

Lecture 4: Relationships Between Tables in Access 2019

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■ Introduction

In relational databases like Microsoft Access, relationships are used to connect data across multiple tables. This avoids duplication and ensures data integrity.

■ What is a Relationship?

A relationship is a link between two tables that defines how data in one table relates to the data in another. Relationships are established using keys.

■ Types of Keys:

- Primary Key: Uniquely identifies each record in a table.
- Foreign Key: A field in one table that refers to the primary key in another table.

■ Types of Relationships:

1. One-to-One (1:1): Each record in Table A matches one record in Table B.
2. One-to-Many (1:N): One record in Table A matches many records in Table B. This is the most common relationship.
3. Many-to-Many (M:N): Records in both tables relate to multiple records in the other. Requires a junction table.

■■ How to Create Relationships in Access:

1. Go to the 'Database Tools' tab.
2. Click on 'Relationships'.
3. Add the tables you want to relate.
4. Drag the primary key from one table and drop it onto the foreign key of another table.
5. Define relationship type and enforce referential integrity.

■ Visual Example: Relationship Window in Access

[Image Placeholder: Relationship diagram showing One-to-Many between Students and Courses tables]

■ Benefits of Using Relationships:

- Avoids data redundancy
- Maintains consistency and accuracy
- Allows complex queries across related tables

■ Summary

Table relationships are essential for designing effective and scalable Access databases. They help structure your data efficiently and logically.