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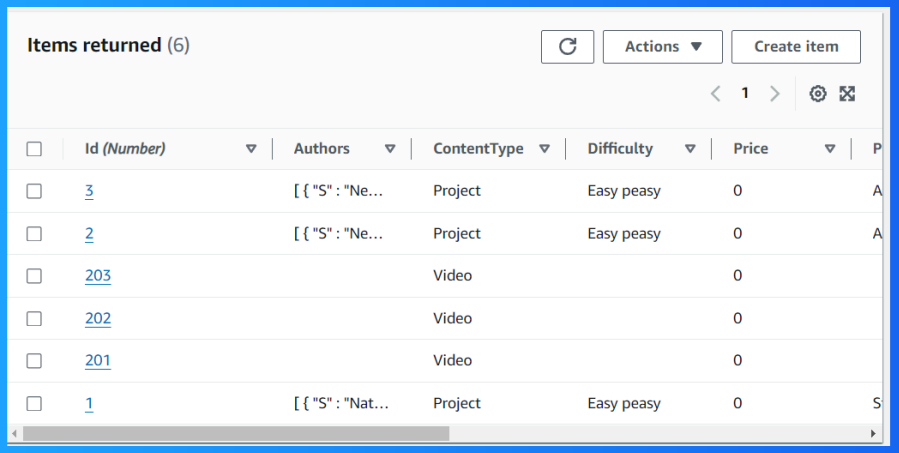
Load Data into DynamoDB

Saish Nar



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NextWork Student

Introducing Today's Project!

What is Amazon DynamoDB?

Amazon DynamoDB is a nonrelational database service with AWS that organises data using key-value pairs.

How I used Amazon DynamoDB in this project

In today's project, I used DynamoDB to create five tables. We used CloudShell and CLI to load data into our tables quickly. We also compared DynamoDB to a relational database by understanding how items and attributes works.

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

One thing I didn't expect in this project was that I could perform a lot of actions using AWS CLI instead of the console e.g. creating tables, loading data, deleting tables.

This project took me...

This project took me 60 minutes to complete.

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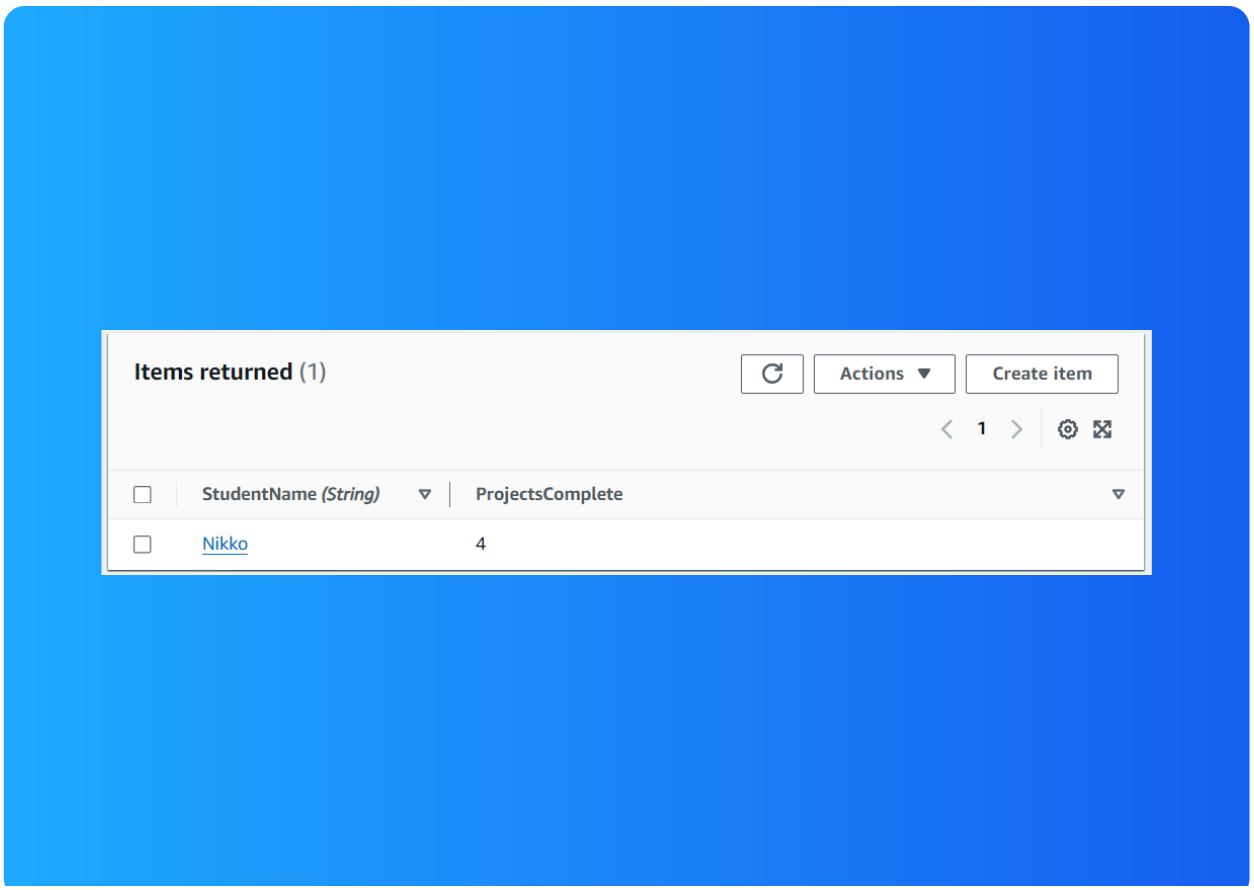
Create a DynamoDB table

