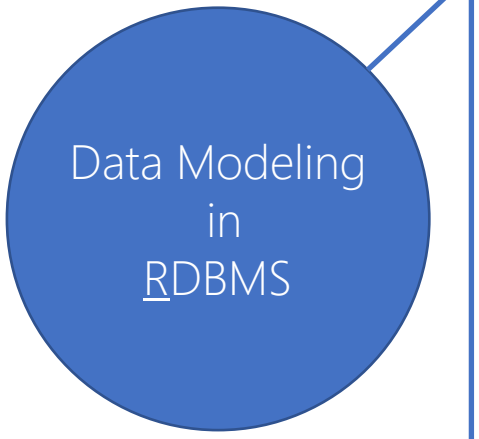
Conceptual Level | Extended Entity-Relationship Model

Today



Real World Entity

Conceptual Level | Entity-Relationship Model (E/R) Level

Conceptual Level | Logical Level | Relational Model

Conceptual Level | Logical Level | Physical Level | SQL

Conceptual Level | Logical Level | Computable Entity

Last Week | Welcome | Entity | Attribute | Relationship | Extended ER (EER)

Last Class × Q4Me

Book vs. Slides

W03: CH04 (2nd Ed.), CH02 (1st Ed.)

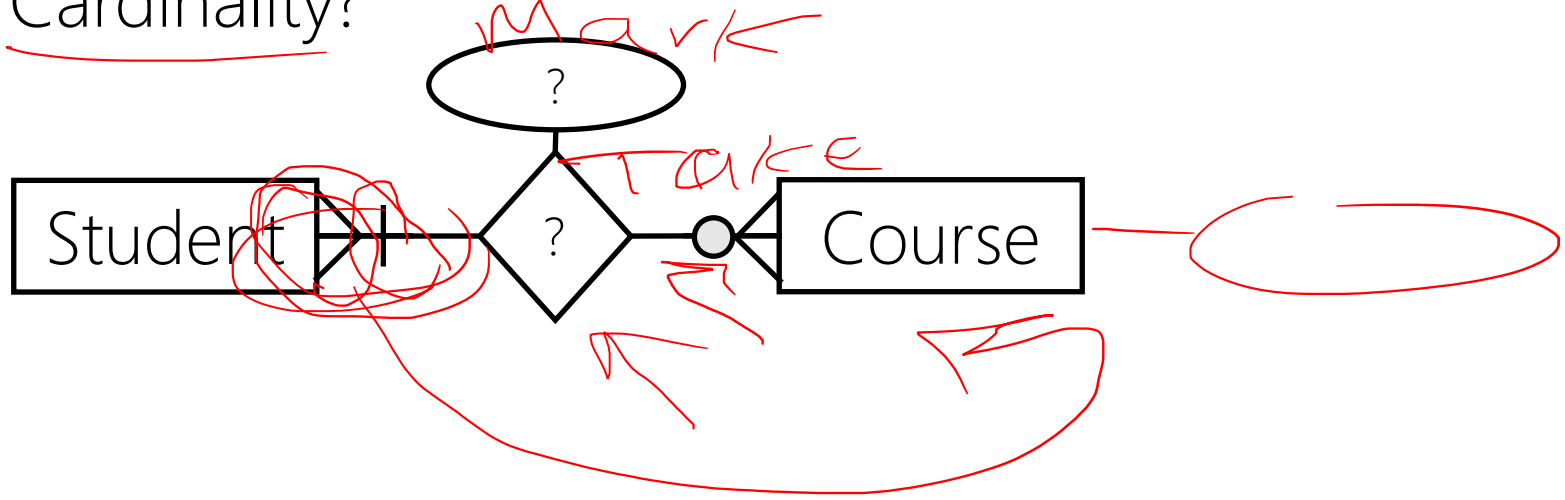
Last Class ×Q4U

What is ER Diagram for?

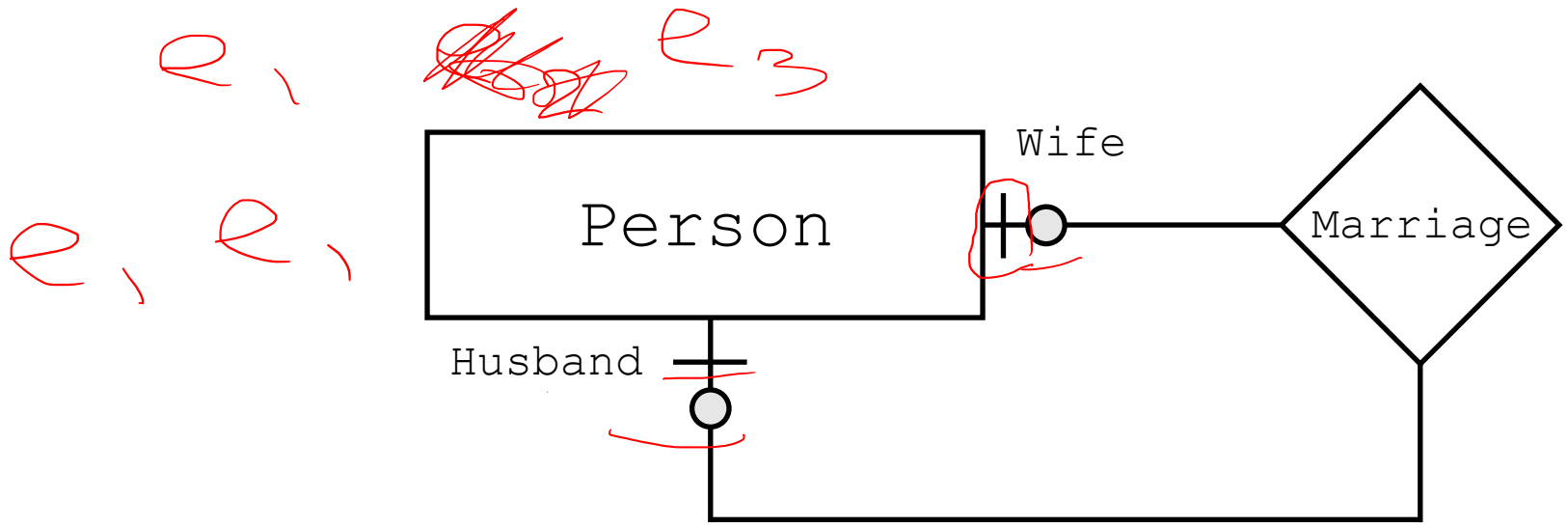
Types of attributes for entity set?

Ordinality?

Cardinality?

