

WEEK 4

What is an SQL **Table**?

PRESENTED BY FILSAN MUSA & FADUMO DIRIYE

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Tabular Data Storage

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Data is organized in a table format consisting of rows (records) and columns (fields).

Row: Represents an individual entry in the table.

Column: Represents an attribute or characteristic, similar to variables in programming.

Value: A single element of data, like a cell in a spreadsheet.

Key Components of a Table

The diagram illustrates the components of a table using a sample table. Red boxes and arrows highlight specific parts:

- Field:** A red box highlights the 'ISSNs' column header, with an arrow pointing to the label.
- Table:** A red box highlights the entire table structure, with an arrow pointing to the label.
- Record:** A red box highlights the entire row with 'id' 4, with an arrow pointing to the label.
- Value:** A red box highlights the cell containing '2079-6374' in the 'ISSNs' column of the row with 'id' 7, with an arrow pointing to the label.

id	ISSN-L	ISSNs	PublisherId	Journal_Title
0	2056-9890	2056-9890	1	Acta Crystallographica Section E Crystallographic Communications
1	2077-0472	2077-0472	2	Agriculture
2	2073-4395	2073-4395	2	Agronomy
3	2076-2615	2076-2615	2	Animals
4	2076-3417	2076-3417	2	Applied Sciences
5	2306-5354	2306-5354	2	Bioengineering
6	2079-7737	2079-7737	2	Bioinformatics
7	2079-6374	2079-6374	2	Biochemistry

Row (Record):

- Represents an individual data entry.
- Example: A single person's name and details in a contact list.

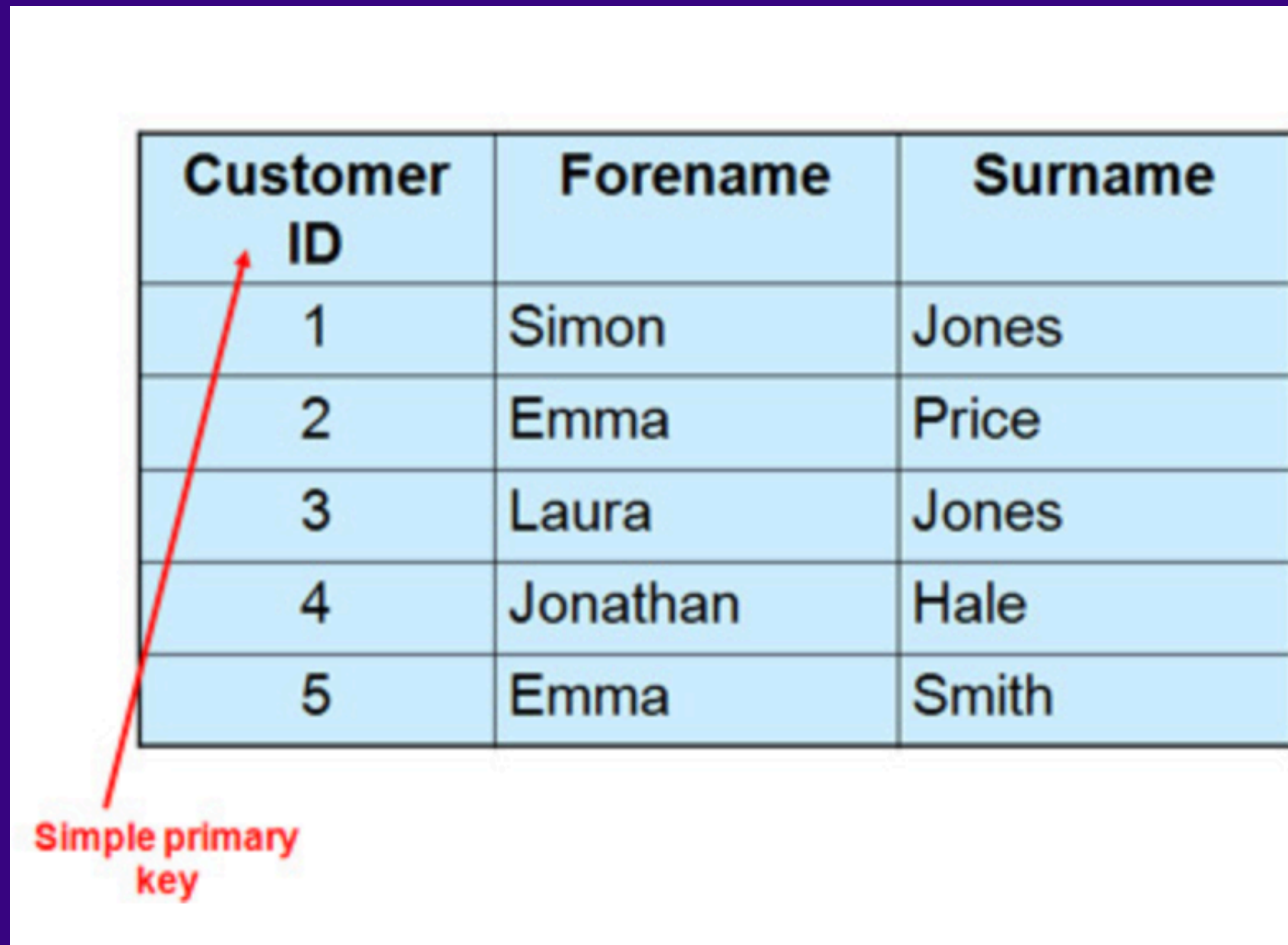
Column (Field):