DynamoDB tables organises data using items and an attributes. Every single item is recorded with a set of attributes. Items can have any number of attributes (minimum 1, for the partition key value).

An attribute is a peice of data about an item in the DynamoDB table. For example, if an item was a specific NextWorkStudent, attributes could be StudentName, ProjectsComplete, Email, SignupDate the number of attributes for each item is flexible.



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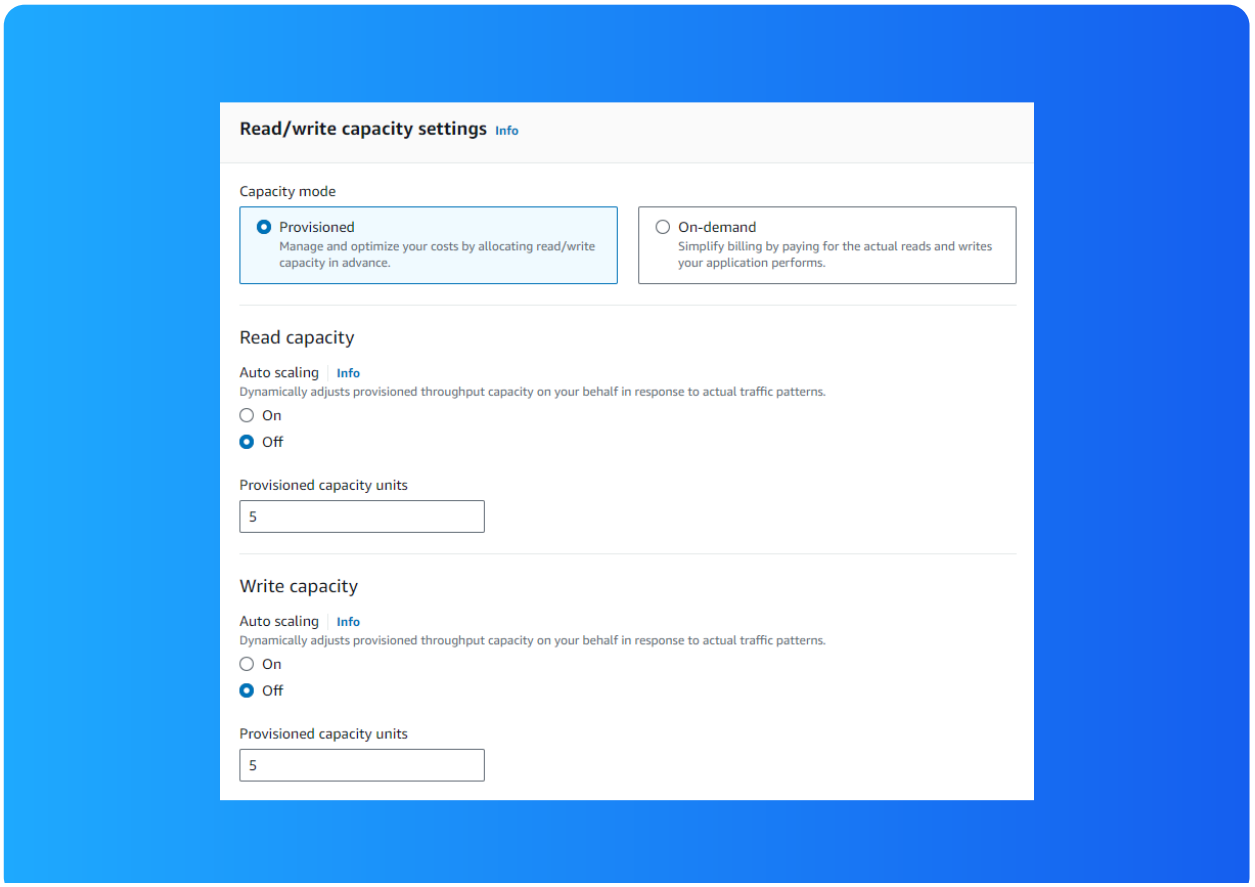
Read and Write Capacity

