



# Book Reference Database

## Data Model Assessment Presentation

Group 6

Chenkai Liang, Jiaxuan XU, Rui Zhao,  
Sheng Luo, Zhiyuan Liu



# 1. How well does the model capture the requirements?

NOT NULL
NOT NULL (AK1:1)
NOT NULL
NULL

Assign an ID for

## Incorrect Model

NULL
NULL (AK1:1)

Agency		
Agency ID	INTEGER	NOT NULL
Agency Name	CHAR(30)	NOT NULL (AK1:1)



## Strength: Capture the requirements and rules for storing and retrieving titles

The data model captures all key business rules and data requirements can be confirmed by reviewing the model with business analysts or key stakeholders.



## Strength: It is a logical data model

They understood the contents of the book reference design database.



## Weakness: Wrong entity for Agency

They are confusing the concepts of agency and authorities.

Agency should be changed to authority.

## Correct Model

Assign an ID for

### Medium

Medium Code	CHAR(2)	NOT NULL
Medium Name	CHAR(30)	NOT NULL (AK1:1)
Medium Length Type Code (FK)	CHAR(1)	NOT NULL
Authority ID (FK)	INTEGER	NULL

### Language

Language Code	CHAR(2)	NOT NULL
Language Name	CHAR(30)	NOT NULL (AK1:1)

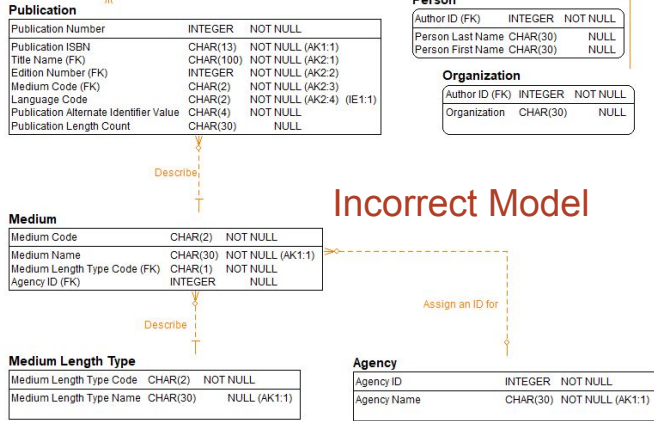
### Authority

Authority ID	INTEGER	NOT NULL
Authority Name	CHAR(30)	NOT NULL (AK1:1)

### Medium Length Type

Medium Length Type Code	INTEGER	NOT NULL
Medium Length Type Name	CHAR(30)	NOT NULL (AK1:1)

## 2. How complete is the model?



Incorrect Model

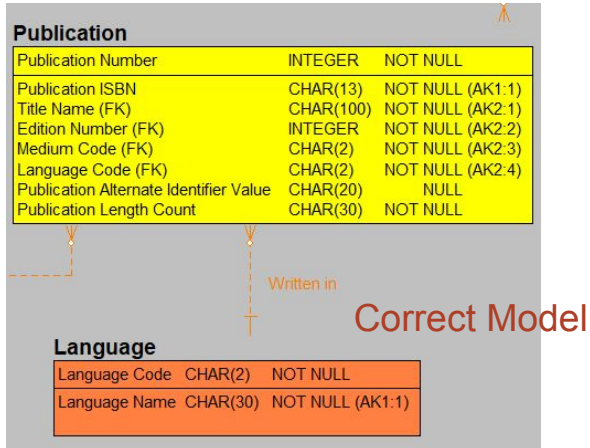


### Weakness:

**Missing Entity:** A separate ENTITY for the language needs to be included here because the original entity only had the language code, not the language name.

**Attribute Management:** The data model mentions handling specific attributes such as HR Payroll internal number, date of birth, or social security number.

**Elimination of Data:** The data model suggests dropping the "Author Sequence Number" attribute because there is insufficient information to distinguish



Correct Model



**Strength: The data model contains most of the entities, attributes, and relationships**

Incorrect model partially complete the desired business process. There are just elements that are missing and relationships that are not fully defined.