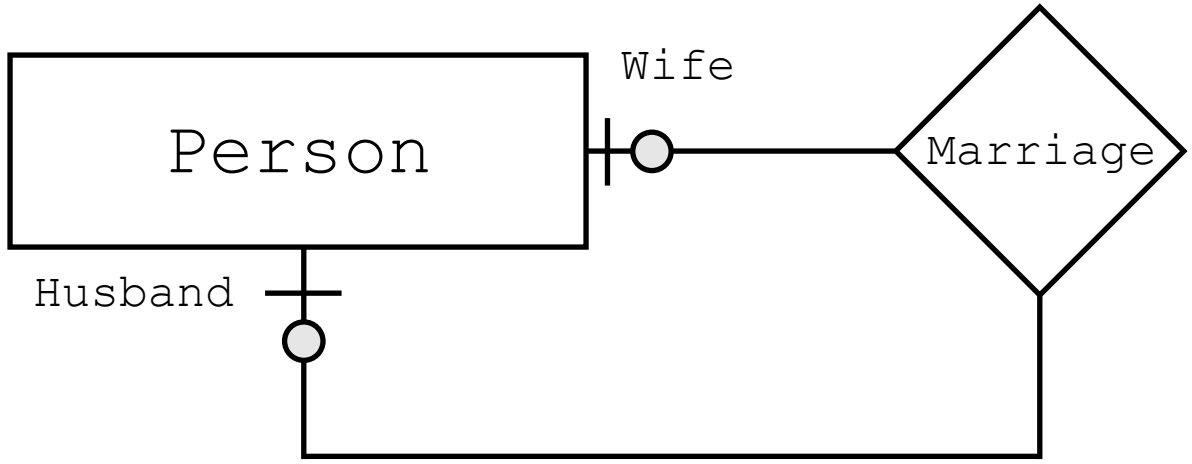


E/R × Relationship Set × Monogamy

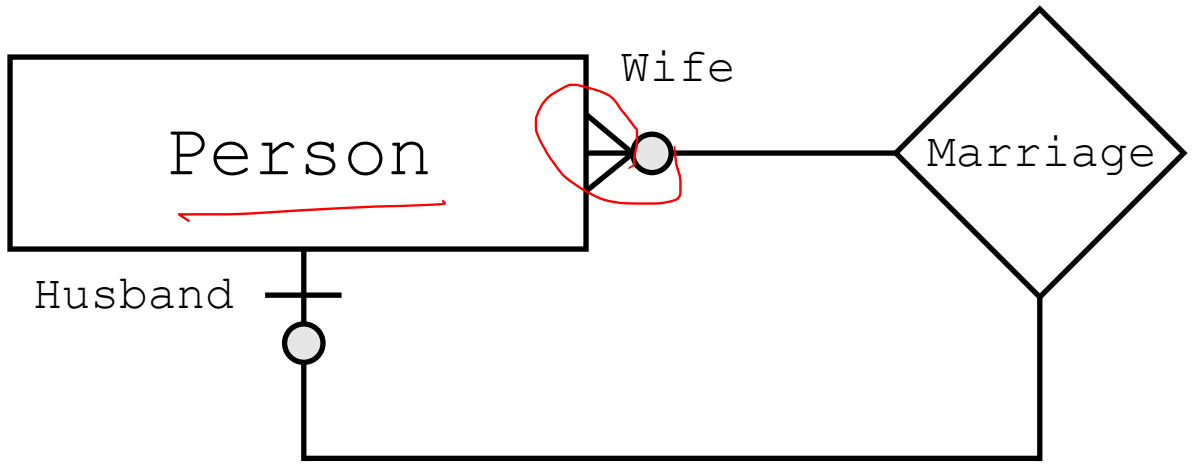


India's first Sologomy: Gujarati woman Kshama Bindu to marry herself

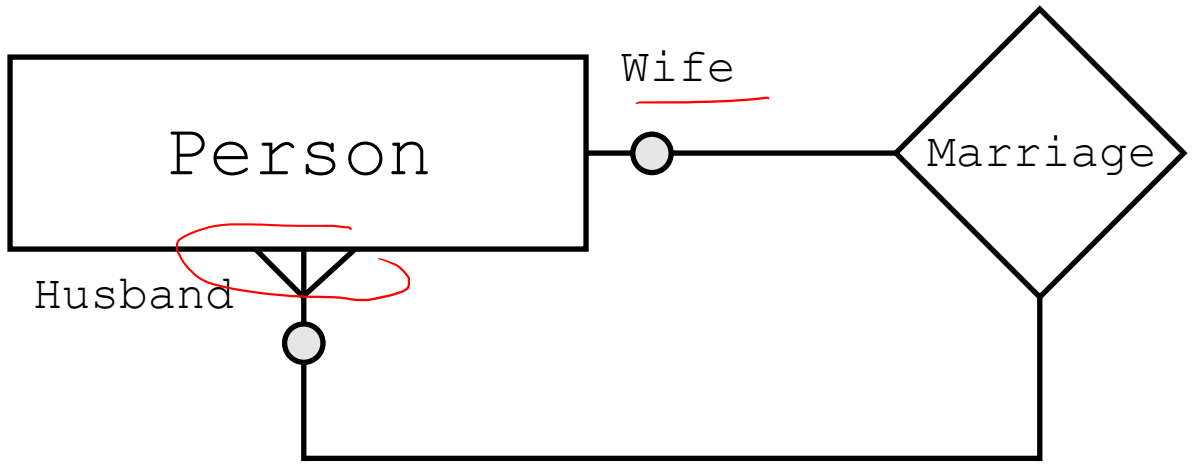
E/R × Relationship Set × Sologamy



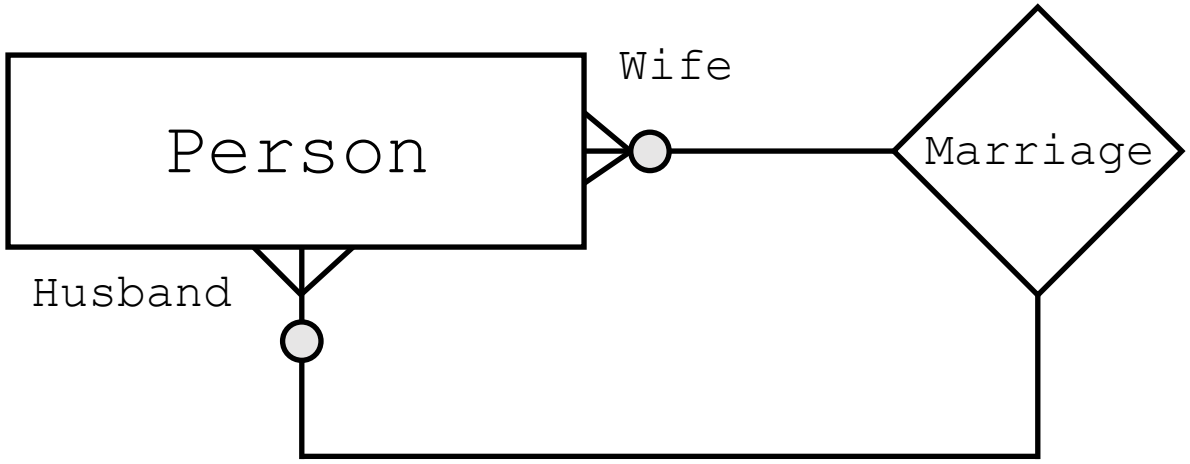
E/R × Relationship Set × Polygyny



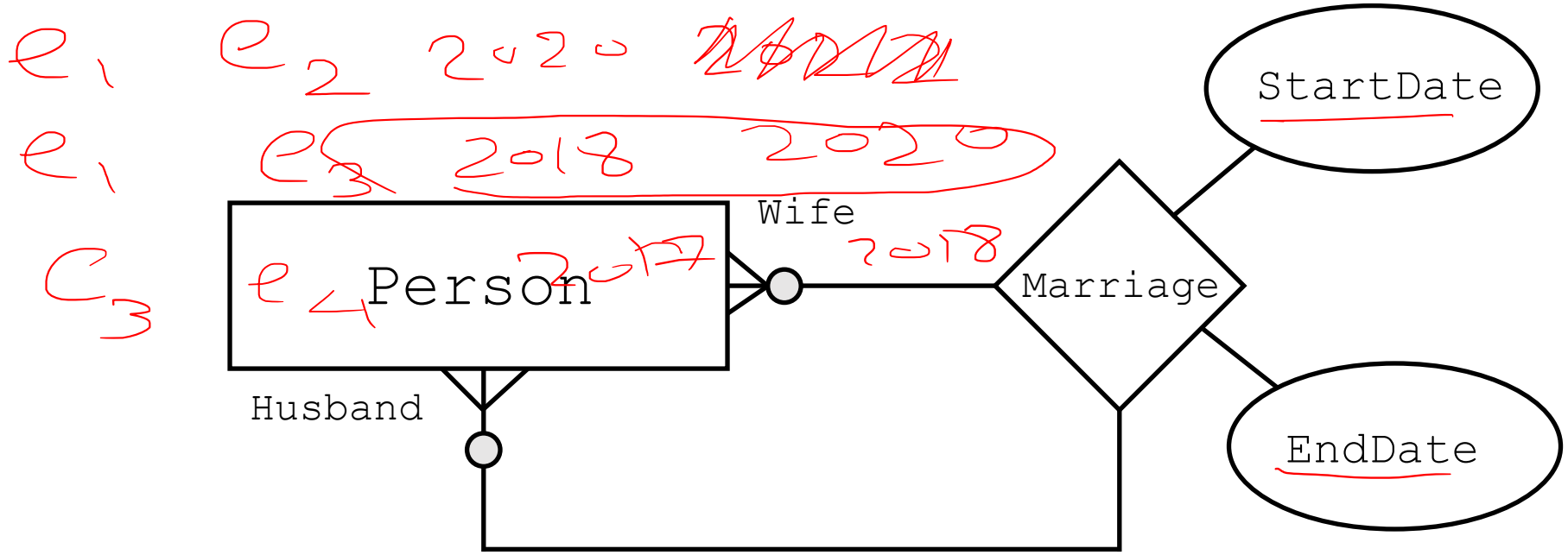
E/R × Relationship Set × Polyandry

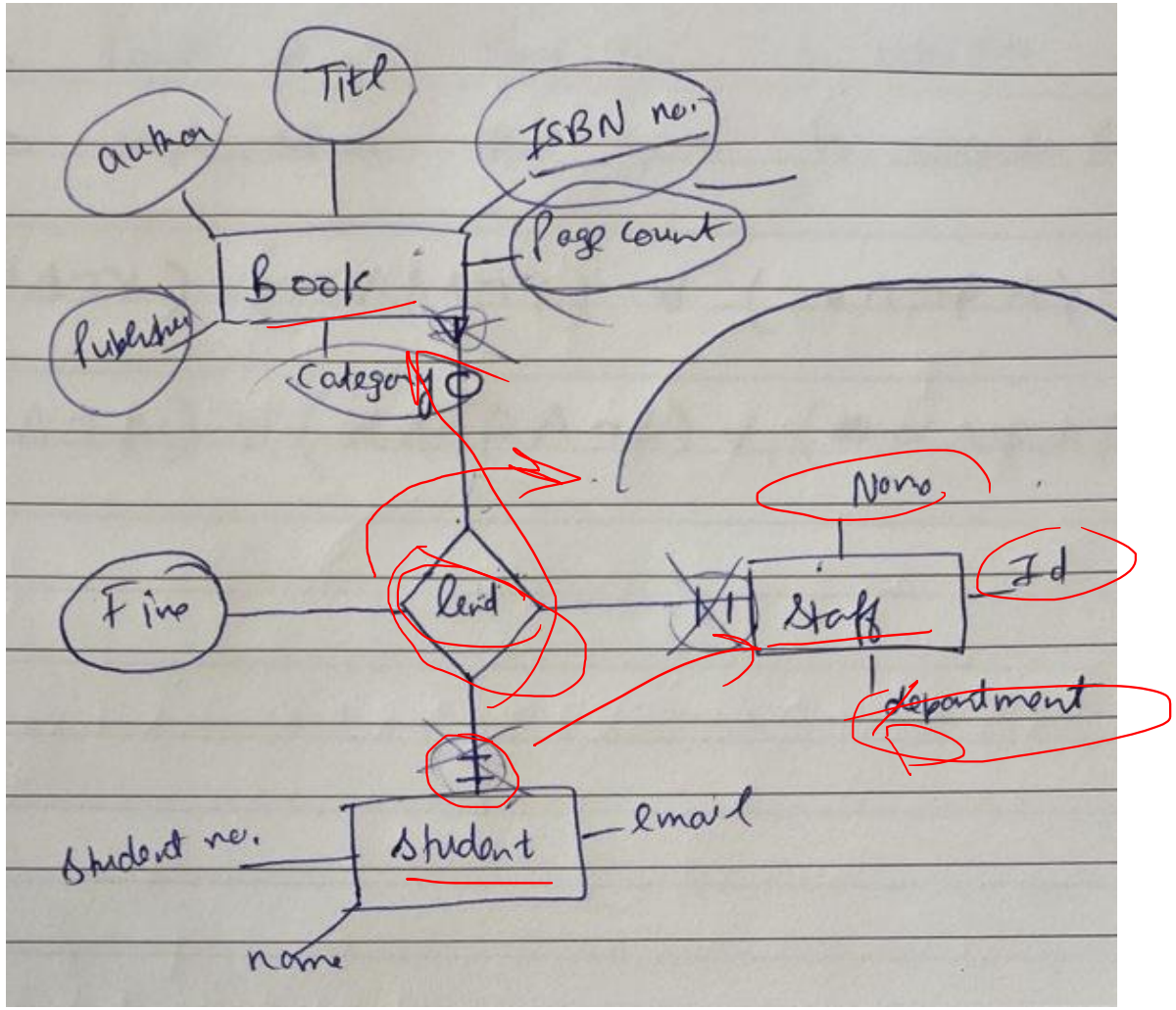


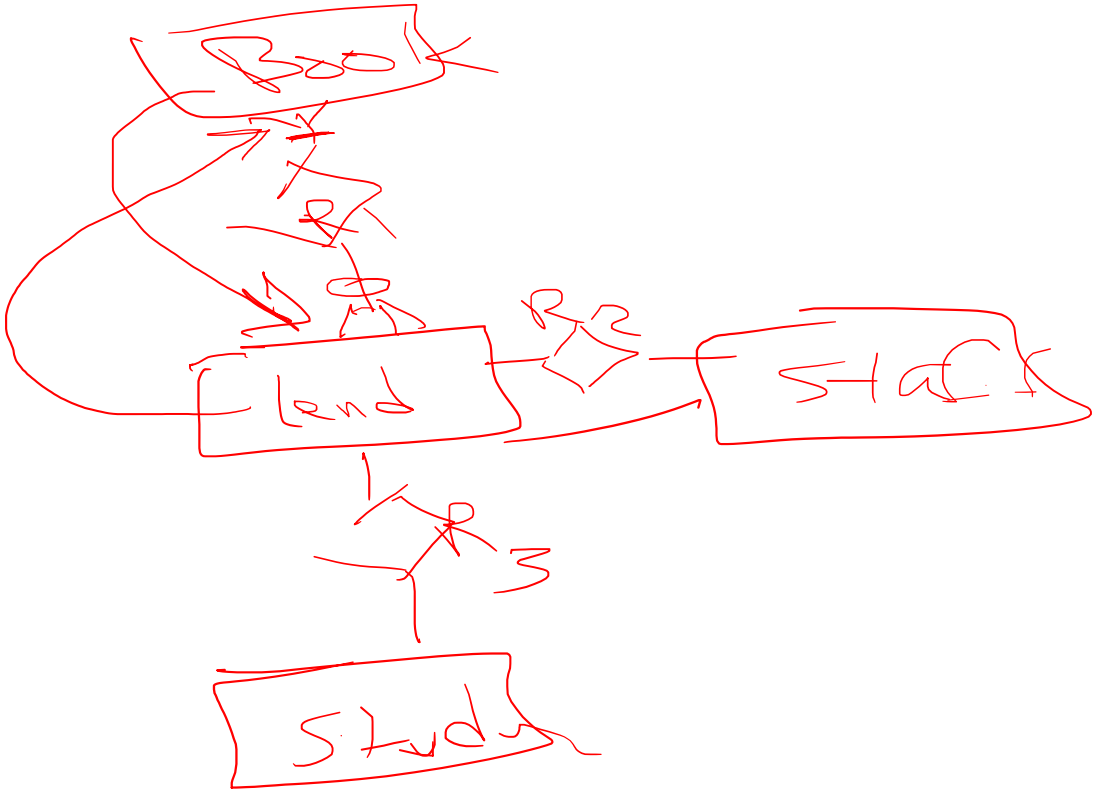
