Understanding Not-Deterministic Functions in MySQL

What are Not-Deterministic Functions?
Not-deterministic functions are those that do not always produce the same output for the same input. These functions depend on factors like the system state or random number generation. Examples include functions like NOW() and RAND(), which return the current timestamp or random numbers, respectively.

Purpose of Not-Deterministic Functions
These functions are commonly used when dynamic or variable results are needed, such as generating random values, fetching the current timestamp, or working with real-time data.

When is NO SQL Used?
The NO SQL clause is used in MySQL user-defined functions when the function does not access any database tables and is purely computational. For example, generating random numbers or returning the current time does not require table access, so NO SQL is appropriate.

Examples of Not-Deterministic Functions Using NO SQL

Example 1: Random Numbers Between 0 and 1

```
DELIMITER $$
CREATE FUNCTION rand_num_generator()
RETURNS double
NOT DETERMINISTIC
NO SQL
BEGIN
   RETURN RAND();
END $$
DELIMITER ;

SELECT rand_num_generator();
```

Example 2: Random Integer Between 0 and 99

```
DELIMITER $$
CREATE FUNCTION rand_num_generator_2()
RETURNS int
NOT DETERMINISTIC
NO SQL
```

```
BEGIN
   RETURN FLOOR(RAND() * 100);
END $$
DELIMITER ;

SELECT rand_num_generator_2();
```

Example 3: Current Timestamp

```
DELIMITER $$
CREATE FUNCTION time_NOW()
RETURNS timestamp
NOT DETERMINISTIC
NO SQL
BEGIN
   RETURN NOW();
END $$
DELIMITER ;
SELECT time_NOW();
```