Module 7 : Database

Relational: Structured Query Language (SQL)

Amazon RDS: ***Managed : Automated Patching
- Cost optimization, Multi-AZ deployment, Performance optimization, Security controls
- Supported DB Engines: MySQL, PostgreSQL, MariaDB, Aurora, Oracle, MS SQL

Amazon Aurora: ***Compatible with MySQL & PostgreSQL
- Use : (1) Gaming applications (2) Media & Content management (3) Real-time analytics.
- 5 x MySQL | 3 x PostgreSQL | 10 GB - 128 TB | 3 AZs | 6 copies of data (Up to 15 total) | 35 days

NoSQL:

Amazon DynamoDB: ***Fully managed   ***SERVERLESS   ***single-digit millisecond response
- Fast & predictable performance for both document and **key-value** data structures.
- Use: Gaming platforms, financial service apps, and mobile applications with global user bases.

In-memory caching: Sub-millisecond latency for read-write operations. #**Amazon ElastiCache:**
- Redis, Valkey, or Memcached tools
- Use : (1) Game leaderboards,   (2) Session data management,   (3) Database query enhancement
- Automatically detects and replaces failed nodes

Amazon DocumentDB (with MongoDB compatibility): *** Fully Managed
- Store, query, and index JSON data effortlessly | 15 replica instances | 64 TB in 10 GB increments

AWS Backup:
- Single dashboard for monitoring and managing backups.
- Supports multiple storage types, i.e., EBS, EFS.

Amazon Neptune: *** Fully Managed
- **Graph** database service that manages highly connected data sets
- Social **network** user connection mapping, fraud **detection** systems, search/ Recommndtn systems.

Amazon Managed Blockchain: *** Fully Managed
- Create, manage, and scale blockchain networks   - Decentralized system

AWS SCT:
- Convert your existing database schema from one database engine to another