E/R × Relationship Set × Polygamy



E/R × Relationship Set × Marriage



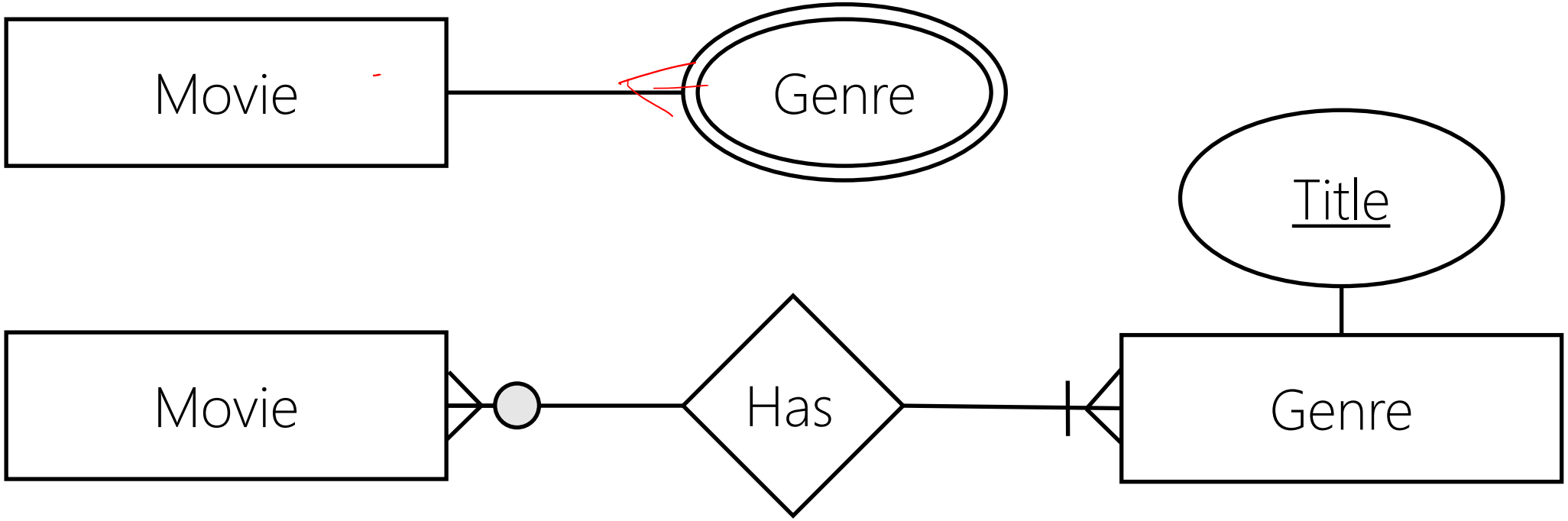

Title
author
ISBN no.
Page count
Book
Publisher
Category
Name
Id
Fine
lend
Staff
department
Student no.
Student
email
name


Book
R
R1
R2
lend
Staff
1
3
Study

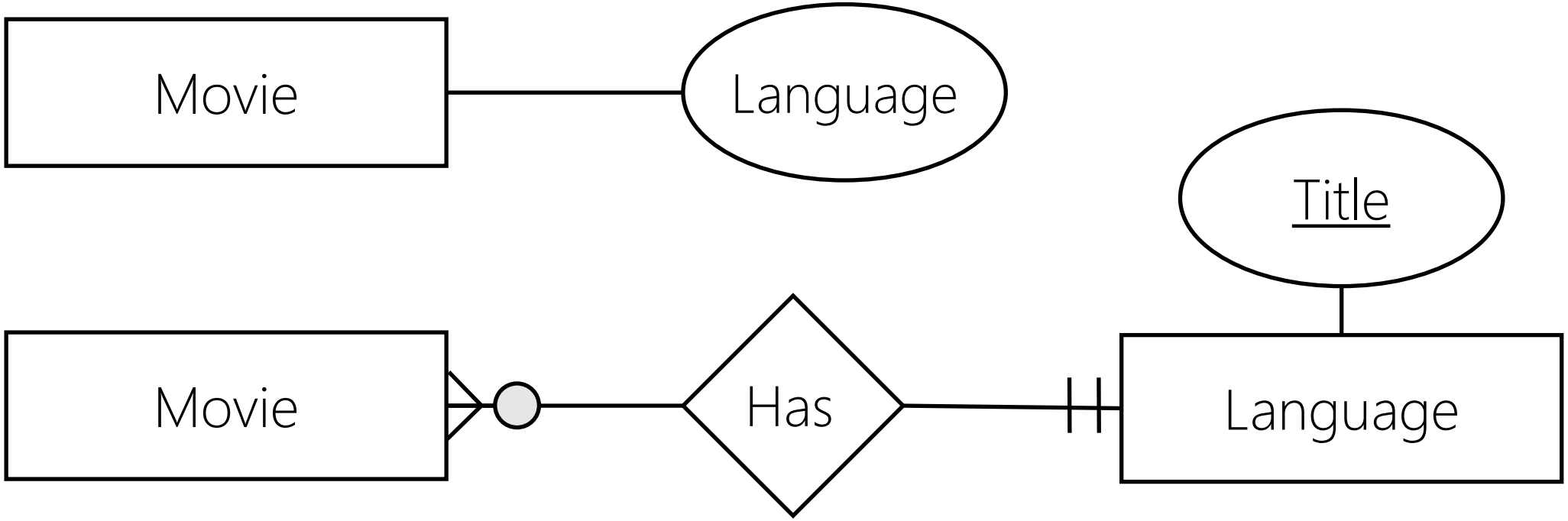
E/R × Design Principles

Faithfulness	e.g., entity set | attribute acc. system spec.
Redundancy	e.g., circular relationship sets
Simplicity	e.g., single attribute key

