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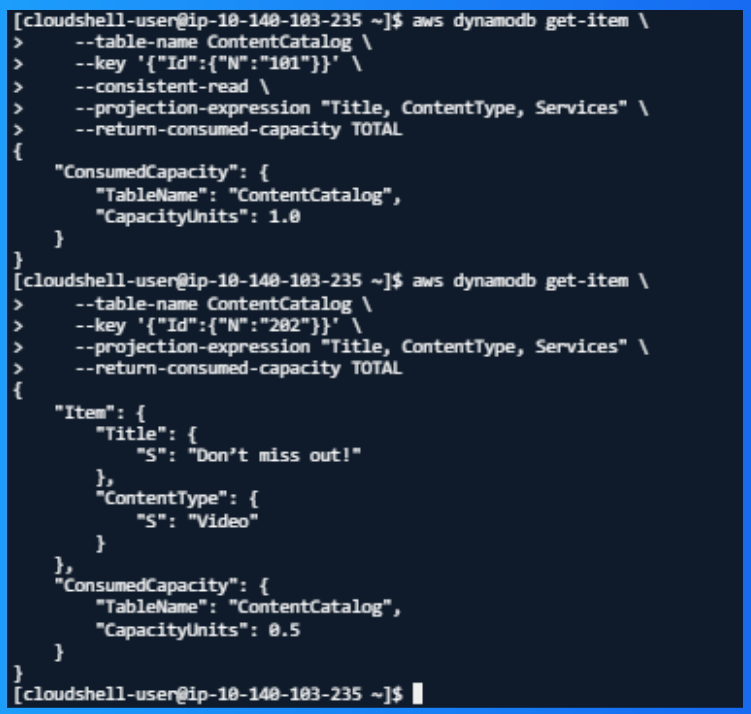
Load and Query DynamoDB Tables

Gloria



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Introducing Today's Project!

What is Amazon DynamoDB?

Amazon DynamoDB is a fully managed NoSQL database service that provides fast, scalable, and flexible data storage. It's useful because it handles large amounts of data with high performance, requires no server management.

How I used Amazon DynamoDB in this project

I used Amazon DynamoDB to create and manage tables, load data, query items, and handle transactions. I also updated related tables simultaneously to ensure consistency, demonstrating how to efficiently store and manage data in a NoSQL database.

One thing I didn't expect in this project was...

One thing I didn’t expect in this project was how transactions can update multiple tables at once, ensuring consistency. It showed me how DynamoDB handles complex operations efficiently and easily.

This project took me...

This project took me about 30 minutes to complete because I had already done most of the work in the previous project. It was a great hands-on experience learning to create tables, query data, and manage transactions in DynamoDB effectively.

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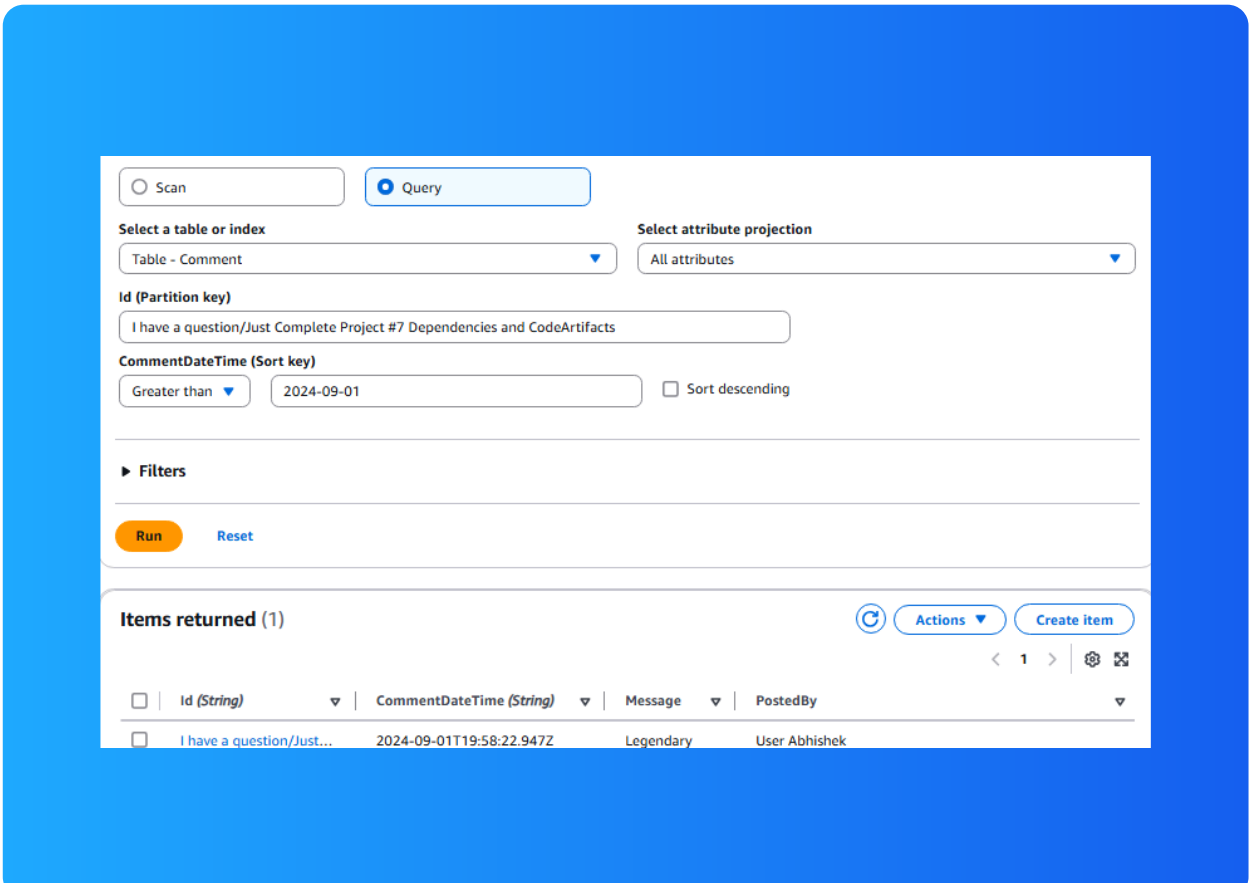
Querying DynamoDB Tables