### 3. How well does the model match its scheme?

---

#### Incorrect Model

##### Strengths

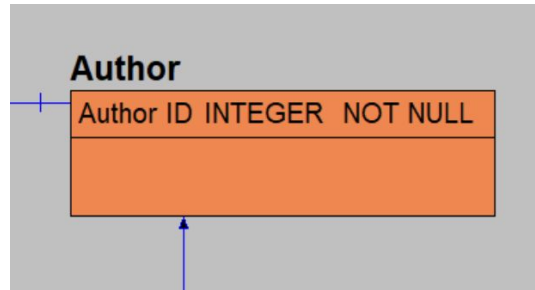
This data model has consistency. And it accurately represents business processes, data requirements, and relationships.

**Author**

Author ID	INTEGER	NOT NULL
HR Payroll System Internal ID	INTEGER	NULL
Author Birth Date	CHAR(18)	NULL
Social Security Number	CHAR(10)	NULL

Write Write

#### Correct Model



##### Weakness

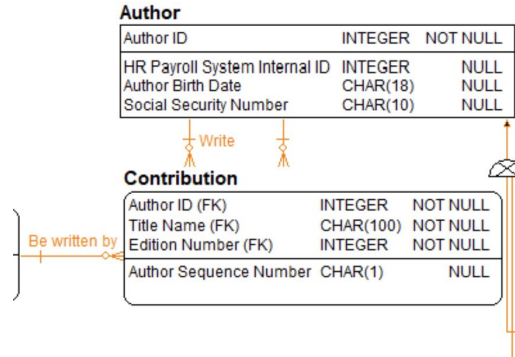
Contribution contains extra attribute "Author Sequence Number". And it affects performance, and this attribute needs to be placed in the "Author".

## 4. How structurally sound is the model?

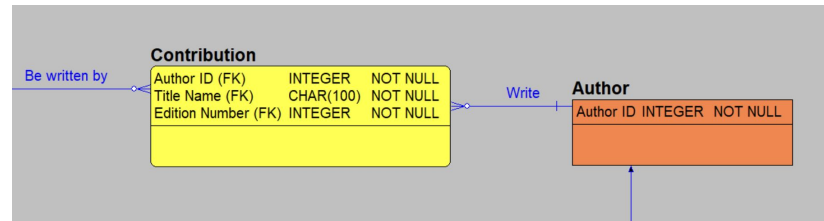
### Strengths

This data model is normalized, and its well-structured model follows the principles of database normalization. And have a consistent naming convention.

### Incorrect Model



### Correct Model



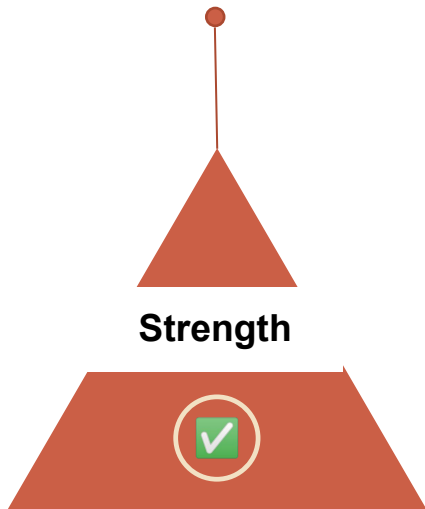
### Weakness

Wrong relationship between author and contribution. EDITION primary author full name is redundant; the subset of author, person, already has a first and last name inside. Alternatives could not be NULL.

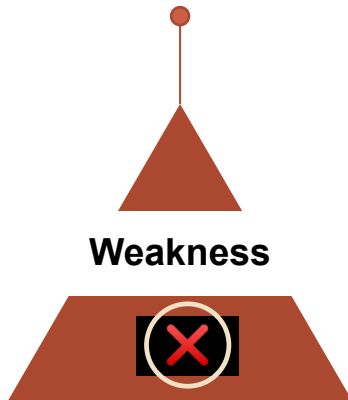
## 5. How well does the model leverage generic structures?