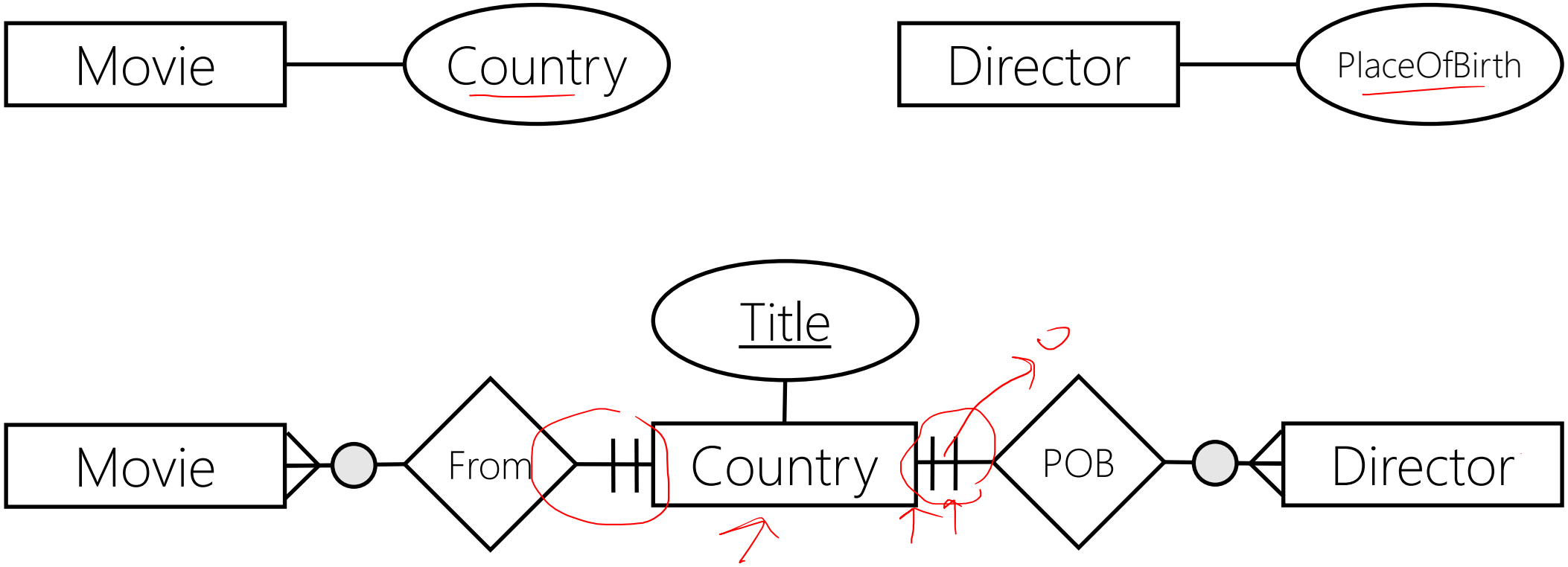
E/R × Design Questions I



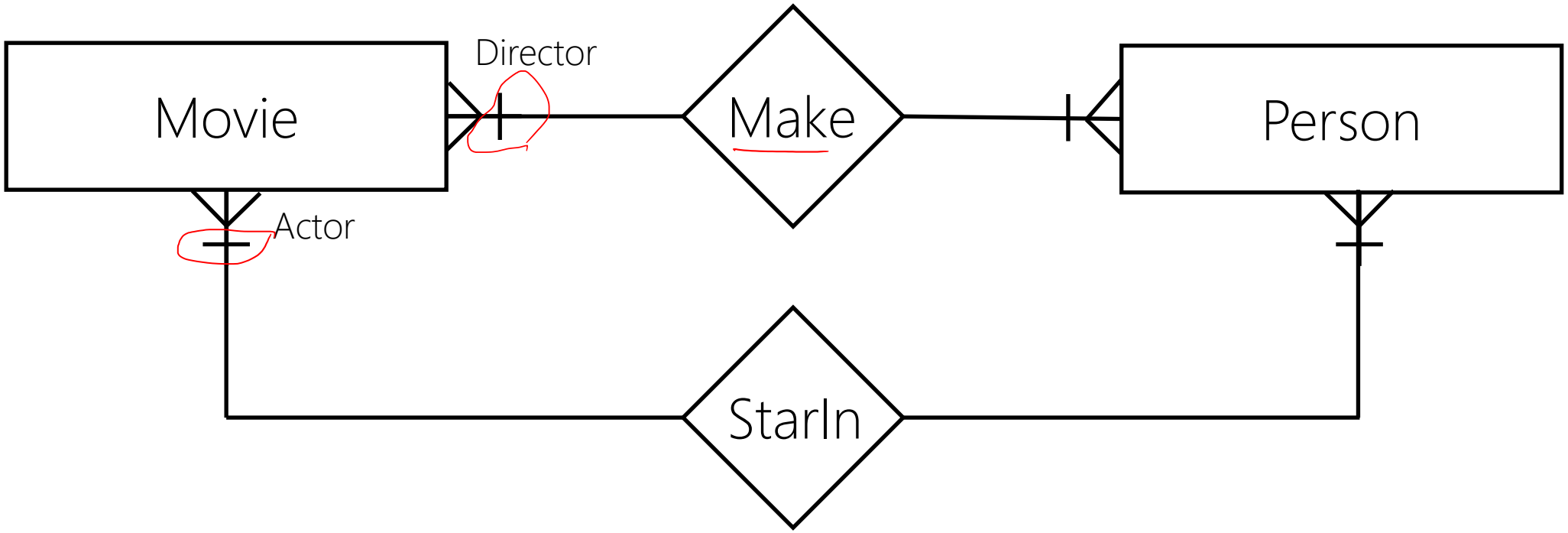
E/R × Design Questions I



E/R × Design Questions I

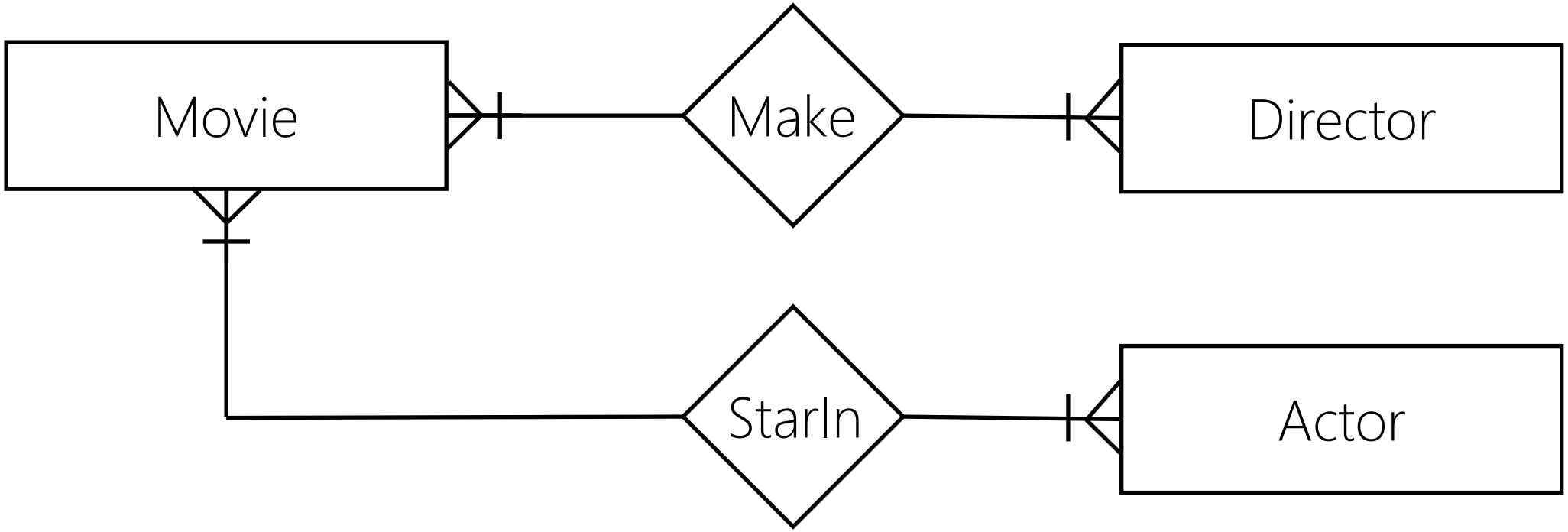


E/R × Design Questions II



Same problem as in Distributor and Producer Companies!

E/R × Design Questions II

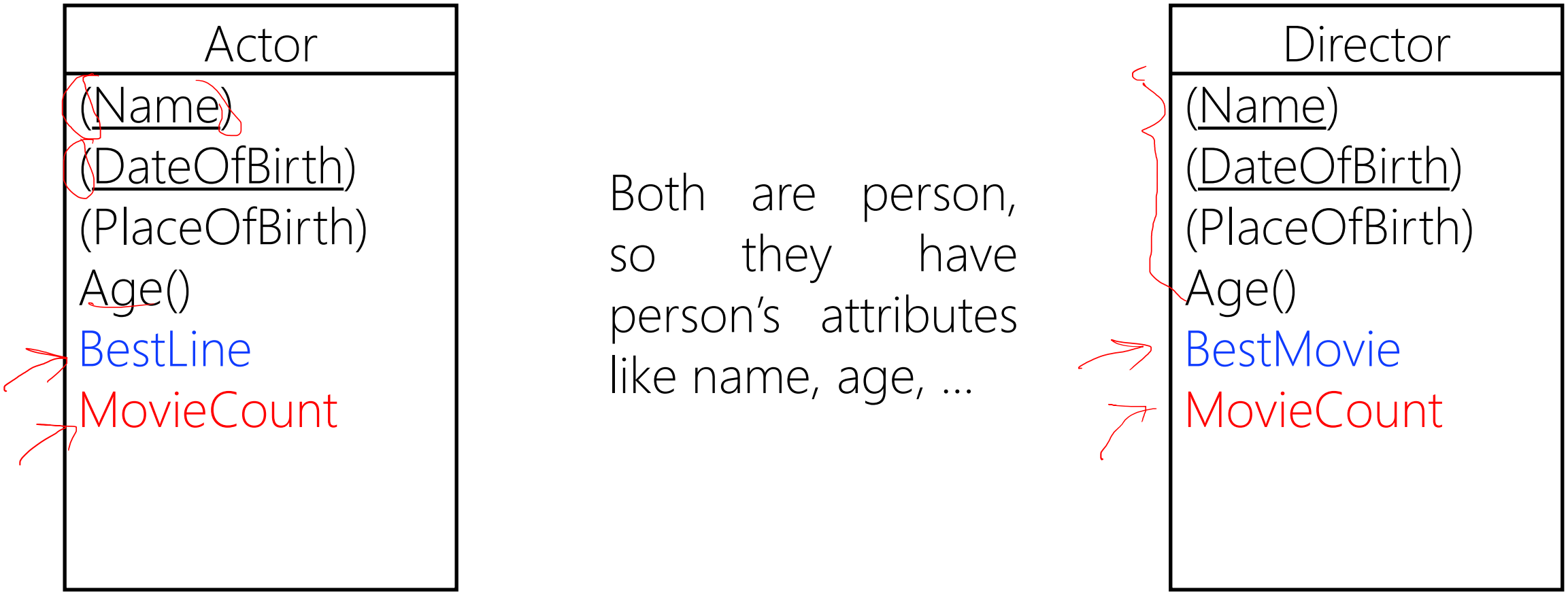


Both Actor and Director of a Movie?

