WEEK 2

MAPPING MANY TO MANY RELATIONSHIPS FROM AN ER DIAGRAM INTO A RELATIONAL DATABASE.

STUDENT OBJECTIVES

- Upon completion of this video, you should be able to:
  - Look at an ER Diagram and represent each of the Many to Many relationship in the relational model.
  - Given a ternary (three-entities.) relationship in an ER diagram, map it correctly to the tables and attributes in the relational model

REPRESENTING MANY TO MANY RELATIONSHIPS USING ONLY TABLES

Suppose now we add have the tables:

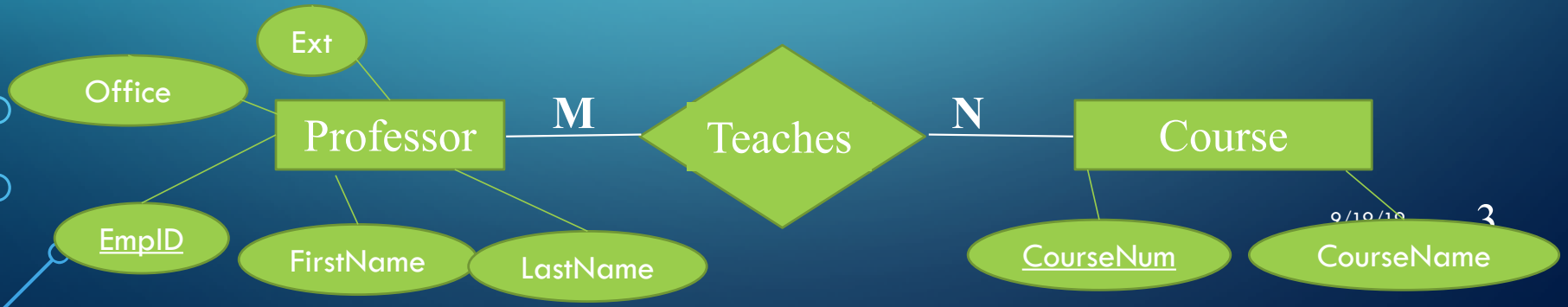
COURSE

CourseNumber	CourseName
CS3319	Intro to Databases
CS2210	Data Structures and Algorithms
CS1027	CS Fundamentals II
MA2222	Discrete Structures

PROFESSOR

FirstName	LastName	EmpID	Office	Ext
Laura	Reid	11	ST238	86905
Doug	Vancise	22	MC 421	83355
Michael	Atkinson	15	SSC 44	83456
Stuart	Rankin	18	MC 101	87678
Jamie	Andrews	34	MC 343	86789
Irving	Robinson	56	MC 102	86733

And we have the following relationship:



How do we show that Laura and Doug teach CS3319 AND Doug, Laura and Jamie teach CS2210 AND Doug teaches CS1027 AND Irving and Stuart teach MA2222?

but it is not in first normal form

COURSE

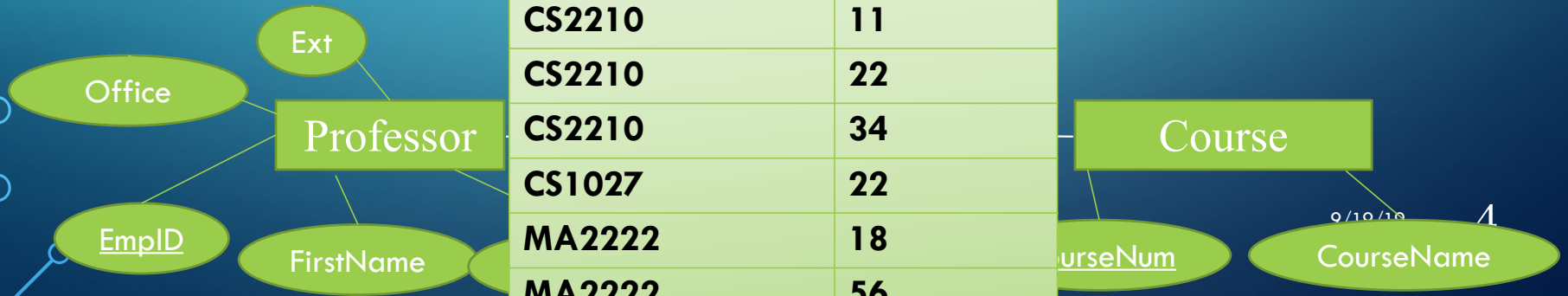
CourseNumber	Cou
CS3319	Intro
CS2210	Dat
CS1027	CS I
MA2222	Disc