### Entity-Relationship Structure

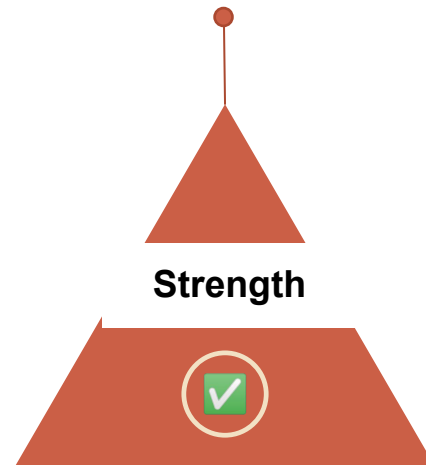
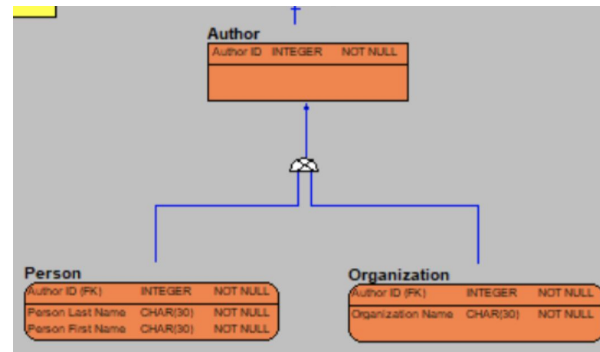
The model effectively utilizes the generic structure to represent different aspects of the book publishing domain.



**Abstractive words**  
The "Intellectual Unit" is  
Abstractive, which doesn't make  
any sense for our business.



### Subtyping



## 6. How well does the model follow naming standards?

---



# Strength



### **Descriptive Names**

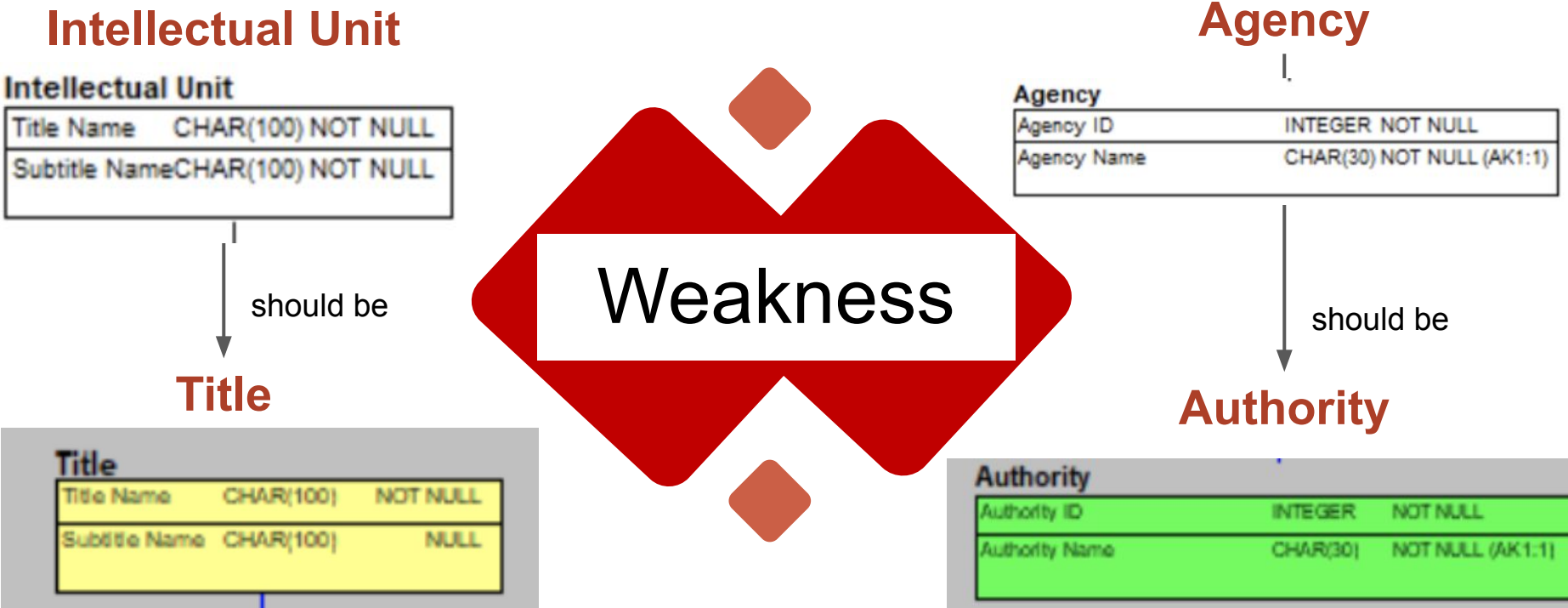
Most of the names are descriptive and indicative of their respective purposes.