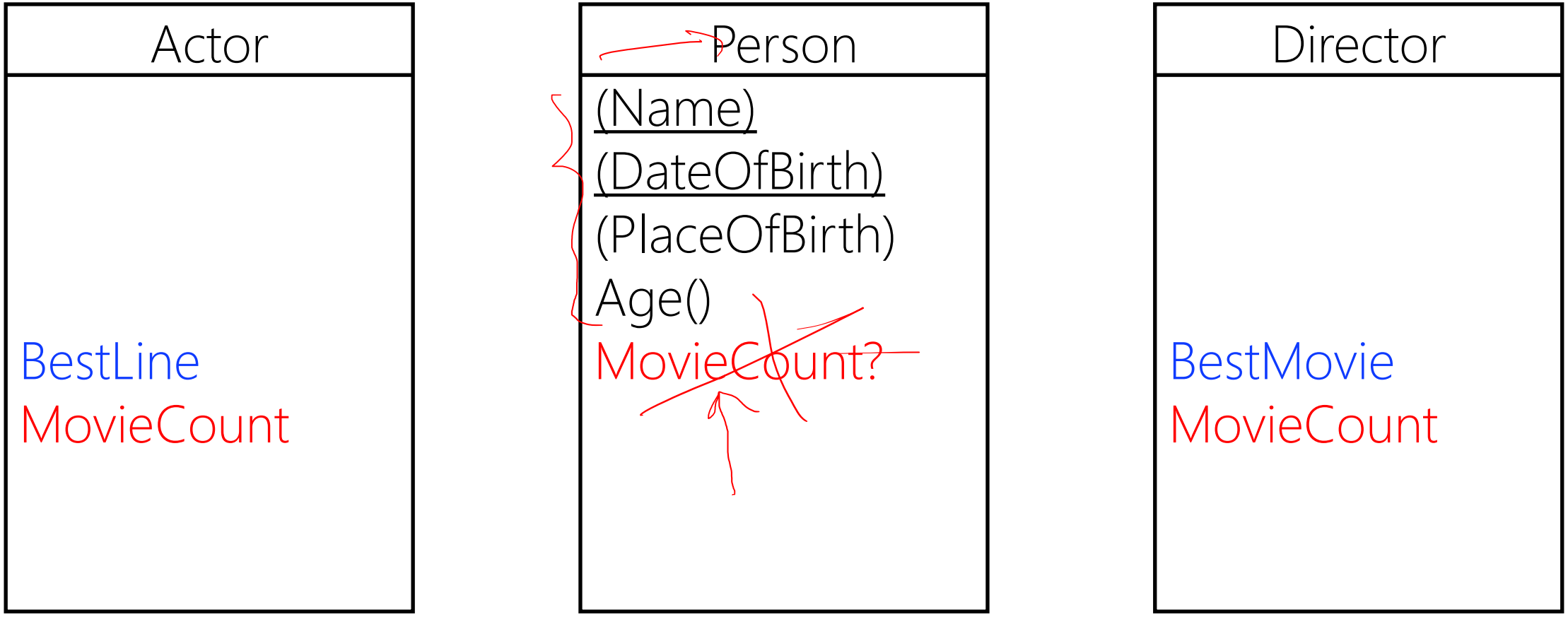
E/R × Extension

IS-A

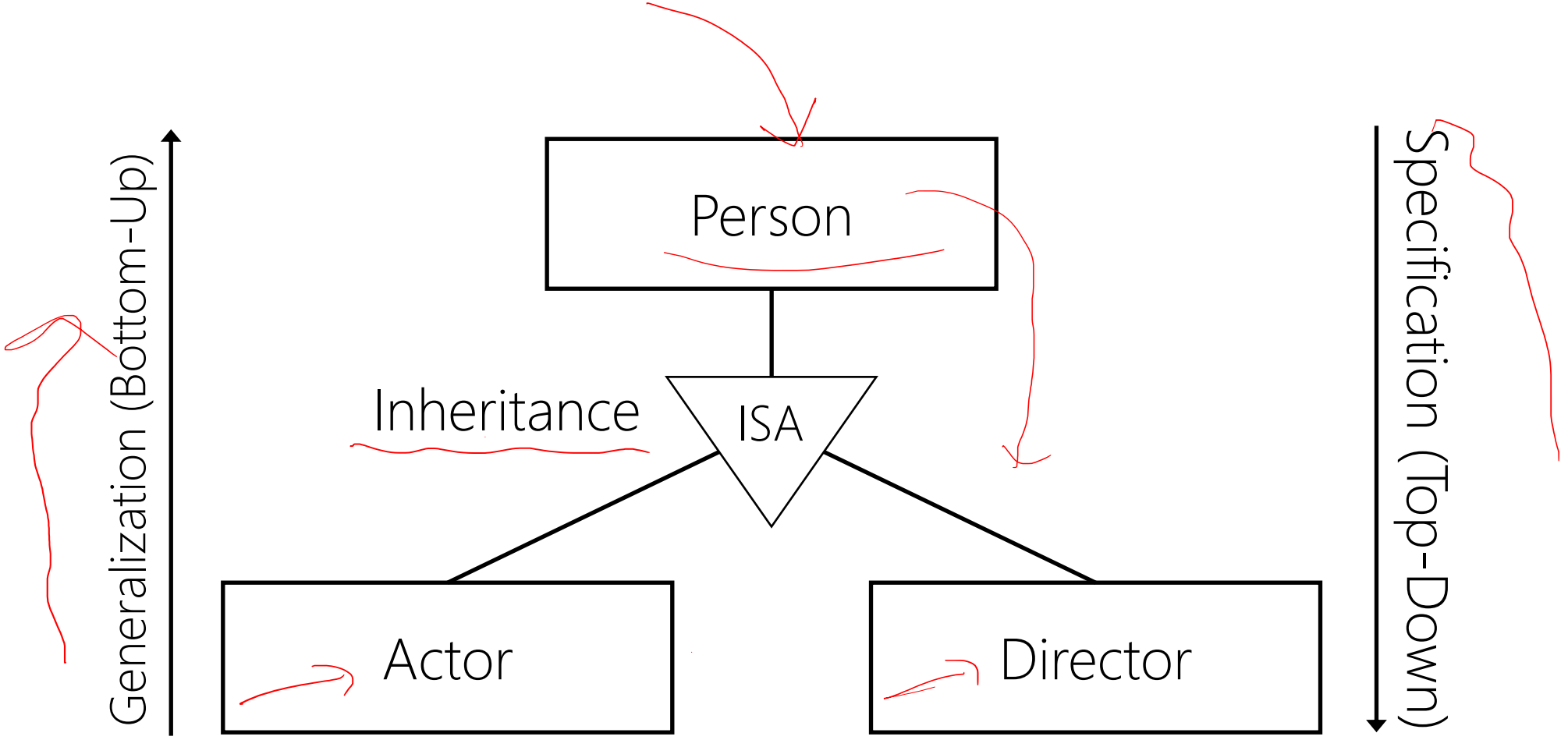
E/R × ISA


Actor
(Name)
(DateOfBirth)
(PlaceOfBirth)
Age()
BestLine
MovieCount
Both are person, so they have person's attributes like name, age, ...
Director
(Name)
(DateOfBirth)
(PlaceOfBirth)
Age()
BestMovie
MovieCount

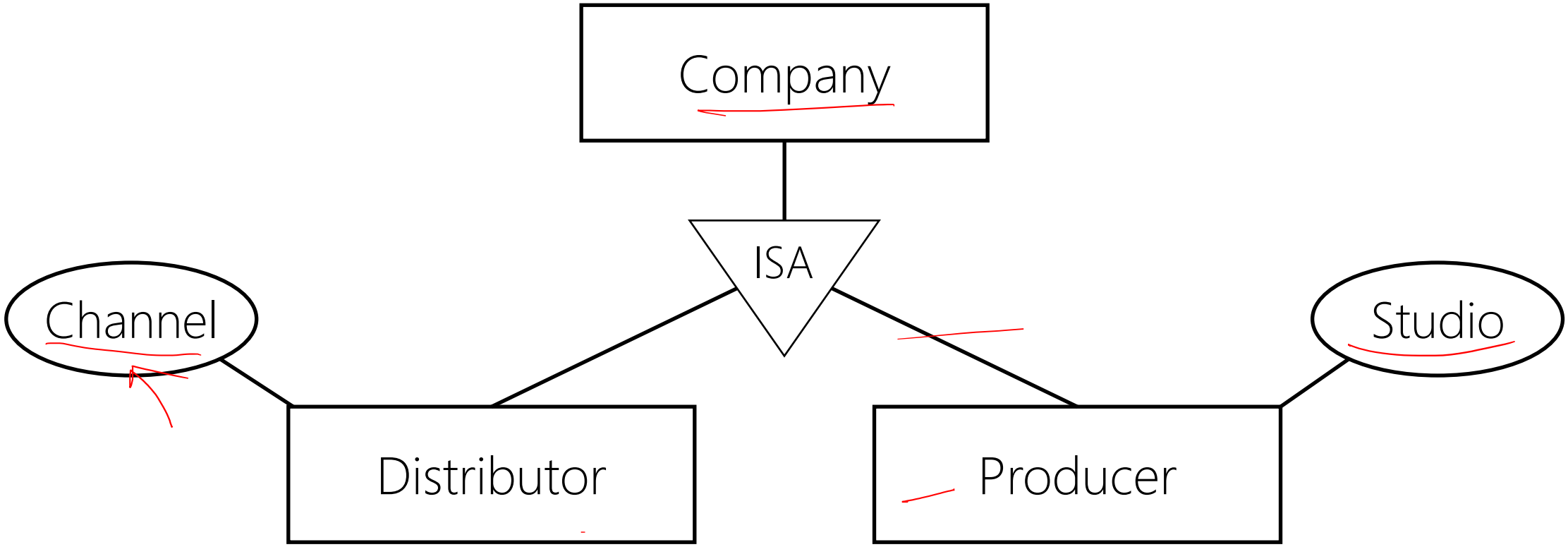
E/R × ISA


Actor
BestLine
MovieCount
Person
(Name)
(DateOfBirth)
(PlaceOfBirth)
Age()
MovieCount?
Director
BestMovie
MovieCount

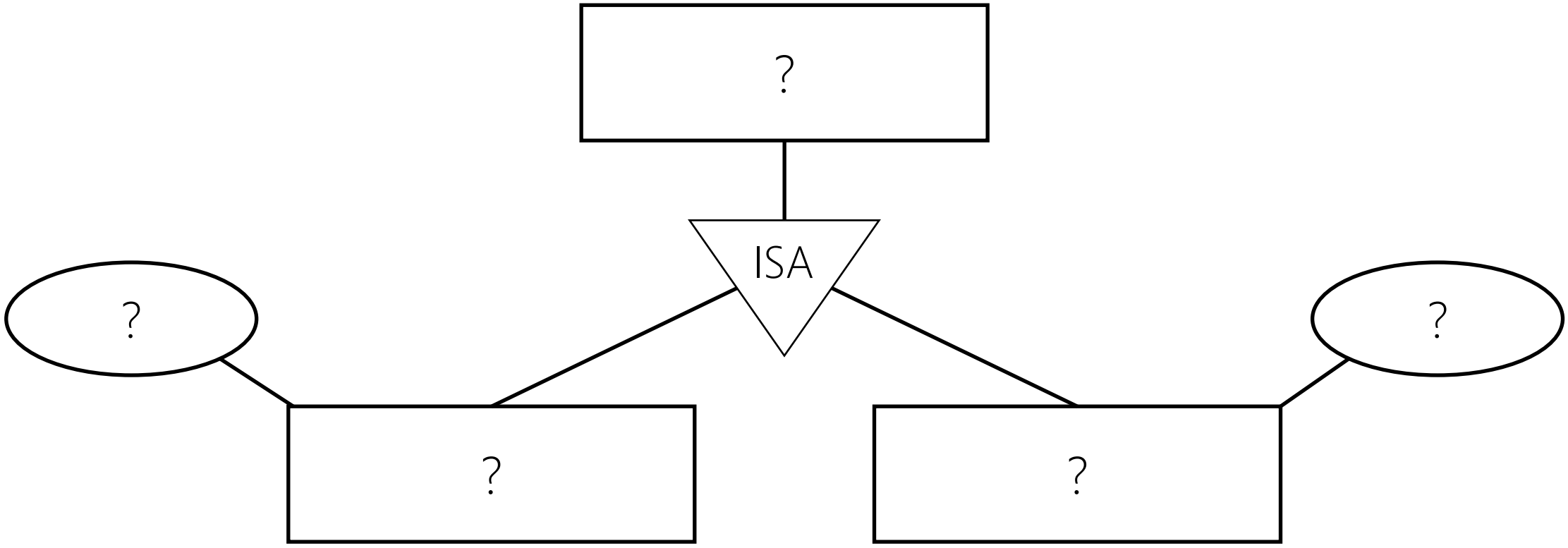
E/R × ISA


Person
Inheritance
ISA
Actor
Director
Generalization (Bottom-Up)
Specification (Top-Down)