PROFESSOR

FirstName	LastName	EmpID	Office	Ext	Teaches
Laura	Reid	11	ST238	86905	CS3[illegible] S2210
Doug	Vancise	22	MC 421	83355	CS3[illegible] 1027
Michael	Atkinson	15	SSC 44	83456	NULL
Stuart	Rankin	18	MC 101	87678	MA2222
Jamie	Andrews	34	MC 343	86789	CS2210
Irving	Robinson	56	MC 102	86733	MA2222

TEACHES

CS3319	**11**
CS3319	**22**
CS2210	**11**
CS2210	**22**
CS2210	**34**
CS1027	**22**
MA2222	**18**
MA2222	**56**



Giving a new table:

TEACHES

* CourseNumber * EmpID

This solution maintains the uniqueness of each row with a combination of two foreign keys. And the combination is the key of this new table.

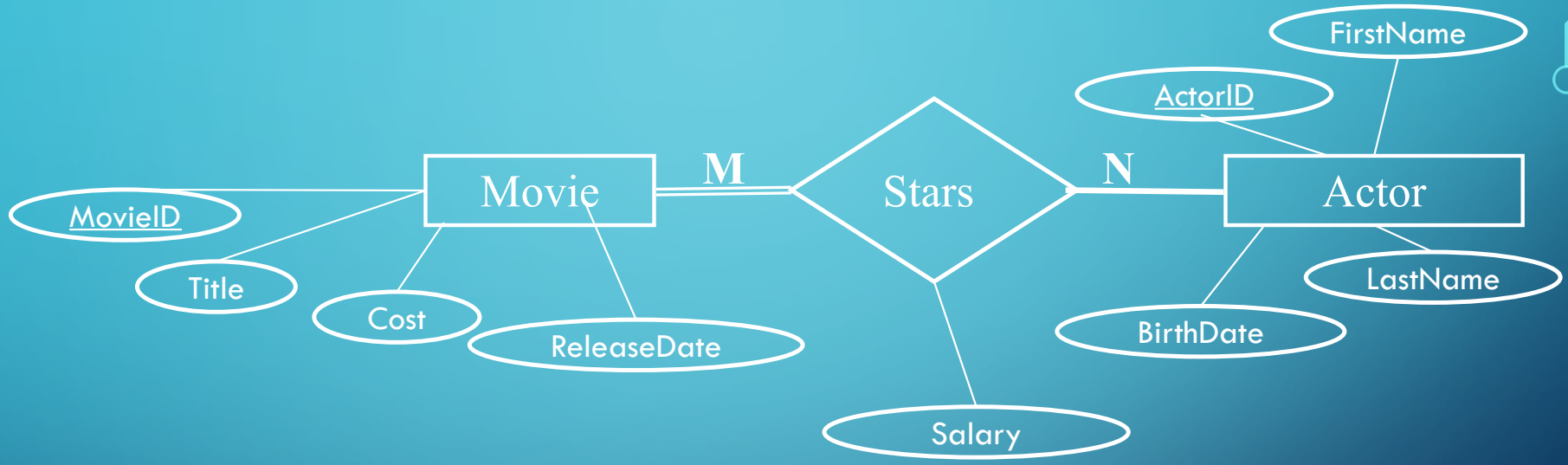
In Many To Many relationships, you make a NEW table and the key for the new table is the combination of the keys from the entities participation in the many to many relationship. Also include any attributes on the relationship in the new table.

QUESTION: What is the primary key of table NEW table called TEACHES

EmplD AND CourseNum ?

What are the foreign key(s) of the table TEACHES? EmplD AND CourseNum

ANOTHER EXAMPLE OF HOW TO MAP MANY TO MANY RELATIONSHIPS TO A RELATIONAL DATABASE:



Movie

MovieID	Title	Cost	ReleaseDate

Actor

ActorID	FirstName	LastName	BirthDate

Starring

*MovieID	*ActorID	Salary

TERNERY RELATIONSHIPS

- Take all the keys involved and put them in a new table and they make up the new key and also include any extra attributes.

these three form a new key.

Table rr

aid *	bid *	cid *	rattr