A decorative graphic on the left side of the slide consisting of white lines and circles on a blue gradient background, resembling a circuit board or a stylized tree structure.

ACIT 1630

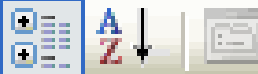
RELATIONAL DATABASE & SQL

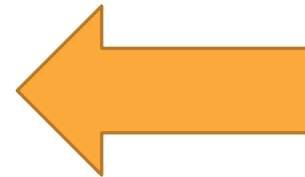
ED SWEENEY

IS IDENTITY

Person:

Column Name	Data Type	Allow Nulls	Is Identity	Key
person_id	int	No	Yes	Primary
first_name	nvarchar(50)	No		
last_name	nvarchar(50)	No		

Column Properties	
	
Has Non-SQL Server Subscriber	No
▼ Identity Specification	Yes
(Is Identity)	Yes
Identity Increment	1
Identity Seed	1
Indexable	Yes



LESSON OBJECTIVES

- Primary and Foreign Keys
- More Relationships (Many-to-Many)
- Constraints

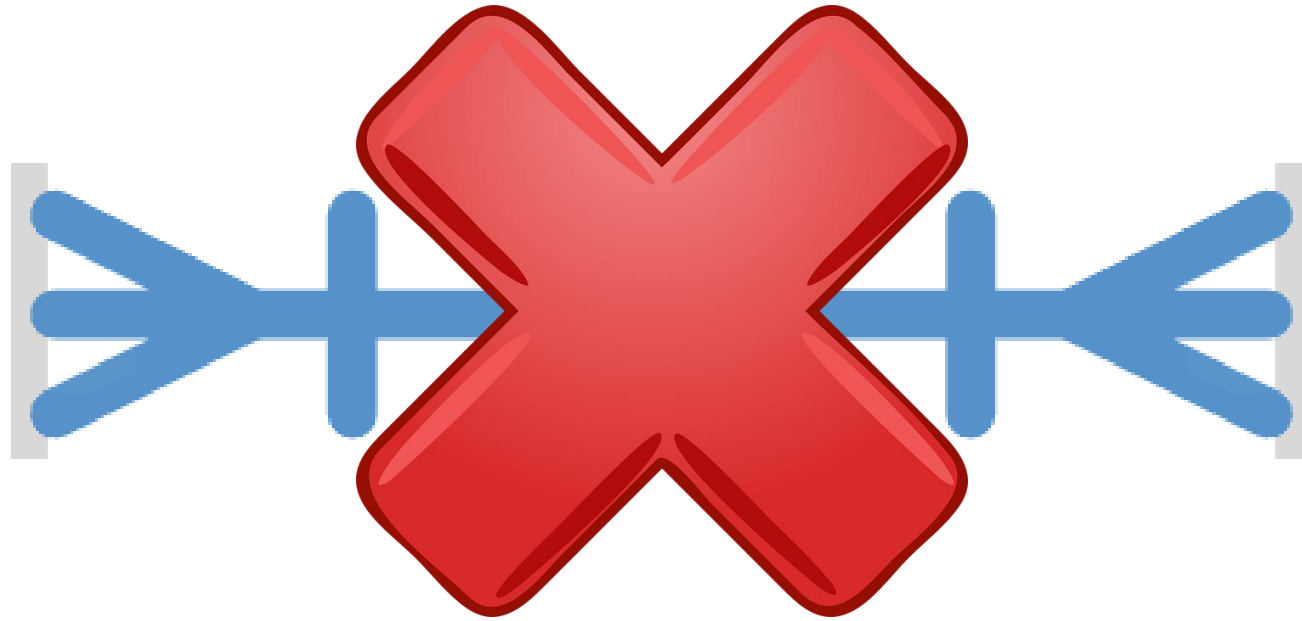
DERIVED VALUES

- $\text{Price} + \text{Tax} = \text{SubTotal}$
- $\text{Sum}(\text{Item SubTotals}) = \text{Total}$
- $\text{Today} - \text{BirthDate} = \text{Age}$