Read capacity units (RCUs) and write capacity units (WCUs) are units that measure my DynamoDB table's performance. DynamoDB pricing is based on RCUs and WCUs, so the more RCU/WCUs consumed, the more expensive the project.

Amazon DynamoDB's Free Tier covers 25 RCUs and WCUs monthly. I turned off auto scaling because this can result in higher charges if DynamoDB automatically scales up my operations (which charges for more RCUs and WCUs).



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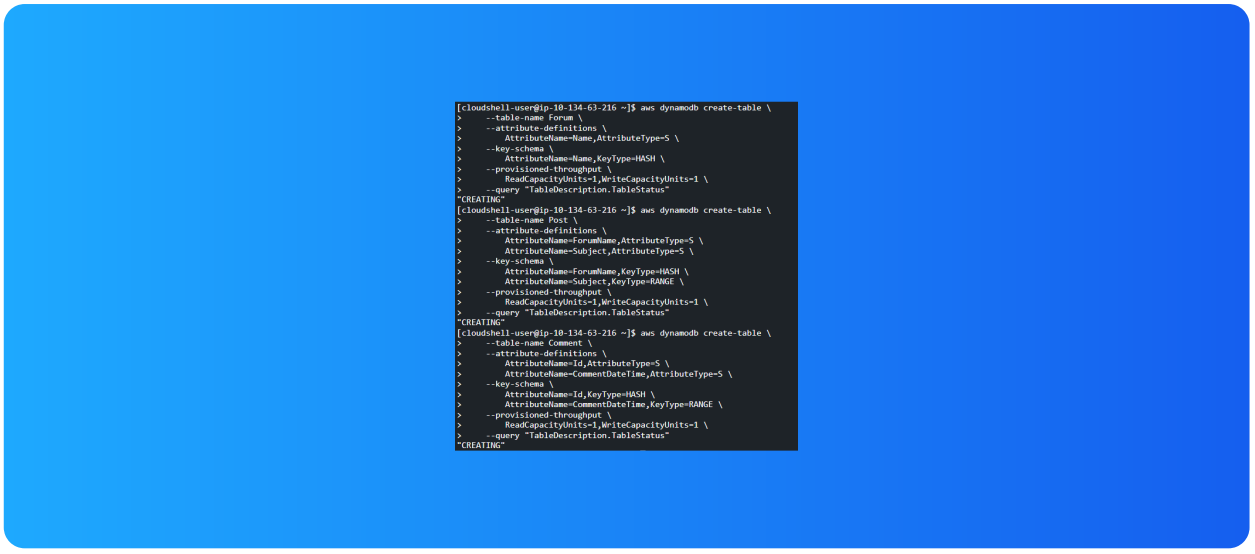
Using CLI and CloudShell

AWS CloudShell is an environment thats lets us run code to interact with our AWS resources/services. Using AWS Cloudshell is handy because AWS CLI is already installed, so we can run commands right away.

