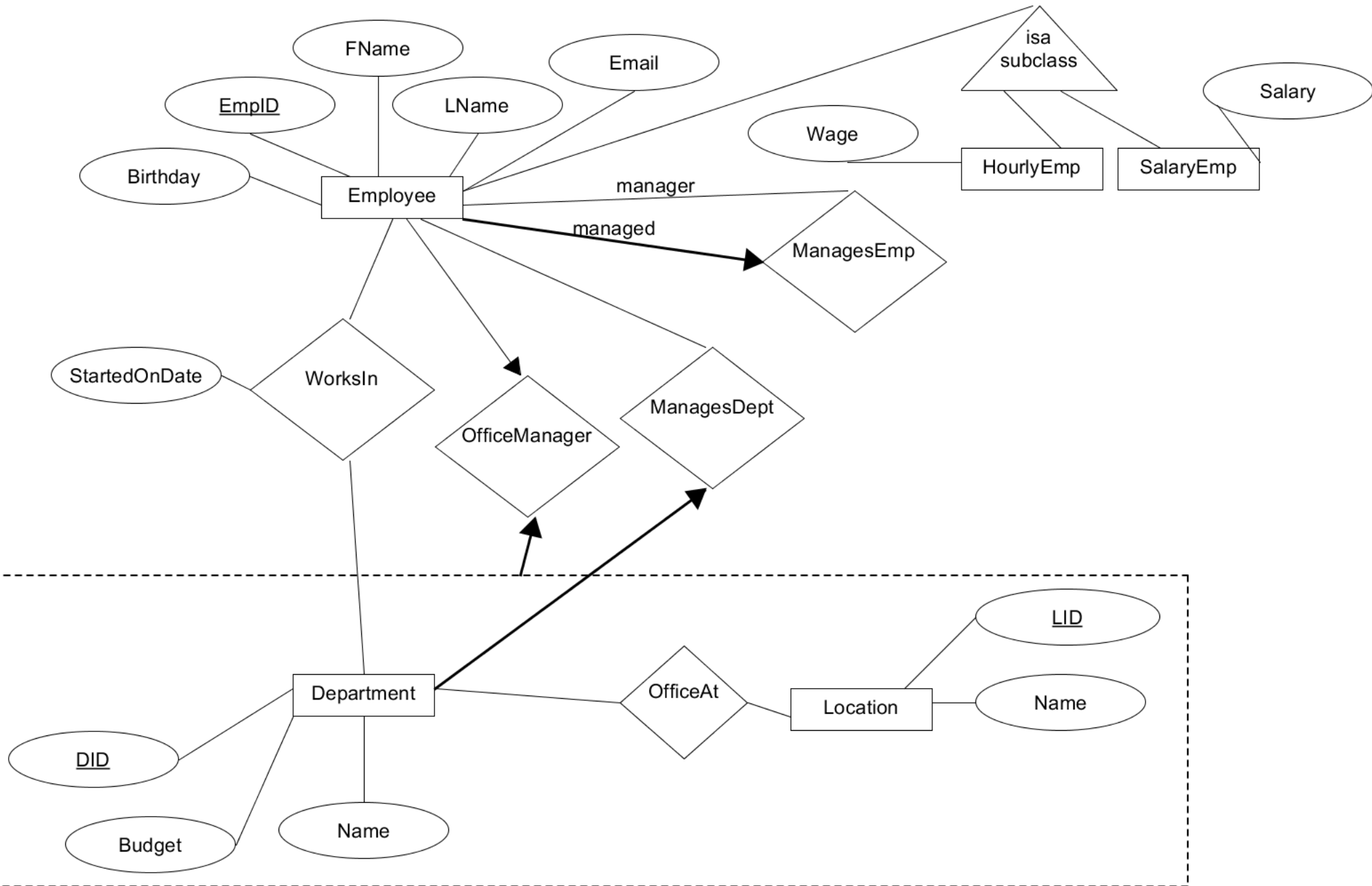


CS 445

The Relational Model

Chapter 3

September 7, 2017



Relational Model

- Read Chapter 3
- The database is a collection of *relations*
 - each relation is a table
- Data Definition Language
 - subset of SQL
- Integrity constraints
- Views <https://mariadb.com/kb/en/the-mariadb-library/create-table>

today we will just do basic table creation

MariaDB 10.0.31

Relation

- Relation schema
 - example:
- Relation instance
 - set of {tuples|records|rows}
- Column
 - Domain
- Relational database
 - Relational database schema
 - Relational database instance

Keys

- Candidate Key
- Super Key
- Primary Key

Translation

- Translate E-R diagram to Relational Model
 - E-R Diagram to SQL!
 - must represent:

Create Table Syntax

```
CREATE [OR REPLACE] [TEMPORARY] TABLE
[IF NOT EXISTS] tbl_name
(
  column_definitions...
  [constraints...]
)
[table_options] ;
```

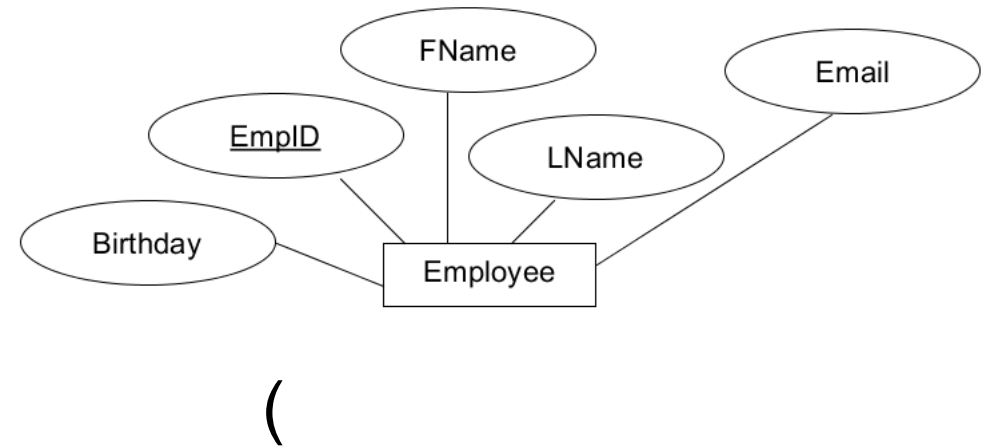
column_definition: col_name datatype decorations

<https://mariadb.com/kb/en/the-mariadb-library/create-table>

MySQL Types

- <https://mariadb.com/kb/en/mariadb/data-types/>
- Char/Varchar vs Binary/Varbinary
- Int
- Real Numbers
- Date
- Blob/Text
- Set
- Enum

Create an Entity Set



- SQL
- CREATE TABLE

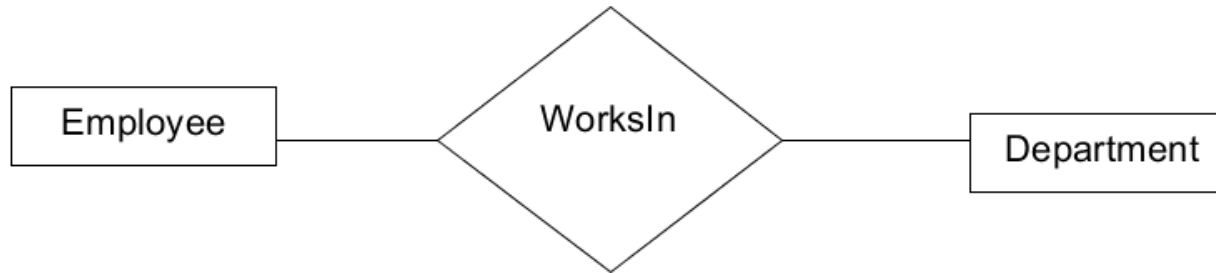
(

Insert

- INSERT INTO
(

VALUES
(

Data: Foreign Key References



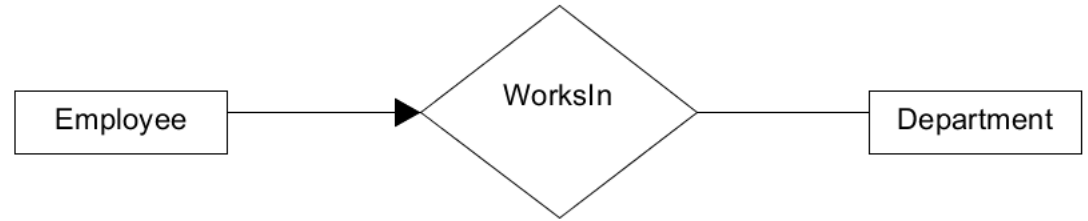
Constraints

- PRIMARY KEY
- UNIQUE
- INDEX/KEY
- FULLTEXT
- FOREIGN KEY

Constraint expressions

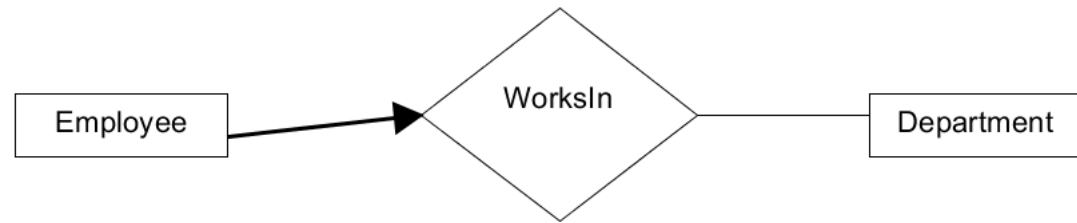
- <https://mariadb.com/kb/en/the-mariadb-library/create-table/#constraint-expressions>
- Only in version 10.2.1 or later of MariaDB
(not in our installation of MariaDB)

