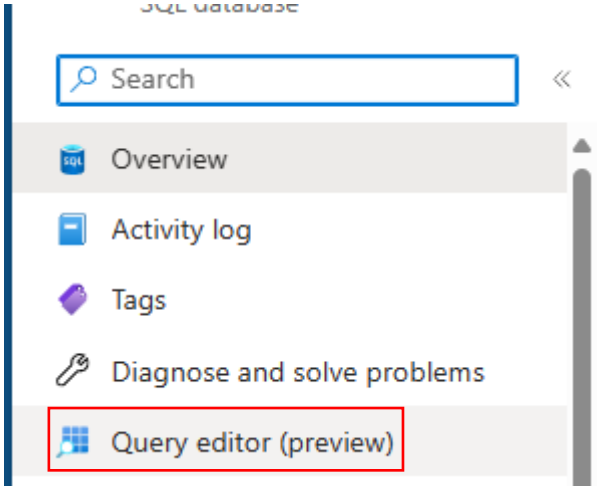
8. Now in the networking enable the public endpoint and say yes to both of the firewall rules.



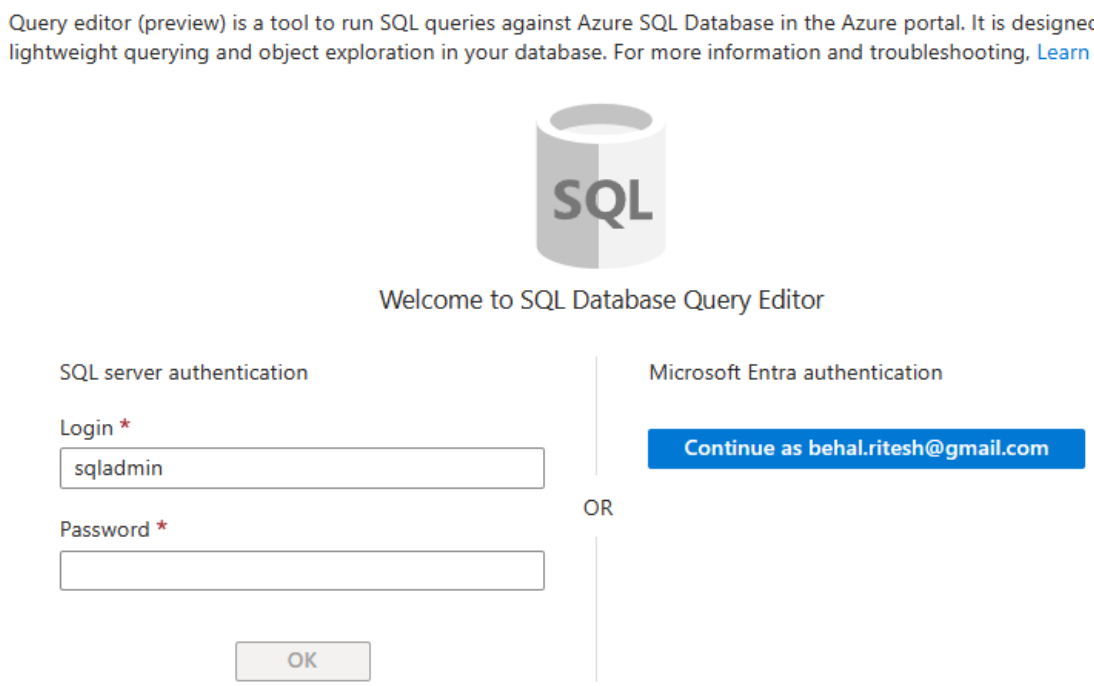
9. Now for additional settings you have to choose Sample in existing data.
10. Then you can jump to review page and create your SQL Database.