AWS CLI is a software thats lets you interact with resources using commands instead of clicks in the console. This is a very practical software that is preferred over using the AWS Management Console in day to day engineering ops in the real world.

I ran a CLI command in AWS CloudShell that created four new DynamoDB tables. The command is called aws dynamodb create-table and I could even define the table name and its attributes all within the command.



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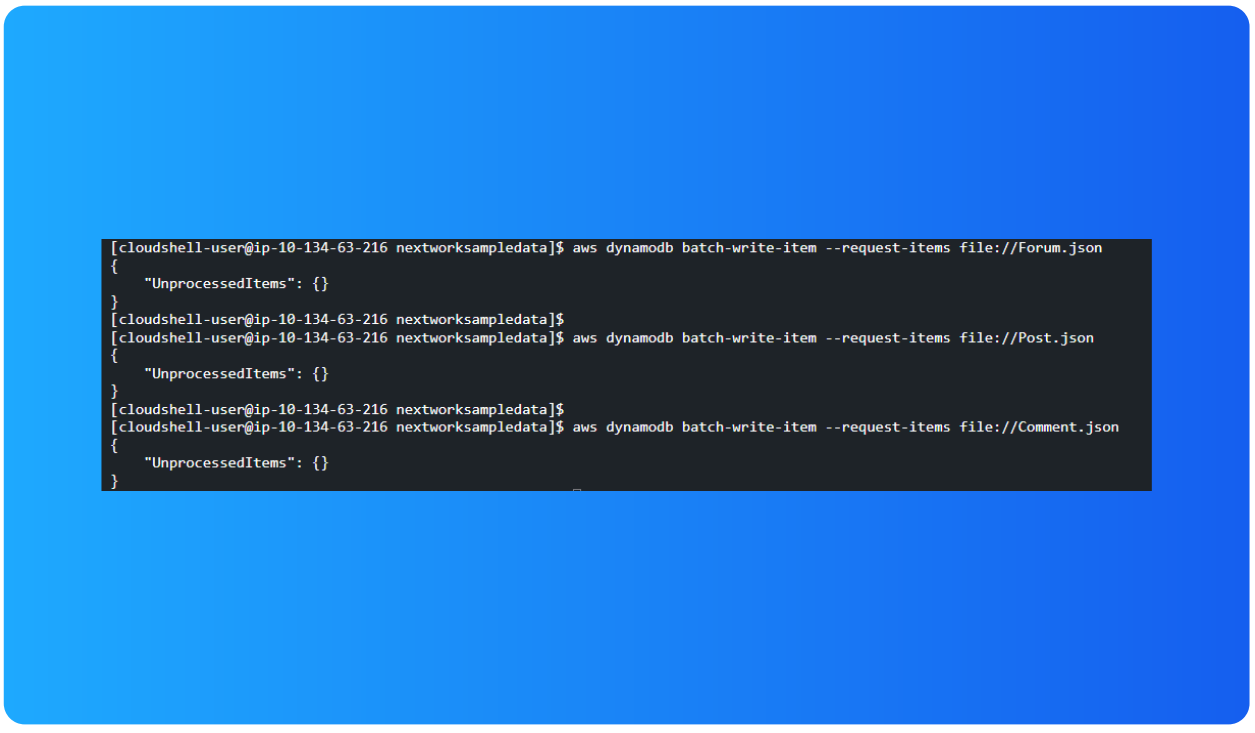
Loading Data with CLI

I ran a CLI command in AWS CloudShell that load multiple pieces of data (i.e. load multiple items) into the DynamoDB tables I set up in the previous step. This AWS CLI Command is structured as 'aws dynamodb batch-write-item --request-items file://x'