Data: Adding constraints



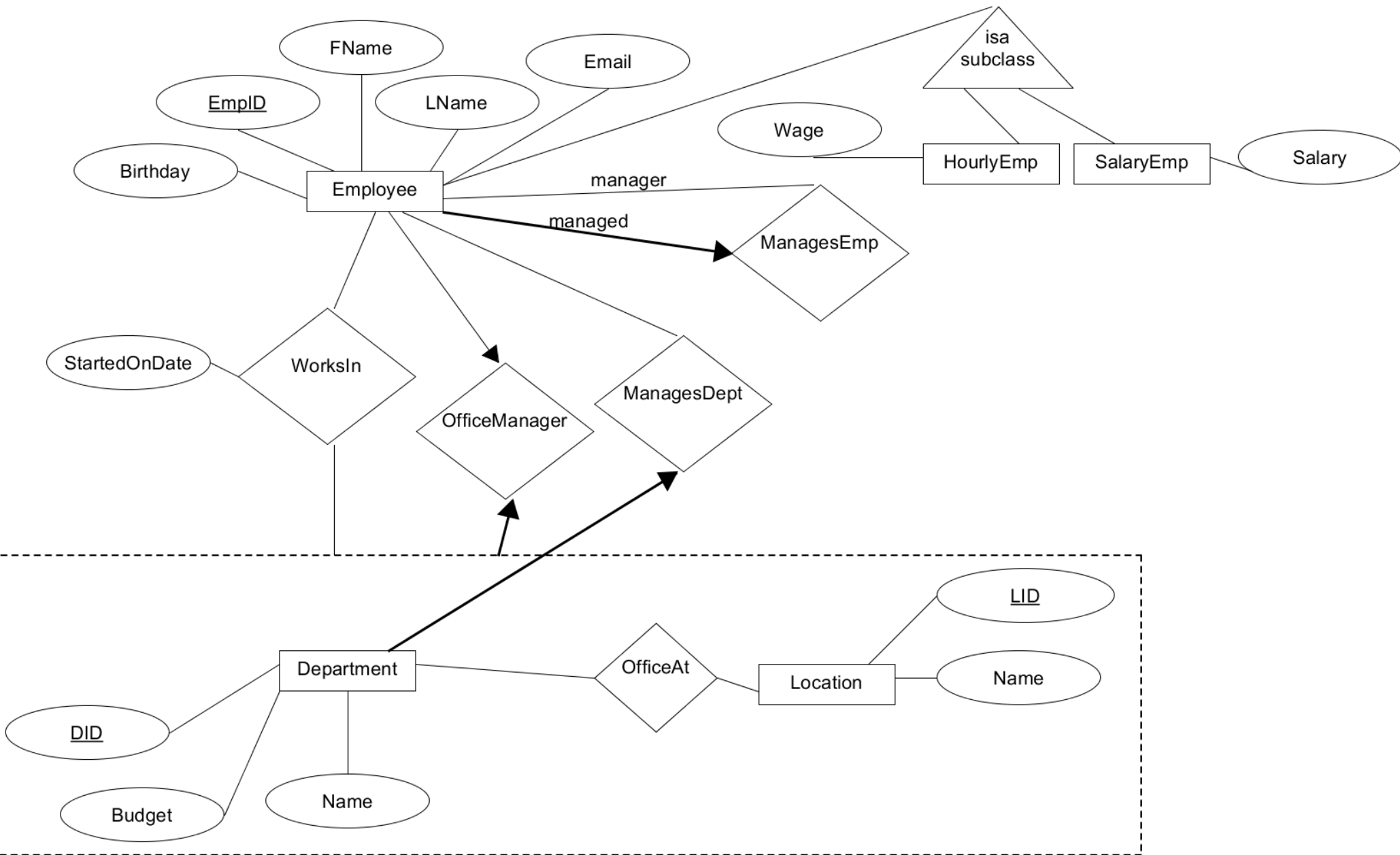
Describe this in English.

Data: Adding constraints



Describe this in English.

Practice



Practice

- Write Create Table statements for everything necessary for
 - OfficeAt
 - OfficeManager
 - ManagesEmp