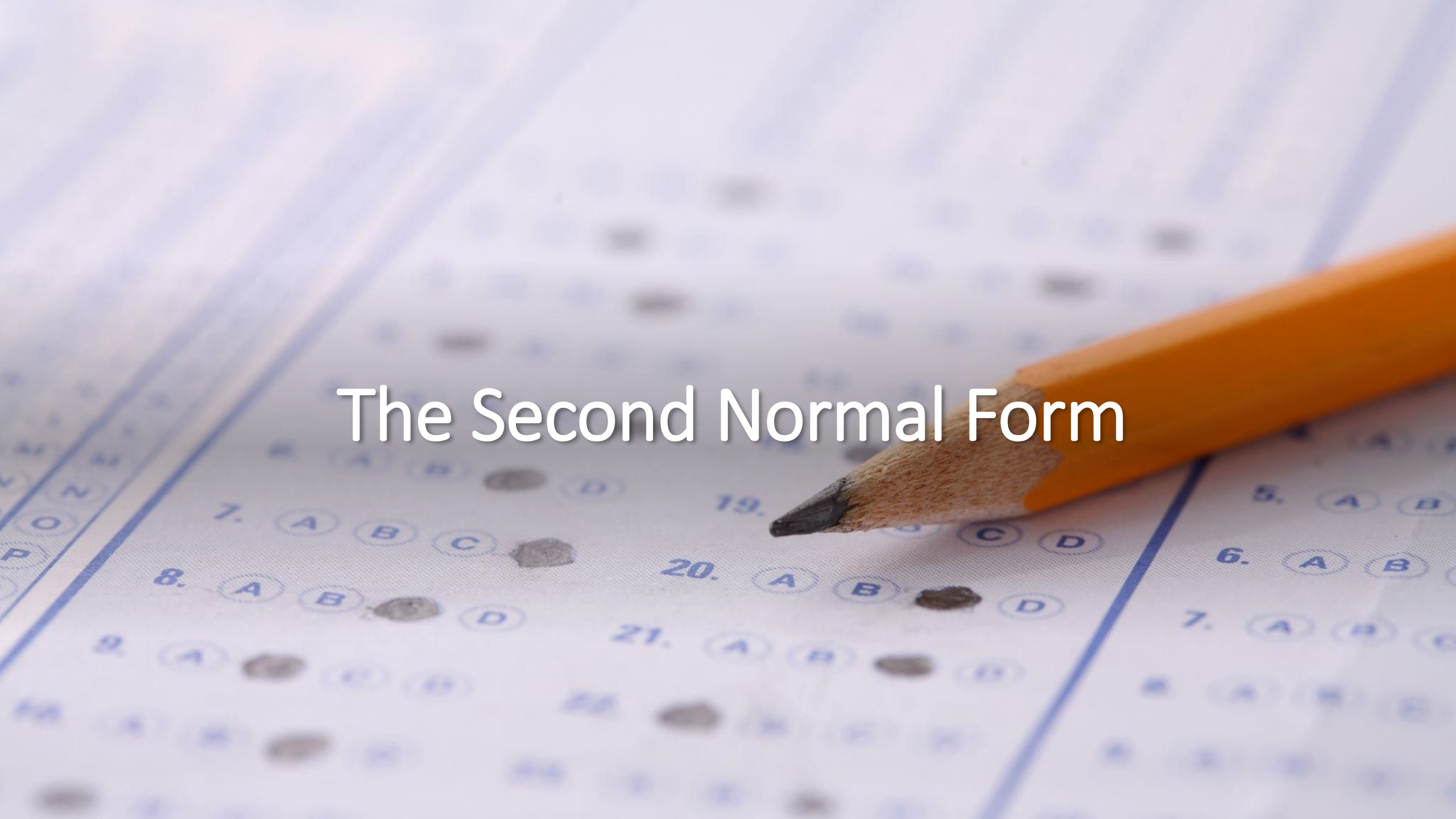# The Second Normal Form

# Second Normal Form Definition

- All Tables are in 1$^{st}$ Normal Form.
- All the non-key columns are dependent on the table's primary key.

Let me explain…

# Ask Yourself:  What is the Table's Purpose?

Does this column serve to describe what the primary key identifies?

# Outcome

✔ If you answer "yes," then the column is dependent on the primary key and belongs in the table.

✕ If you answer "no," then the column should be moved different table.

When all the columns relate to the primary key, they naturally share a common purpose, such as describing an employee. That is why I say that when a table is in second normal form, it has a single purpose, such as storing employee information.

# Primary Key Dependency Example

Employee

| Primary Key | Column 1 | Column 2 | Column 3 |
|---|---|---|---|
| Employee ID | Employee Name | ~~Course Number~~ | Employee Number |

# Primary Key Dependency Example

Class

| Primary Key | Column 1 | Column 2 | Column 3 |
|---|---|---|---|
| Class ID | Class Name | ~~Student Name~~ | Credit Hours |

# Primary Key Dependency Example

## Soccer Game ✓

| Primary Key | Column 1 | Column 2 | Column 3 |
|---|---|---|---|
| Game Number | Home Team | Away Team | Score |

# Primary Key Dependency Example

## Student Enrollment

| Primary Key | Column 1 | Column 2 | Column 3 |
|---|---|---|---|
| Student Number, Course Number | Enrollment Date | ~~Student Name~~ | Final Grade |

# Second Normal Form Definition

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