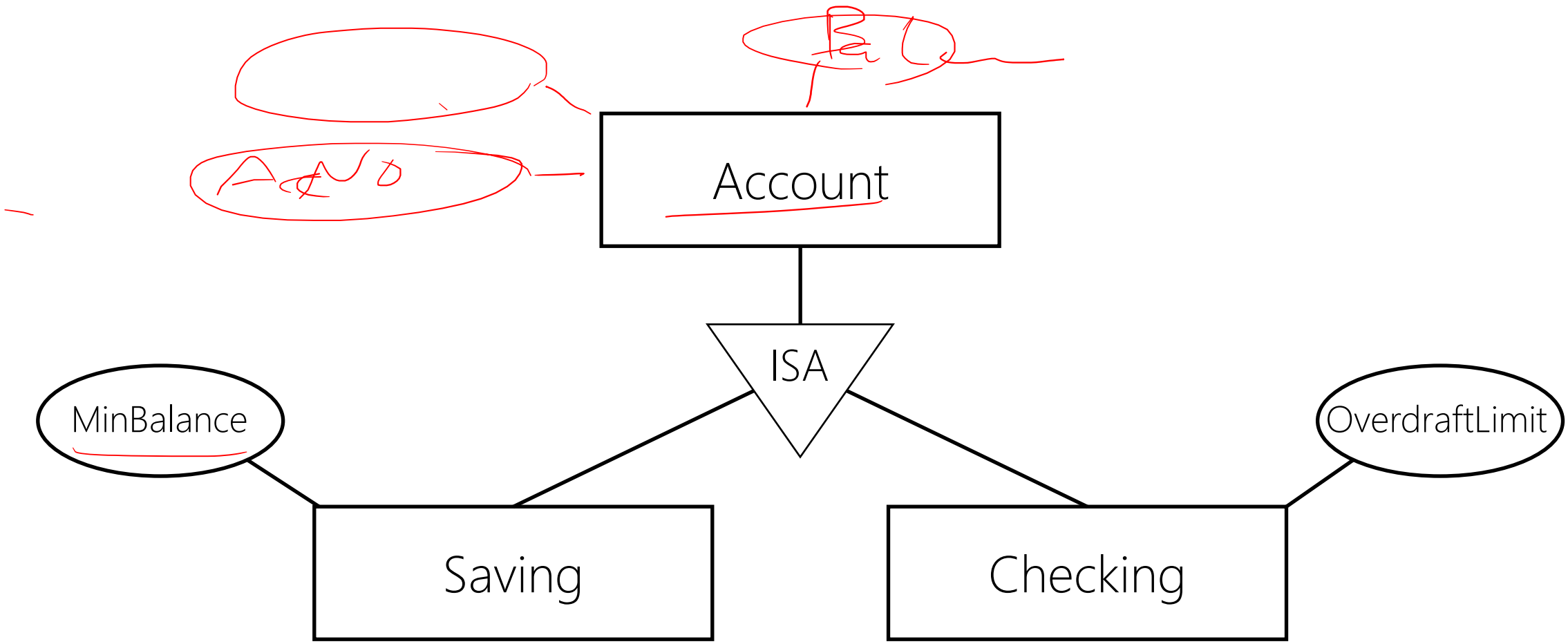
E/R × ISA



E/R × ISA × Banking



E/R × ISA × Banking



E/R × ISA × Constraints

Total Specification

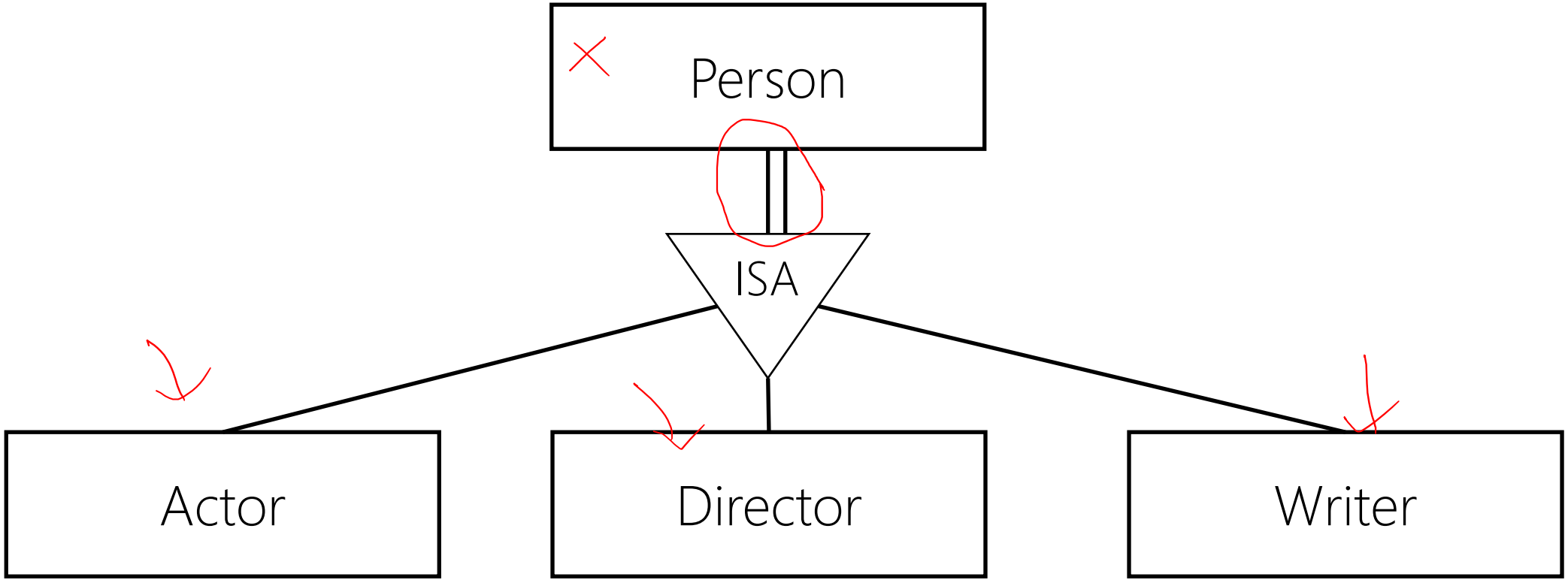
An entity from parent entity set MUST be a member of at least one child entity set