A partition key is a unique attribute in a DynamoDB table that determines how data is distributed across partitions. It acts as a primary key and ensures efficient data storage and retrieval by organizing items based on their key values.

A sort key is an optional attribute in DynamoDB that works with the partition key to organize data within a table. It allows multiple items with the same partition key to be stored, sorted, queried in a specific order ,making data retrieval easier.



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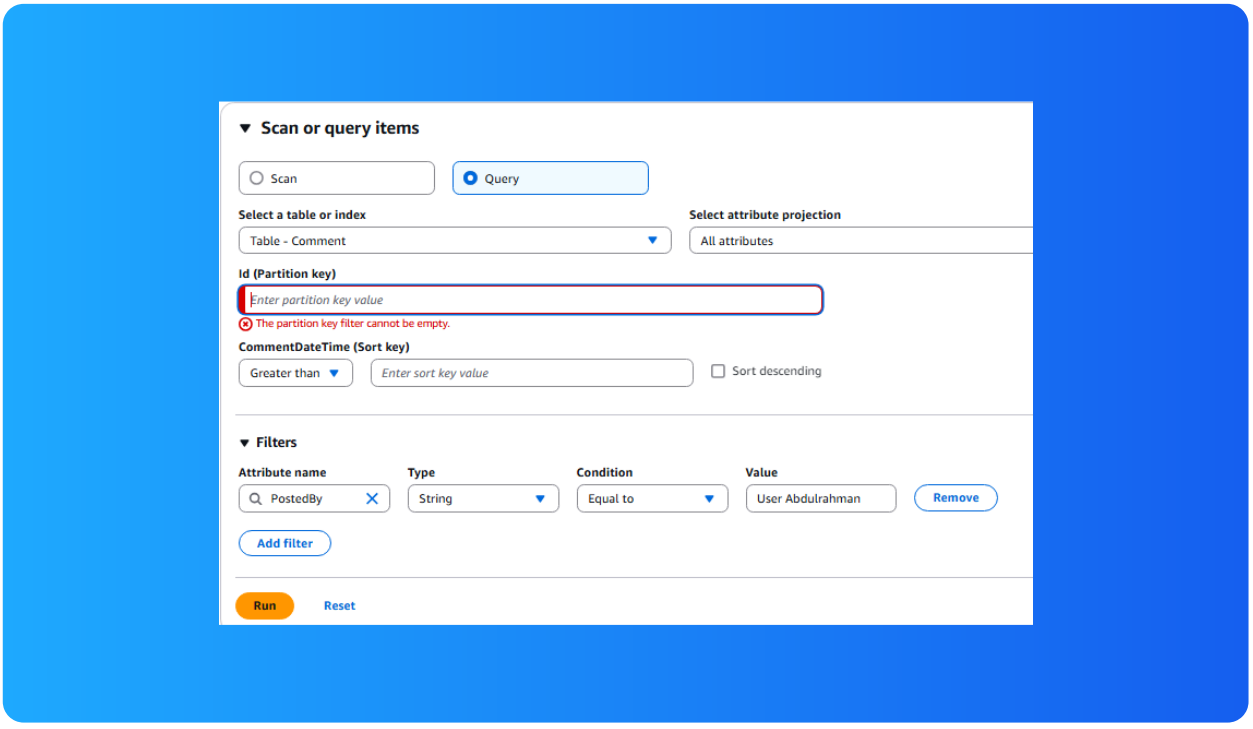
Limits of Using DynamoDB

