# **Serverless Cloud Dictionary Application**

## **Project Overview**

I built a serverless cloud dictionary application using AWS services to provide users with an easy way to search for and view definitions of cloud-related terms. This solution eliminates the need for traditional server-based hosting by leveraging AWS’s serverless offerings, resulting in a scalable, cost-effective, and highly available dictionary application. The system enables users to query and store cloud technology definitions through a simple web interface.

## **Architecture and Services Used**

The system architecture I designed consists of:

* Frontend Hosting: AWS Amplify hosts the React-based web application, providing a fast and secure user interface.
* Backend Processing: AWS Lambda functions handle API requests to fetch and insert dictionary terms.
* API Management: Amazon API Gateway manages RESTful endpoints, enabling communication between the frontend and backend.
* Database Layer: Amazon DynamoDB stores dictionary terms and their definitions in a fully managed, scalable NoSQL database.
* Security: IAM roles and policies enforce secure, least-privilege access between AWS services.

## **Implementation and Workflow Execution**

I successfully executed the following steps to deliver the solution:

* Developed and deployed a React frontend application on AWS Amplify.
* Designed and configured a DynamoDB table to store dictionary terms and definitions.
* Implemented AWS Lambda functions to fetch terms from DynamoDB and add new entries.
* Set up API Gateway to expose secure REST endpoints for frontend–backend communication.
* Created and applied IAM roles and policies to ensure secure integration across services.
* Tested the end-to-end workflow by searching and adding cloud-related terms through the web application.

**Outcome and Impact**

This project showcases my ability to design and implement a fully serverless application on AWS. By integrating Amplify, Lambda, API Gateway, and DynamoDB, I created a scalable, reliable, and secure cloud dictionary that simplifies access to cloud-related knowledge. The project demonstrates my skills in building serverless architectures, implementing secure APIs, and managing AWS resources efficiently.