Partial Specification

An entity from parent entity set might NOT be a member of any child entity set

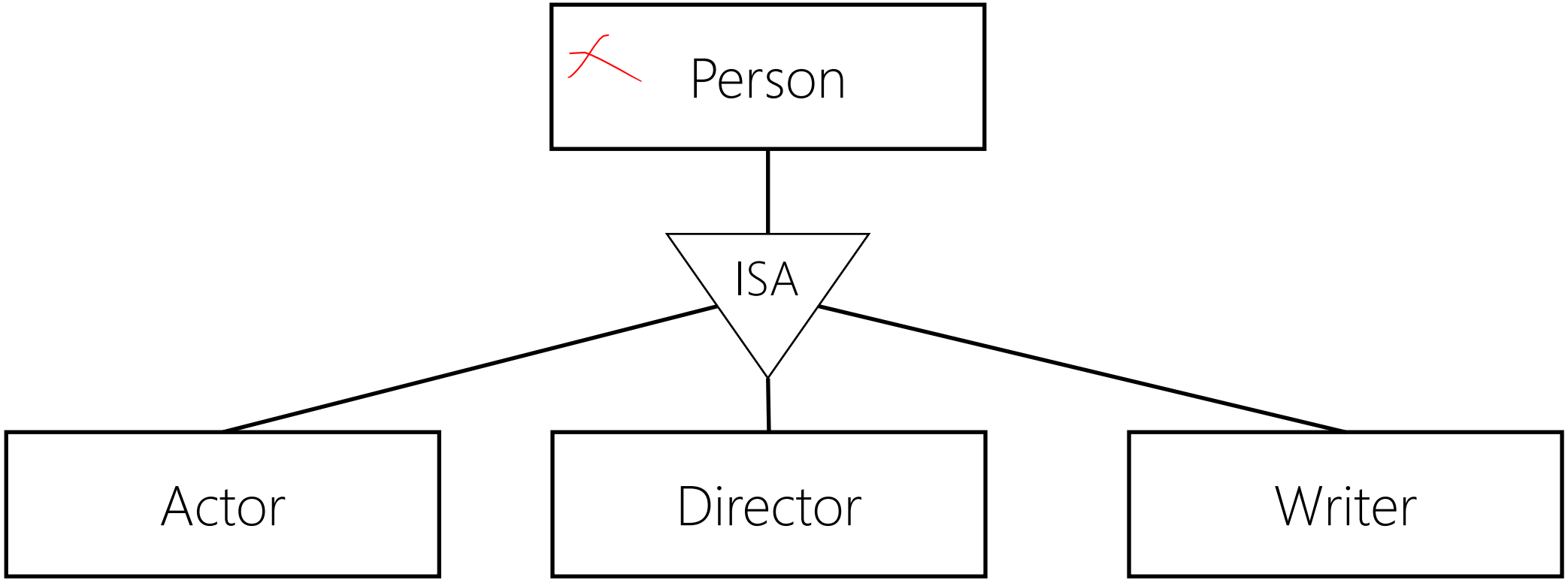
E/R × ISA × Total

A Person entity MUST be either Actor or Director or Writer

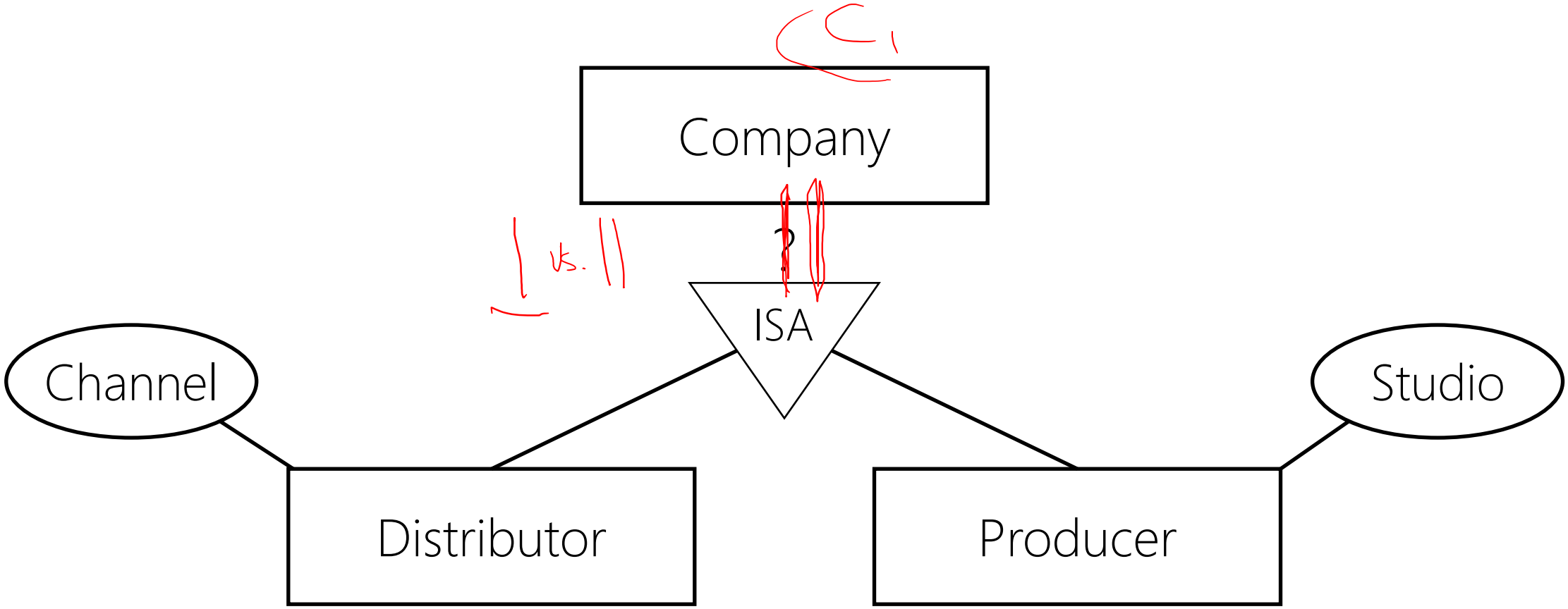


E/R × ISA × Partial

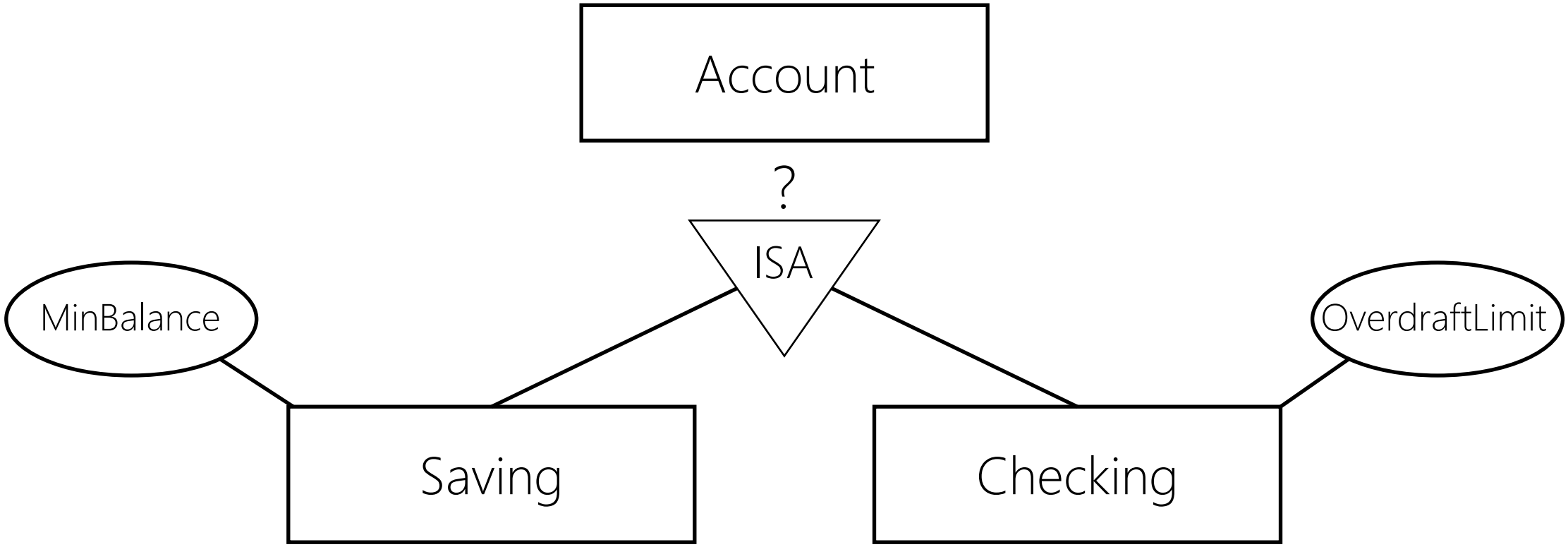
A Person entity might be neither Actor nor Director nor Writer



E/R × ISA × Total vs. Partial



E/R × ISA × Total vs. Partial



E/R × ISA × Constraints

Overlapping Specification

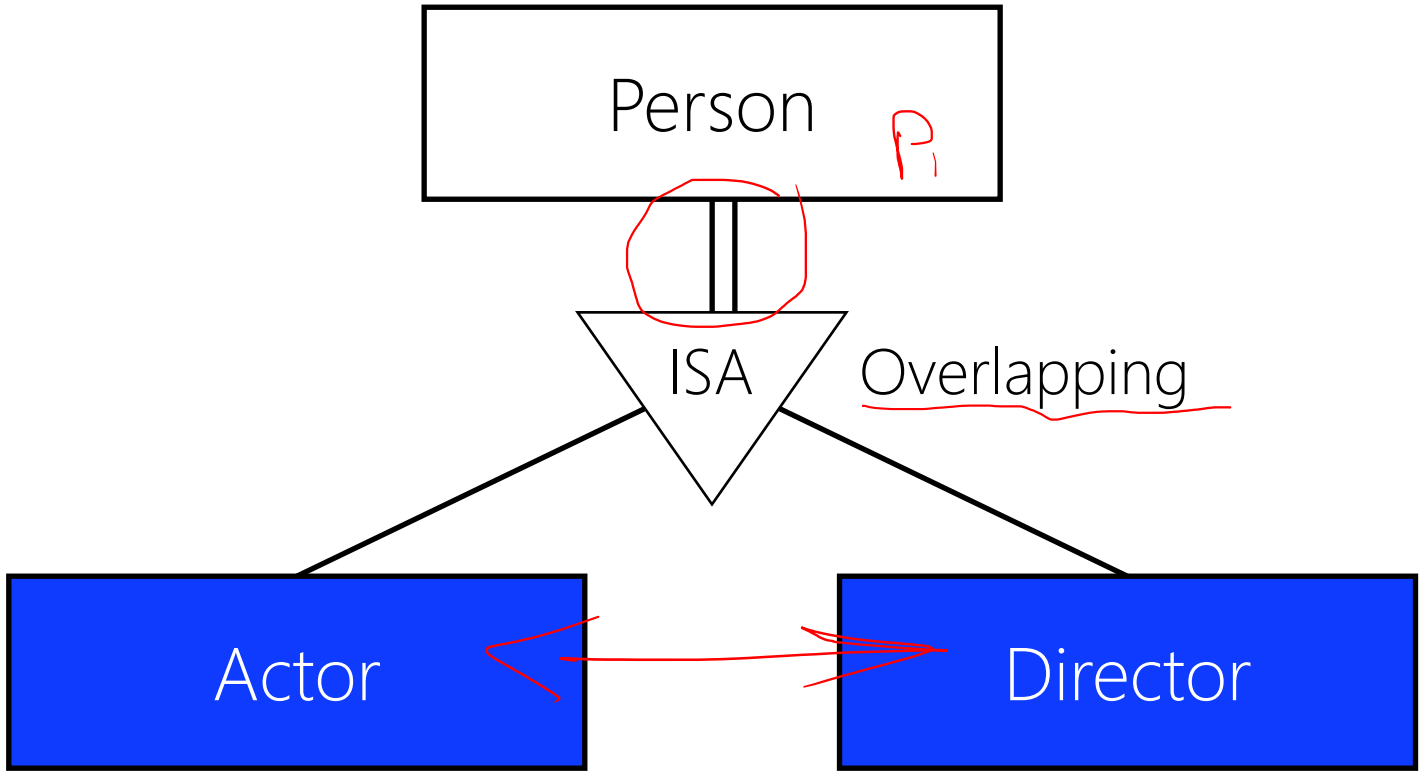
An entity from parent entity set might be a member of more than one child entity set

Disjoint Specification

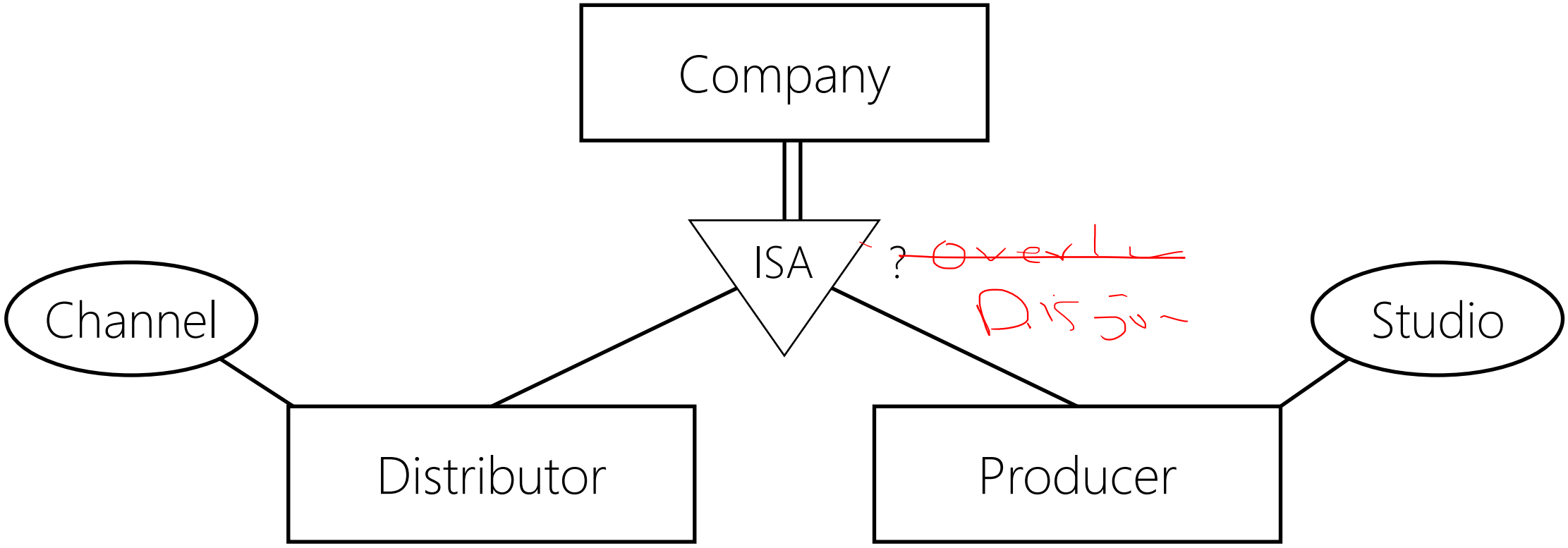
An entity from parent entity set MUST be a member of only one child entity set