I ran into an error when I queried for data without using the Id (Partition key). This was because DynamoDB requires the Partition key in queries to locate data efficiently. Without it, the database can't identify where the data is stored.

Insights we could extract from our Comment table includes unique Id and CommentDateTime. Insights we can't easily extract include relationships between comments or detailed context without better data modeling or additional attributes.



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Running Queries with CLI

A query I ran in CloudShell was to get an item with `Id` 202 from the ContentCatalog table. This query returned the Title, ContentType, and Services attributes while showing the capacity units consumed for the query.

Query options I could add are: Consistent Read to get the latest data, Projection Expression to pick specific attributes to show, and Return Consumed Capacity to see how much capacity the query used. These options make queries more focused and useful

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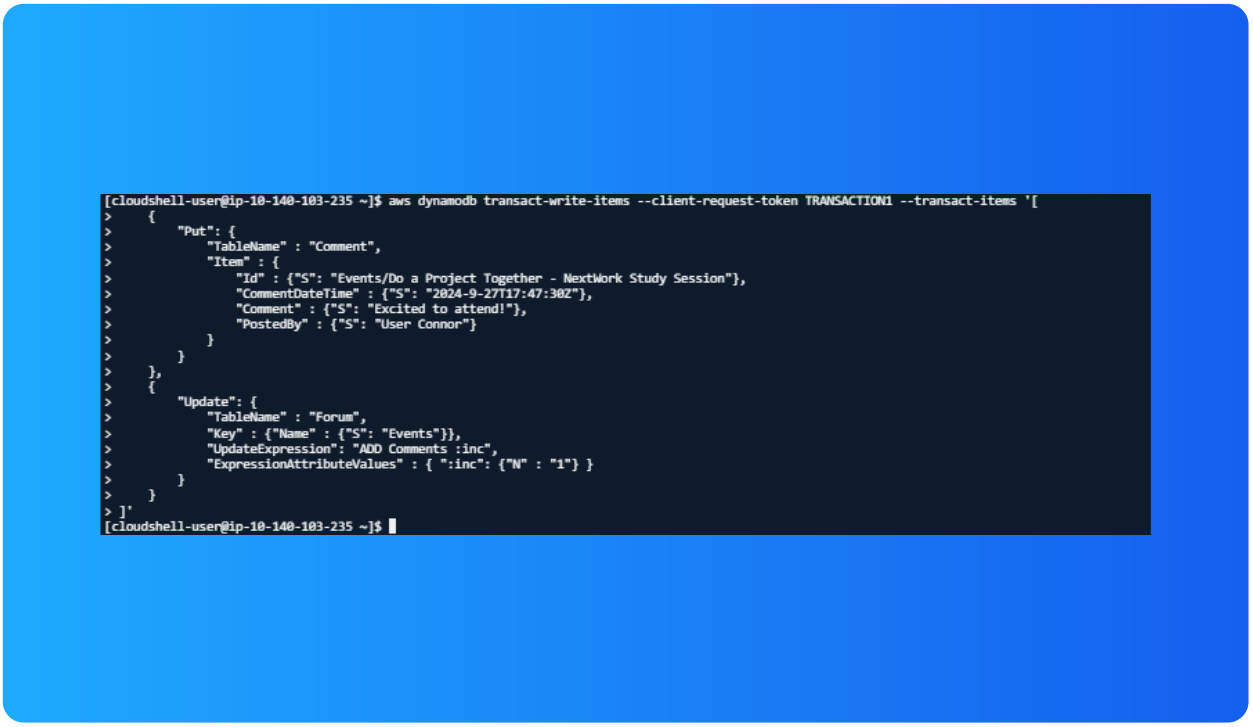
Transactions

A transaction is a group of operations performed together in DynamoDB to ensure all succeed or none are applied. It helps maintain consistency when updating multiple tables or items simultaneously.

I ran a transaction using the aws dynamodb transact-write-items command. This transaction did two things: it added a new comment to the Comment table and updated the Forum table by increasing the comment count for the Events forum by 1



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