1a)

**Definition:**

NoSQL databases are a category of database management systems that do not use the traditional relational model found in SQL databases. Instead, they handle schema-less unstructured or semi-structured data.

**Key features:**

* Flexible schema. Can store unstructured or semi-structured data.
* High scalability. Can scale across multiple servers.
* Optimized for fast read/write operations.

1b)

|  |  |  |
| --- | --- | --- |
| **Parameter** | **SQL Databases** | **NoSQL Databases** |
| Schema | Fixed | Flexible |
| Scalability | Vertical (scale-up) | Horizontal (scale-out) |
| Data Storage | Tables with rows and columns | Documents, key-value pairs, graphs, or columnar |
| Use Case | Structured data | Unstructured data |

c)

**Two real-world use cases:**

* Social media platforms. NoSQL databases are ideal for storing user profiles, posts, and comments, which are often unstructured and need high scalability.
* E-commerce product catalogues. Products often have many different attributes (color, size, weight) that may vary by product category. NoSQL databases allow flexible schemas, making it easier to store product data.