E/R × ISA × Total × Overlapping

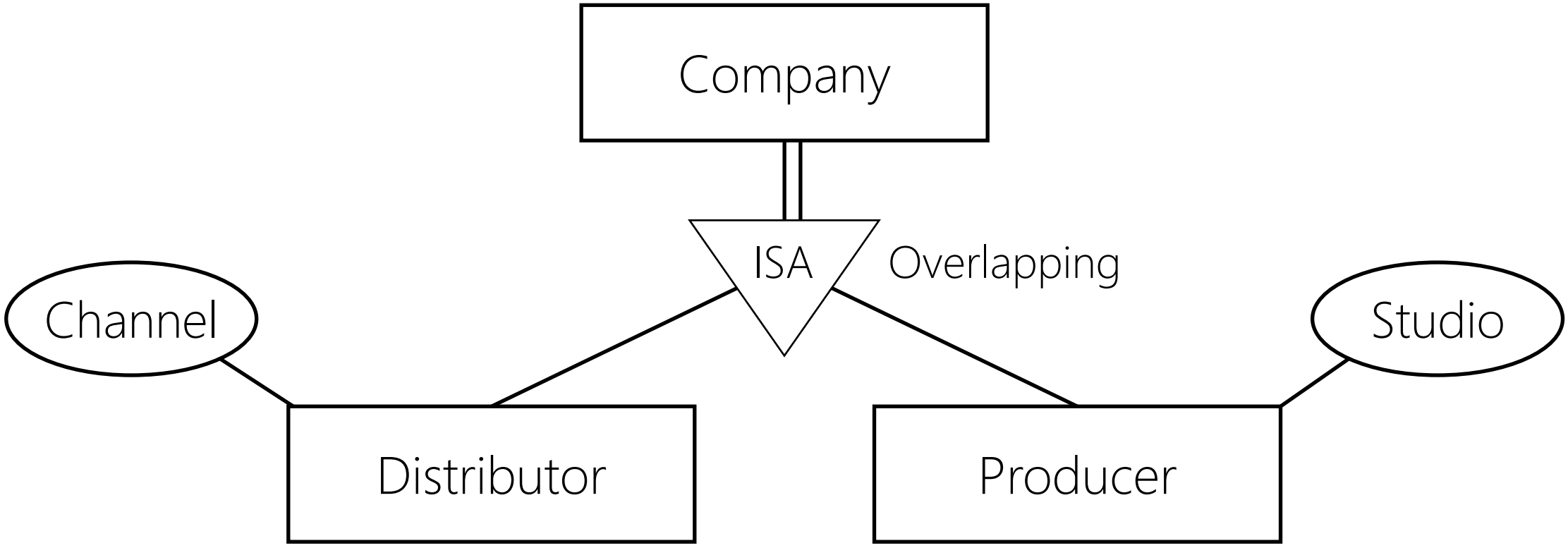
A Person entity might be both Actor and Director



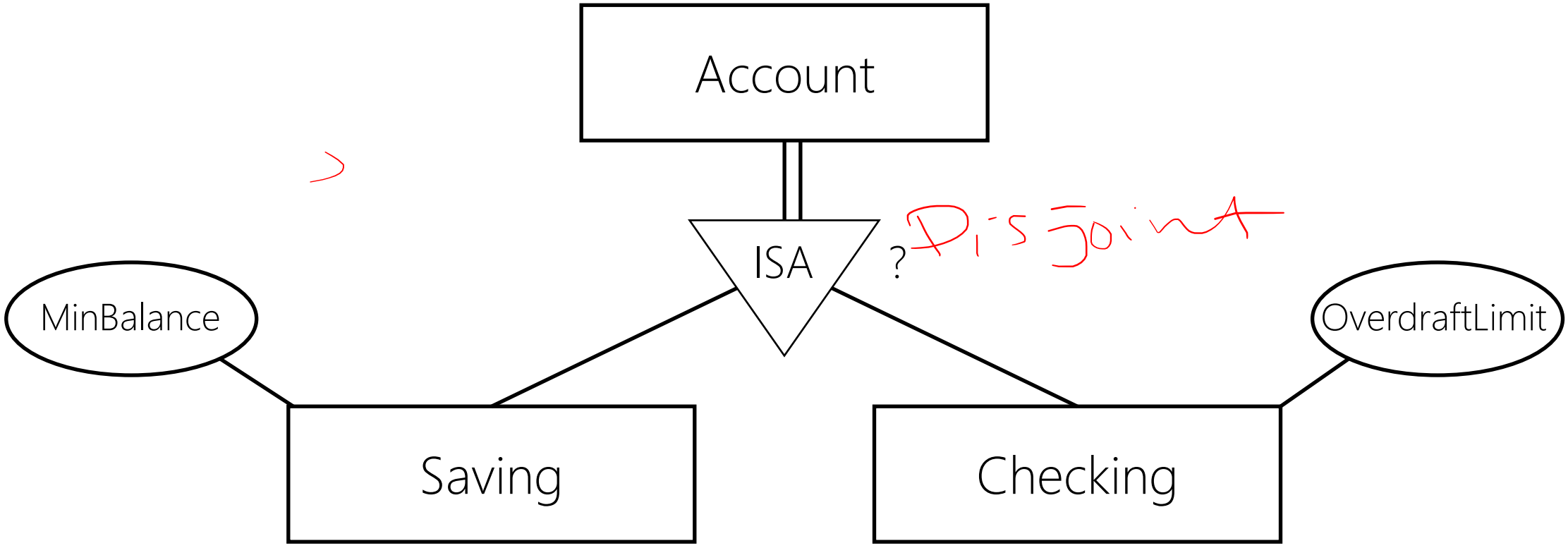
E/R × ISA × Total × ?



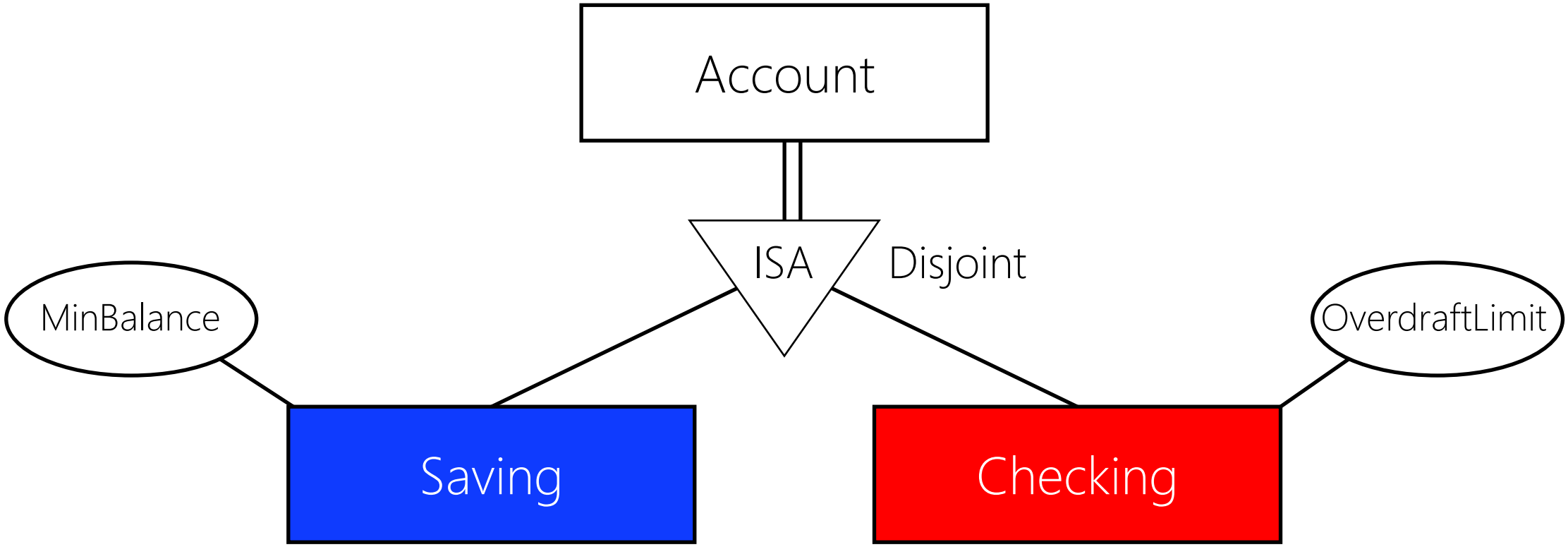
E/R × ISA × Total × Overlapping



E/R × ISA × Total × ?


Account
ISA
?
Disjoint
MinBalance
OverdraftLimit
Saving
Checking

E/R × ISA × Total × Disjoint



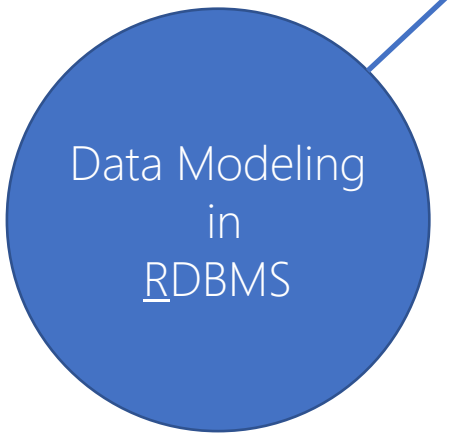
E/R × ISA × Constraints

Total vs. Partial specification looks at parent participation

Overlapping vs Disjoint specification looks at children participation

E/R × ISA × Your System (10mins)

Today



Real World Entity

Conceptual Level | Entity-Relationship Model (E/R) Level

Conceptual Level | Logical Level | Relational Model

Conceptual Level | Logical Level | Physical Level | SQL

Conceptual Level | Logical Level | Computable Entity


MR.HITCHCOCK