### **Consistency**

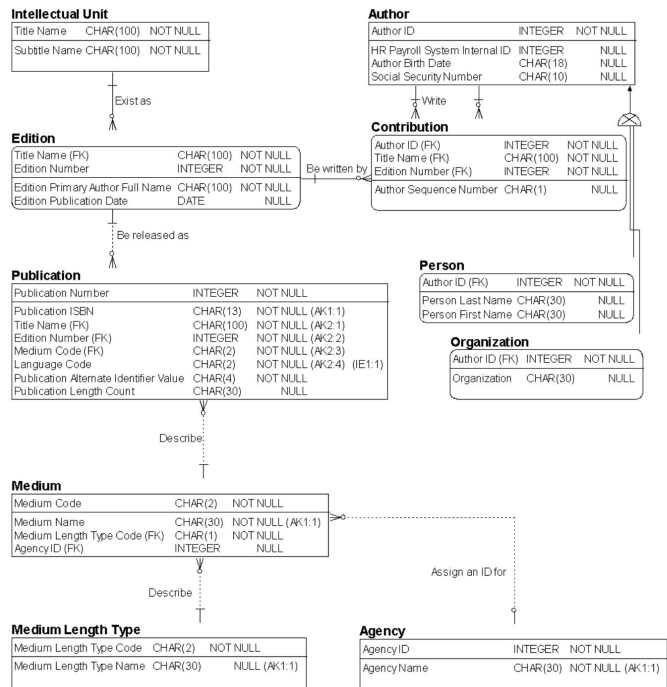
There is a certain level of consistency in naming conventions throughout the data model, which contributes to its overall clarity.

6. How well does the model follow naming standards?

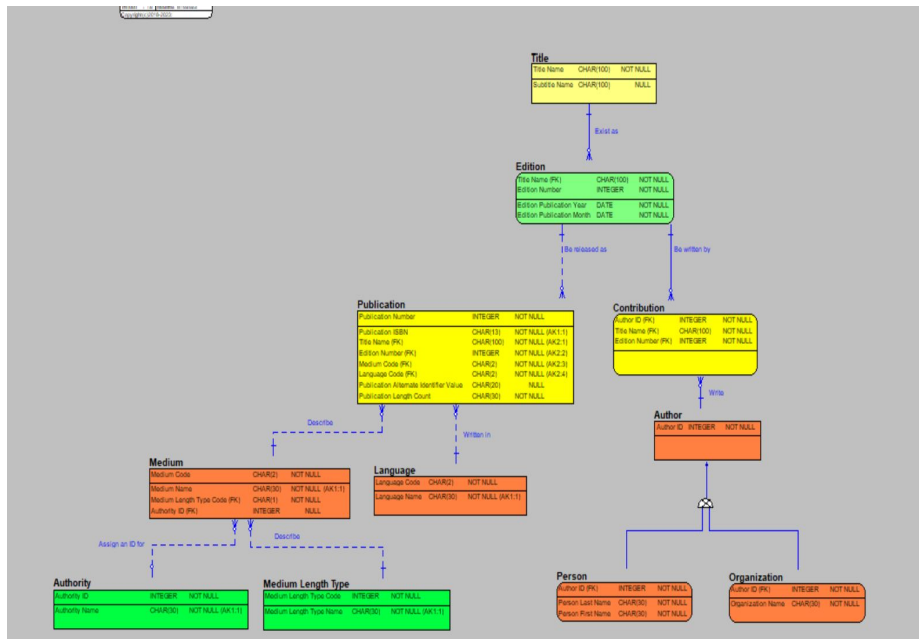




## 7. How well has the model been arranged for readability?



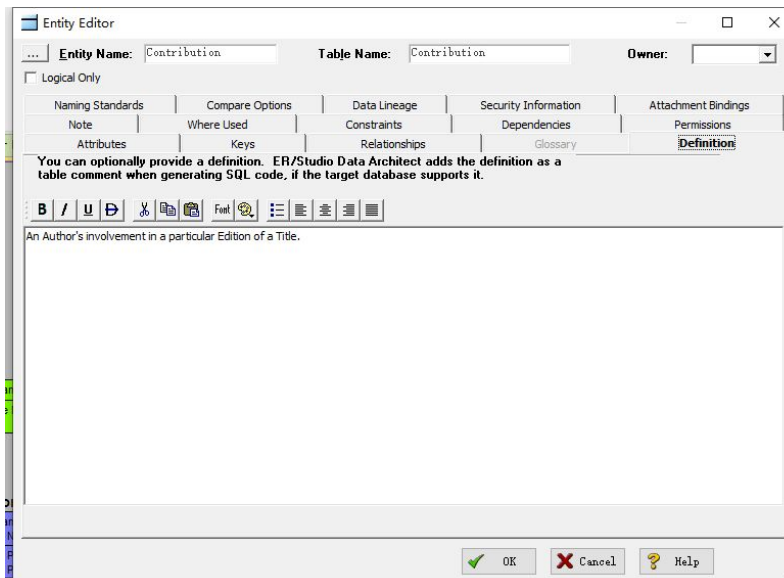
The colors of the overall data modeling could be more distinguishable.