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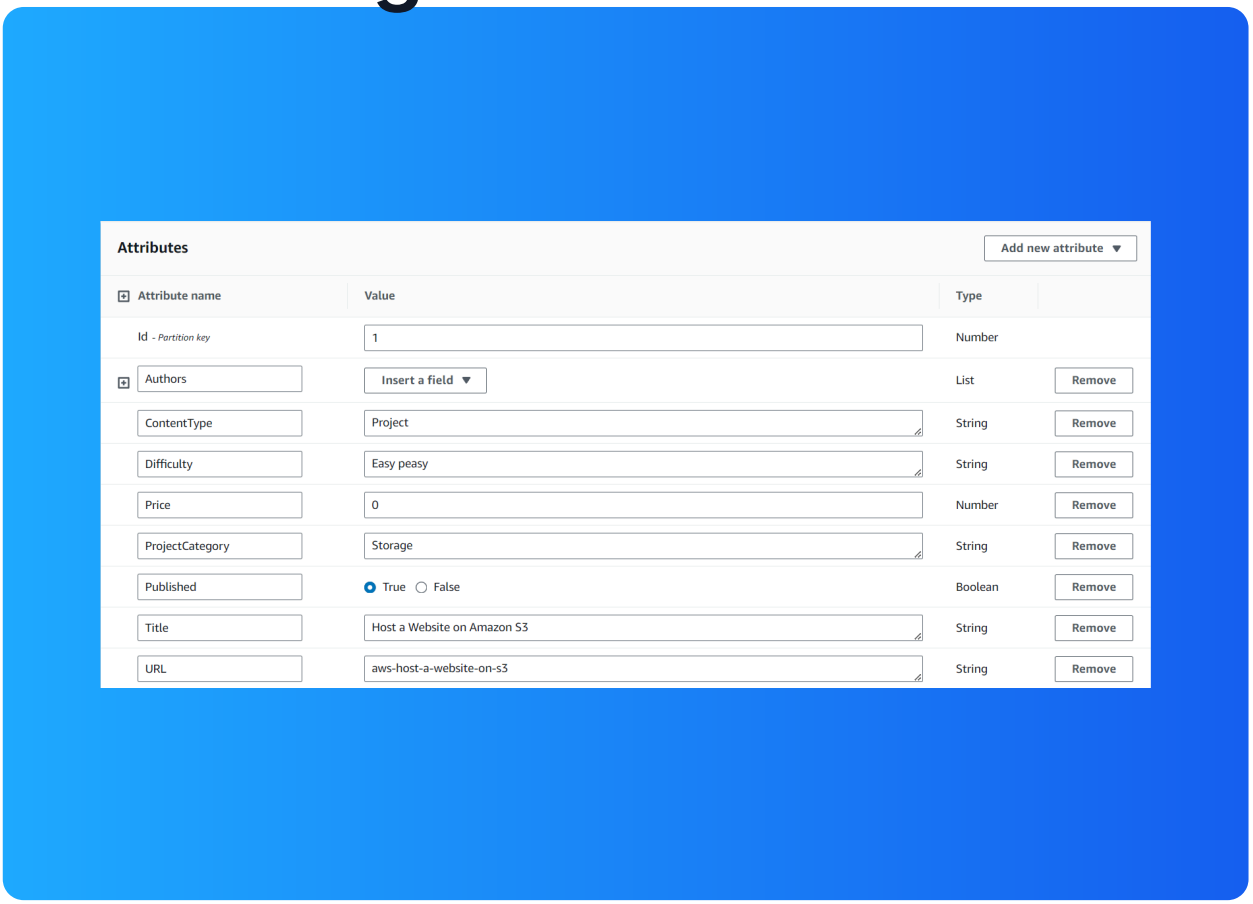
Observing Item Attributes



I checked a ContentCatalog item, which had the following attributes: Id, Authors, ContentType, Difficulty, Price, ProjectCategory, Published, Title, and URL.

'I checked another ContentCatalog item, which had a different set of attributes: Services, Title, VideoType etc.

