

Principles: Cloud Databases

Technology: DynamoDB

Assumptions

Students have completed the “AWS SDK” exercise

Out of class learning activities

AWS DynamoDB is a NoSQL (i.e., non-relational) cloud database. To learn about DynamoDB, read the following portions of the DynamoDB Developer Guide.

Read the “How it Works” section (all sub-sections)

<https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/HowItWorks.html>

Read the “Getting Started with DynamoDB” section (all sub-sections). This section covers basic concepts, and shows you how to perform DynamoDB operations using the AWS web console and AWS command-line interface (CLI).

<https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/GettingStartedDynamoDB.html>

In the “Getting Started with DynamoDB SDK” section, read EITHER the sub-section titled “Java and DynamoDB” OR the sub-section titled “JavaScript and DynamoDB”, depending on which language you want to use for the in-class exercise (Java or Typescript).

<https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/GettingStarted.html>

Read the following page that provides additional information about how to perform DynamoDB queries, including limiting and paginating query result sets.

<https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/Query.html>

From your reading you should learn about the following:

1. What is DynamoDB?
2. The fundamental DynamoDB data model: Tables, Items, Attributes
3. The data types supported by DynamoDB
4. What is a “partition”?
5. Table primary keys
 - a. What is a “primary key”?
 - b. What is a “partition key”? What is it for?
 - c. What is a “sort key”? What is it for?
 - d. What is the difference between a “simple primary key” and a “compound primary key”?
6. Secondary indexes
 - a. What is a “secondary index”?
 - b. What are secondary indexes for?
 - c. What is the difference between a “local secondary index” and a “global secondary index”?
7. How to perform DynamoDB operations through the AWS web console and AWS command-line interface (CLI)

Command-Line Interface (CLI)

8. How to perform DynamoDB operations using the AWS SDK
9. How do you limit the number of items in a query result set?
10. What does it mean to “paginate” query results?
11. How do you paginate query results in DynamoDB?

(Optional)

In addition to the above reading, if you would like a video course on DynamoDB, the Pluralsight course named “AWS DynamoDB Deep Dive” is pretty good. The first four modules are the most relevant for this class: “Course Overview”, “Introduction”, “Getting Started with DynamoDB”, and “Developing with DynamoDB” [you can stop after the “Implementing Comments (cont.)” section].

<https://app.pluralsight.com/library/courses/aws-dynamodb-deep-dive/table-of-contents>