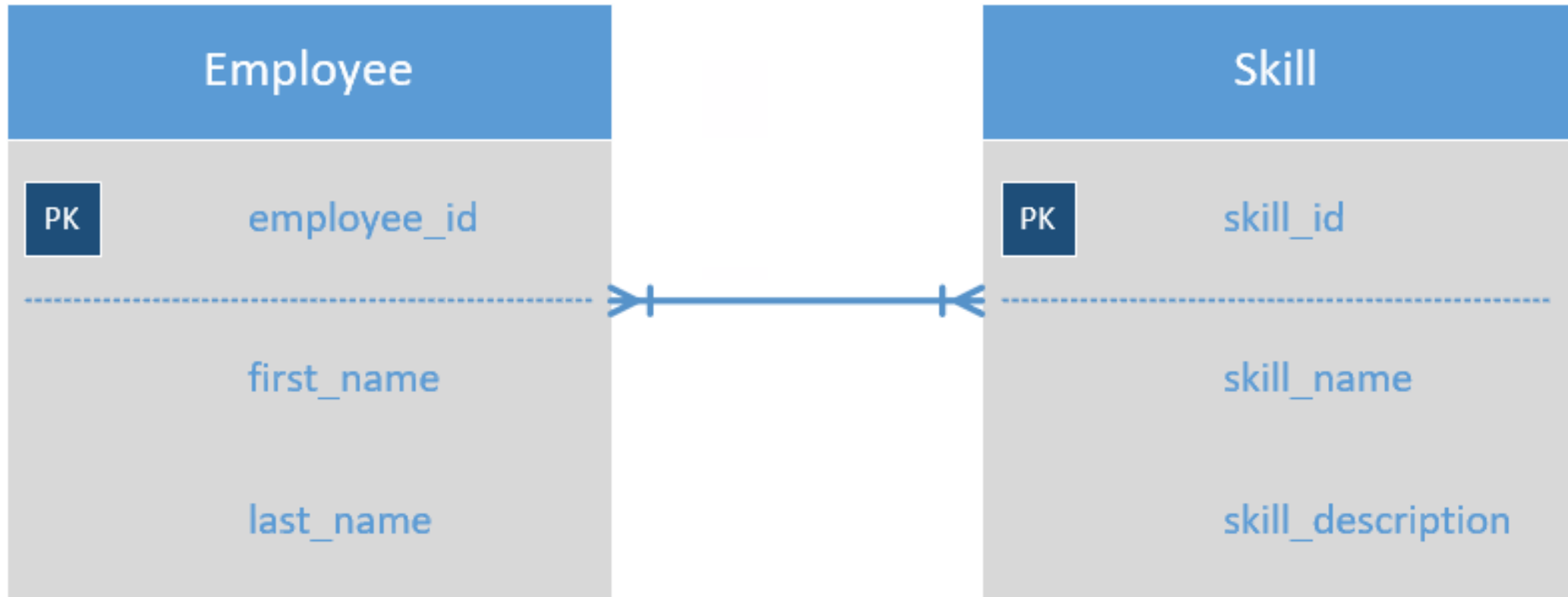
DERIVED VALUES

- Store or Calculate?