The placement of Person and Organization is not easy to read.

## 8. How good are the definitions?

Some of the definitions are not detailed enough to be clear such as AGENCY and CONTRIBUTION.



Entity Editor

Entity Name: Contribution Table Name: Contribution Owner: [dropdown]

☐ Logical Only

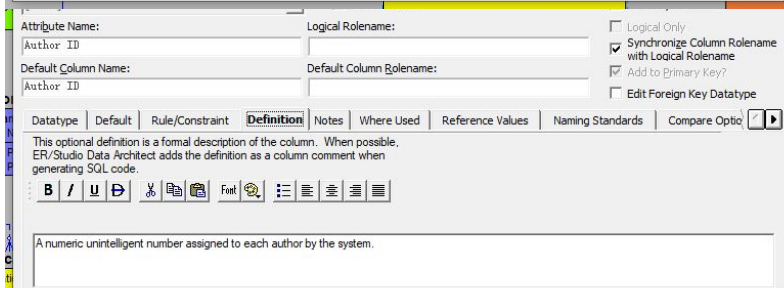
Naming Standards Compare Options Data Lineage Security Information Attachment Bindings  
Note Where Used Constraints Dependencies Permissions  
Attributes Keys Relationships Glossary Definition

You can optionally provide a definition. ER/Studio Data Architect adds the definition as a table comment when generating SQL code, if the target database supports it.

[Rich Text Editor]

An Author's involvement in a particular Edition of a Title.

OK Cancel Help



Attribute Name: [text] Logical Rolename: [text]

Author ID

Default Column Name: [text] Default Column Rolename: [text]

Author ID

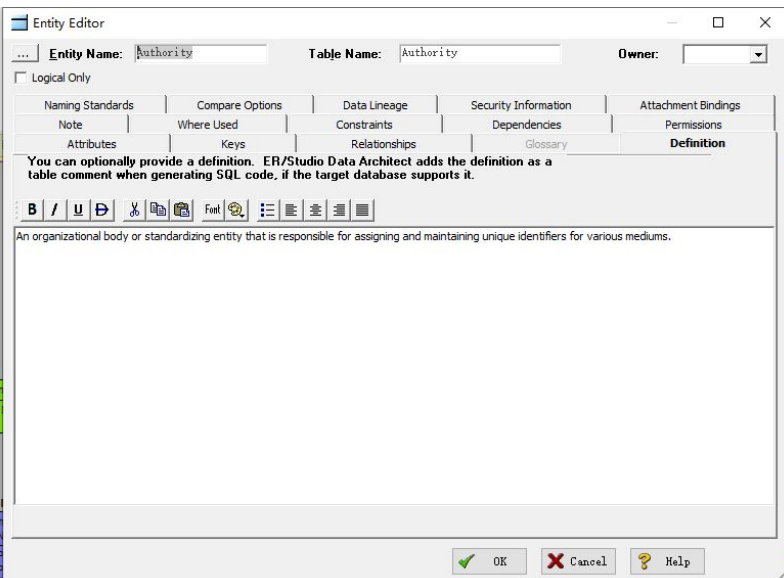
☐ Logical Only  
☒ Synchronize Column Rolename with Logical Rolename  
☒ Add to Primary Key?  
☐ Edit Foreign Key Datatype

Datatype | Default | Rule/Constraint | Definition | Notes | Where Used | Reference Values | Naming Standards | Compare Options

This optional definition is a formal description of the column. When possible, ER/Studio Data Architect adds the definition as a column comment when generating SQL code.

[Rich Text Editor]

A numeric unintelligent number assigned to each author by the system.