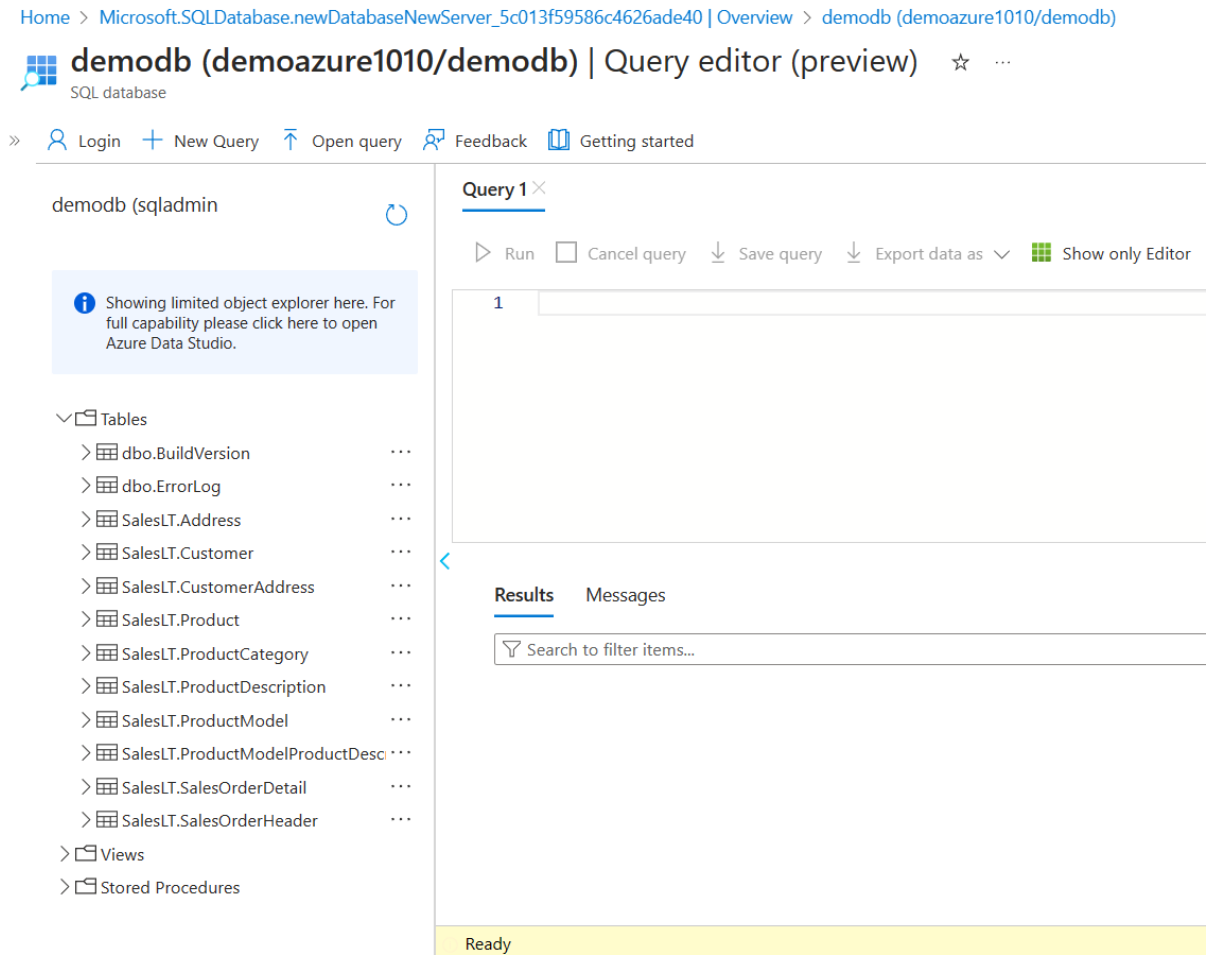
11. Now, this particular wizard is going to create two resources for us. One is a SQL database server, and the other is a SQL database. This might take around three to five minutes.
12. Once your database created click on go to resources and then from the left pane choose query editor.



13. Then it will ask you for your password. Write it down and login.



14. Here you can see that you are on a new page. Here you can run queries related to your data.
15. Now, while creating our database we clicked to load some sample data. Here in this query editor if you expand tables then you can see your tables.



16. Now right click on any of these table you can directly run the query to select 1000 rows.