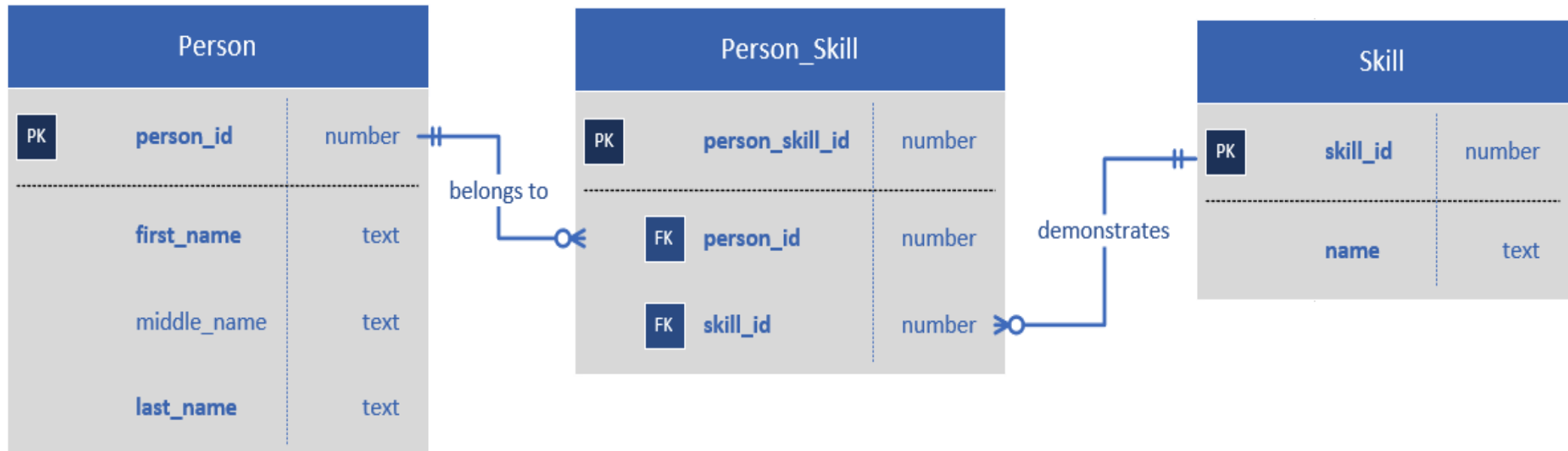
MANY-TO-MANY RELATIONSHIPS



MANY-TO-MANY RELATIONSHIPS



MANY-TO-MANY RELATIONSHIPS

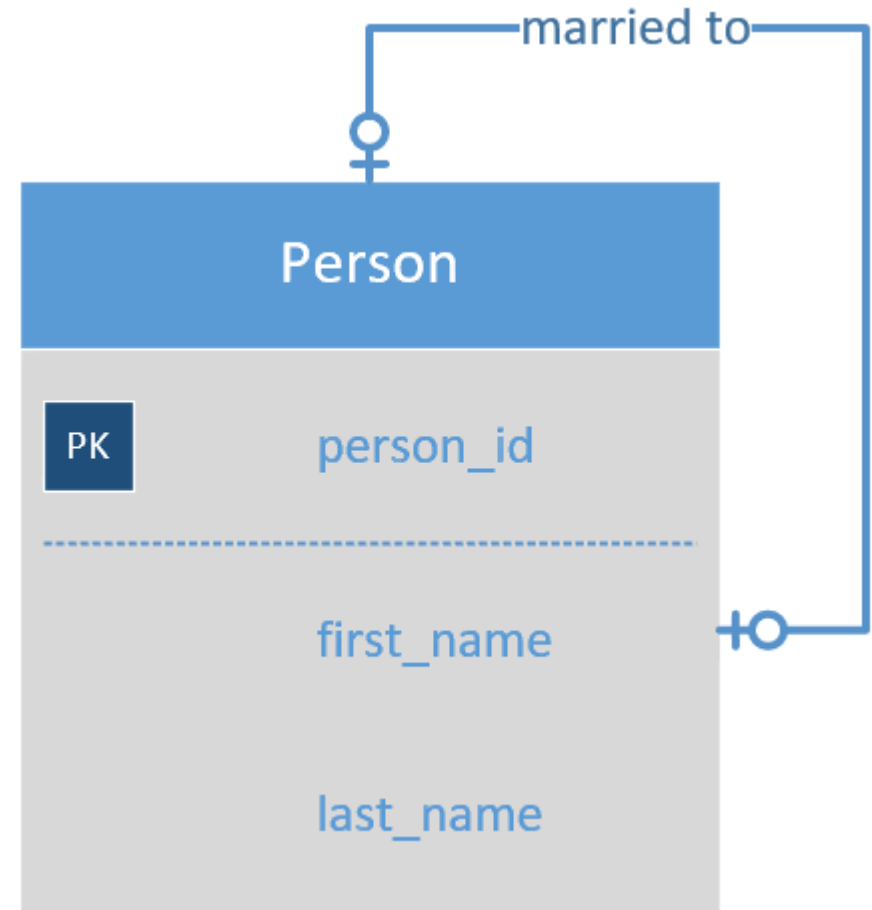


RELATIONAL MODELS AND IMPLEMENTATIONS

- Some relationships can't be implemented
(at least not directly)

