UPES

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Cloud Application Development theory (theory)

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Aws SDK based nim game

Initially I am going to use AWS SDK alongside with JavaScript to build my application. using AWS SDK, I am going to integrate various AWS services with my application, such as:-

(1) Amazon DynamoDB and for state storage

As part of my application, I need to save the state of an existing game. I also need to notify the user at various points in the game. Notify when a user invites you to a new game, when it's your turn, and when a winner is determined.

Amazon DynamoDB is used to store existing game state and persist it between rounds. Amazon SNS is used to notify players at important points in the game.

(2) Amazon SNS for SMS messaging

When creating a turn-based game, we need a way to contact our users and inform them about important events. This includes notifications that a new game has started, that it's your turn, or that the game has ended.

We use Amazon Simple Notification Service (Amazon SNS) to notify users. Amazon SNS is a fully managed messaging system that enables pub/sub functionality and direct messaging to SMS and email.

(3) Amazon Cognito for user authentication

I am going to use Amazon Cognito User Pools. Allow users to register through our application. After registering, player can log in via the client and receive his ID token. This ID token can be passed to your application as a header to authenticate the user.

(4) AWS Lambda for compute

We are going to use AWS Lambda, for serverless computing service. With AWS Lambda, we don't have to worry about server management or capacity

planning. Simply upload the code which we want to run and AWS will execute it when the configured event triggers occur.

So, I am going to use AWS in order to build my application and its services.

Because:-

(1) now , I am using AWS because of less pricing as compare to other cloud services.as we know while building any applications we require a platform which comes at less price and also have better customer and community support.

(2)better services avaibility ,security and accessibility at compare to other cloud services such as azure and google cloud platform.

(3)as compare to other cloud services , AWS provides better scalability ,can provide more options to configure our desired services.

(4)AWS used s3 object storage for which is better and longer running as compare to storage services of other cloud vendors. Such as azure which uses block storage for storage purposes.

(5)better integration and responsiveness with third party tools ,as compared to other cloud service providers.

■ **Workflow diagram**

```
┌─────────────┐      ┌─────────────┐      ┌─────────────────┐
│             │      │             │      │ login(to generate│
│   start     │─────▶│ authenticate│─────▶│ GameID)         │
│             │      │             │      │                 │
└─────────────┘      └─────────────┘      └─────────────────┘
                                                   │
                                                   ▼
┌─────────────────┐      ┌─────────────────┐
│ Fetchgame(to fetch│    │ Creategame(to   │
│ the current state of│◀─│ create a new game│
│ the game)       │      │ using gameID)   │
└─────────────────┘      └─────────────────┘
         │
         ▼
┌─────────────────┐
│ Performmove(to  │
│ simulate the    │
│ performed move and│
│ send SMS)       │
└─────────────────┘
```