- Represents specific attributes or characteristics.
- Example: Columns labeled "Name," "Email," "Phone Number."

Value (Field Data):

- A single piece of information at the intersection of a row and column.
- Example: "John Doe" in the "Name" column.

Primary Key



A diagram illustrating a database table with a primary key. The table has three columns: Customer ID, Forename, and Surname. The Customer ID column contains values 1, 2, 3, 4, and 5. The Forename column contains Simon, Emma, Laura, Jonathan, and Emma. The Surname column contains Jones, Price, Jones, Hale, and Smith. A red arrow points from the text 'Simple primary key' to the Customer ID column, indicating it is the primary key.

Customer ID	Forename	Surname
1	Simon	Jones
2	Emma	Price
3	Laura	Jones
4	Jonathan	Hale
5	Emma	Smith

Simple primary key

A unique identifier for each entry in the table.

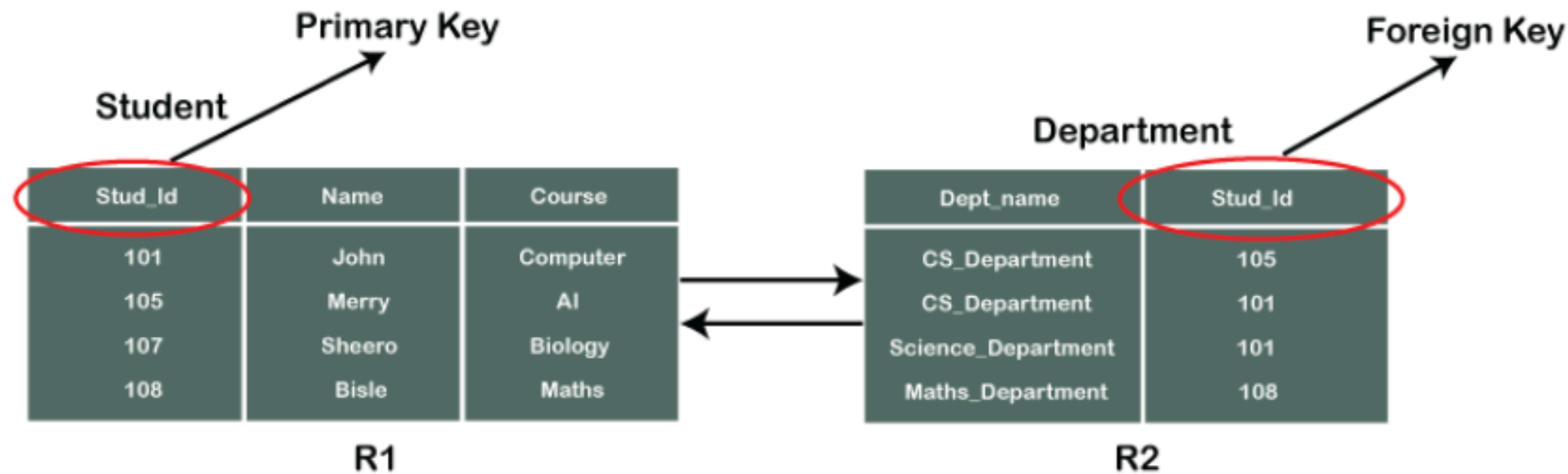
Natural Primary Key:

- Derived from existing data.
- Examples: Email addresses, user IDs, device IDs.

Purpose:

- Ensures each record is distinct.

Foreign Key



Purpose:

- Establishes relationships between tables.
- References the primary key in the related table.

Examples:

- Parent Table: Customers (Primary Key: Customer ID).
- Child Table: Orders (Foreign Key: Customer ID).

A column or set of columns that links one table to another.

Recap and Next Steps

- Summary:
 - Tables consist of rows, columns, and values.
 - Primary keys uniquely identify records.
 - Foreign keys establish links between tables.
- Next Steps:
 - Practice creating tables with primary and foreign keys.
 - Complete Week 4 Quiz