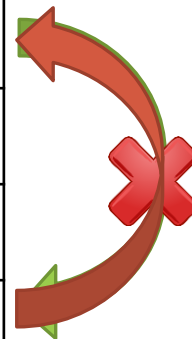
THE MARRIAGE PROBLEM

- People are married to people.
- Self-referencial relationship
(Entity relates to same Entity)
- Unary Relationship



SCENARIO 1

person_id	first_name	married_id
1	Firuzeh	3
2	Wen	
3	Kianoush	1
4	Barbara	
5	Yang	2



SCENARIO 2

person_id	first_name
1	Firuzeh
2	Wen
3	Kianoush
4	Barbara
5	Yang

person_id	married_id
1	3
2	5
5	2 ?

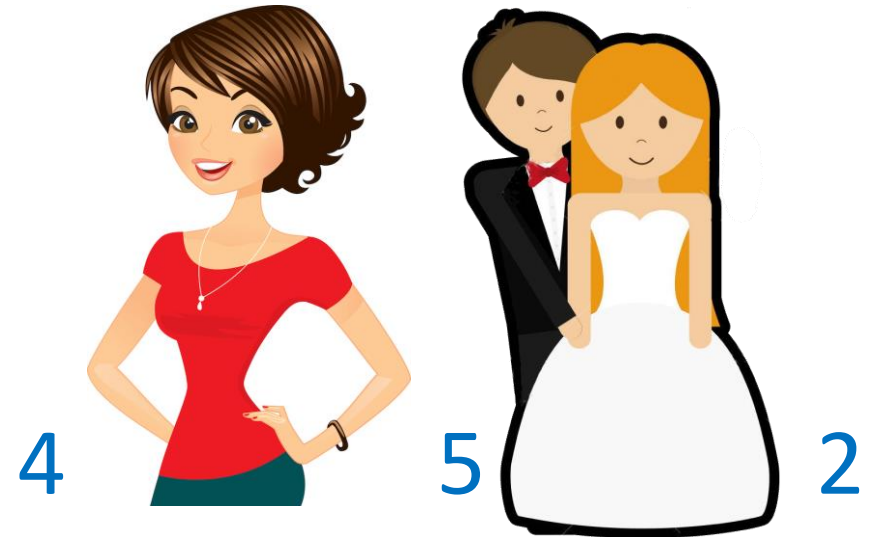


SCENARIO 3

person_id	first_name
1	Firuzeh
2	Wen
3	Kianoush
4	Barbara
5	Yang

marriage_id	date
1	Mar 3, 1970
2	Jul 19, 1995

marriage_id	person_id
1	3
1	1
2	2
✗	



THE MARRIAGE PROBLEM

- Each scenario has potential issues in implementation.



- I guess you could say:
"You can't rely on a database to save your marriage!"

CLASS EXERCISE

- Soccer Teams



PROJECT #1

- Design a database using an ERD.
[Art Gallery]

LAB

- D2L: learn.bcit.ca
- M:M in Draw.io
- Explore MySQL Data Constraints
- Many-to-Many



- Submit required screenshots
- Complete by Thursday 11:30PM

Submit

<http://sabreuse.com/wp-content/uploads/2013/06/red-submit-button-hi.png>

<https://www.handybackup.net/images/icons/mssql-backup.png>

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<https://previews.123rf.com/images/findingmydigitalfeet/findingmydigitalfeet1501/findingmydigitalfeet150100009/35367987-keys-cartoon-isolated-vector-style-gold-and-silver.jpg>