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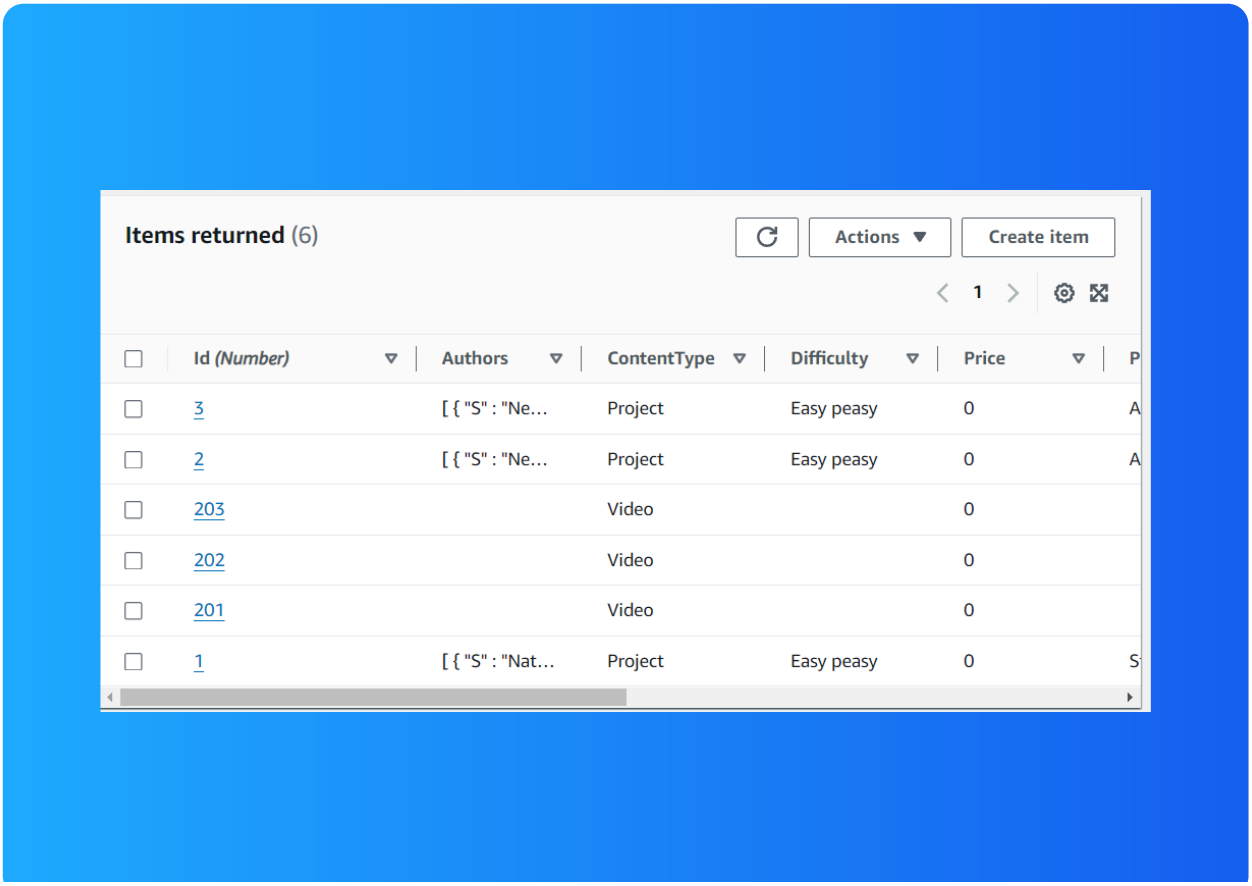
Benefits of DynamoDB

A benefit of DynamoDB over relational databases is flexibility, because items can have their own set of attributes. This is great for scenarios where a table has different types of data, and some attributes don't apply to all data in that table.

Another benefit over relational databases is speed, because DynamoDB can quickly partitions data to narrow down asearch using partition keys. This is faster than relational databases, which need to scan entire tables to find specific pieces of data.



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