Entity Editor

Entity Name: Authority Table Name: Authority Owner: [dropdown]

☐ Logical Only

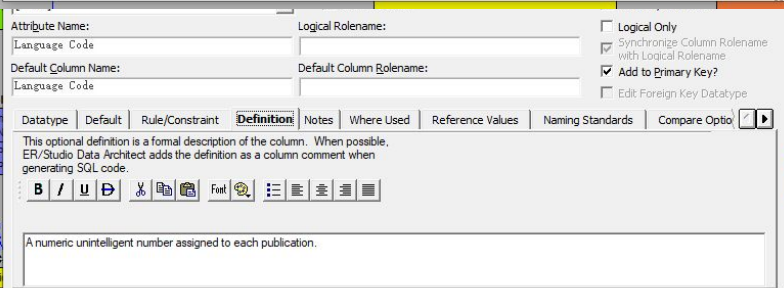
Naming Standards Compare Options Data Lineage Security Information Attachment Bindings  
Note Where Used Constraints Dependencies Permissions  
Attributes Keys Relationships Glossary Definition

You can optionally provide a definition. ER/Studio Data Architect adds the definition as a table comment when generating SQL code, if the target database supports it.

[Rich Text Editor]

An organizational body or standardizing entity that is responsible for assigning and maintaining unique identifiers for various mediums.

OK Cancel Help



Attribute Name: [text] Logical Rolename: [text]

Language Code

Default Column Name: [text] Default Column Rolename: [text]

Language Code

☐ Logical Only  
☒ Synchronize Column Rolename with Logical Rolename  
☒ Add to Primary Key?  
☐ Edit Foreign Key Datatype

Datatype | Default | Rule/Constraint | Definition | Notes | Where Used | Reference Values | Naming Standards | Compare Options

This optional definition is a formal description of the column. When possible, ER/Studio Data Architect adds the definition as a column comment when generating SQL code.

[Rich Text Editor]

A numeric unintelligent number assigned to each publication.

## 9. How consistent is the model with the enterprise?

### Strength: Effective Modeling



In most scenarios, the model correctly meets the company's requirements.

### Weakness: Date Split Needed



'Edition Publication Date' needs to be divided into more specific segments, such as a distinct year and month.

#### Edition

Title Name (FK)	CHAR(100)	NOT NULL
Edition Number	INTEGER	NOT NULL
Edition Primary Author Full Name	CHAR(100)	NOT NULL
Edition Publication Date	DATE	NULL

Incorrect Model

#### Edition

Title Name (FK)	CHAR(100)	NOT NULL
Edition Number	INTEGER	NOT NULL
Edition Publication Year	DATE	NOT NULL
Edition Publication Month	DATE	NOT NULL

Correct Model

## 10. How well does the metadata match the data?

---



## 10. How well does the metadata match the data?

### Intellectual Unit

Title Name	CHAR(100)	NOT NULL
Subtitle Name	CHAR(100)	NOT NULL

### Medium Length Type

Medium Length Type Code	CHAR(2)	NOT NULL
Medium Length Type Name	CHAR(30)	NULL (AK1:1)

### Publication

Publication Number	INTEGER	NOT NULL
Publication ISBN	CHAR(13)	NOT NULL (AK1:1)
Title Name (FK)	CHAR(100)	NOT NULL (AK2:1)
Edition Number (FK)	INTEGER	NOT NULL (AK2:2)
Medium Code (FK)	CHAR(2)	NOT NULL (AK2:3)
Language Code	CHAR(2)	NOT NULL (AK2:4) (IE1:1)
Publication Alternate Identifier Value	CHAR(4)	NOT NULL
Publication Length Count	CHAR(30)	NULL

Incorrect Model

### Title

Title Name	CHAR(100)	NOT NULL
Subtitle Name	CHAR(100)	NULL

### Medium Length Type

Medium Length Type Code	INTEGER	NOT NULL
Medium Length Type Name	CHAR(30)	NOT NULL (AK1:1)

### Publication

Publication Number	INTEGER	NOT NULL
Publication ISBN	CHAR(13)	NOT NULL (AK1:1)
Title Name (FK)	CHAR(100)	NOT NULL (AK2:1)
Edition Number (FK)	INTEGER	NOT NULL (AK2:2)
Medium Code (FK)	CHAR(2)	NOT NULL (AK2:3)
Language Code (FK)	CHAR(2)	NOT NULL (AK2:4)
Publication Alternate Identifier Value	CHAR(20)	NULL
Publication Length Count	CHAR(30)	NOT NULL

Correct Model

---

# THANK YOU

Group 6

