

## Coding and Big Data

### Data Modeling

- Practice

**Student Table**

Std_ID	Std_Name	Std_Class
001201	Alvin	10-A
001202	Bayu	10-B
001203	Cahya	10-C
001204	Dito	10-D

**Loan Table**

Loan_ID	Std_ID	Book_ID	Loan_From	Loan_Until
A-201	001201	BK-212	02/05/22	02/06/22
B-202	001201	BB-222	02/05/22	02/06/22
B-202	001202	BB-222	04/05/22	04/06/22
C-203	001202	BD-232	04/05/22	04/06/22
C-203	001203	BD-232	01/05/22	01/06/22
D-204	001203	BF-242	01/05/22	01/06/22
D-204	001204	BF-242	03/05/22	03/06/22
A-201	001204	BK-212	03/05/22	03/06/22

**Book Table**

Book_ID	Title	Published	Author_ID
BK-212	About You	2006	200201
BB-222	Back Rainy	2009	200202
BD-232	Crystal Flower	2012	200203
BF-242	Diamond Star	2016	200204

**Author Table**

Author_ID	Author_Name
200201	Alexander
200202	Brian
200203	Christine
200204	Donny

## ➤ Relationship

- One-To-Many Relationship

Std_ID	Std_Name	Std_Class
001201	Alvin	10-A
001202	Bayu	10-B
001203	Cahya	10-C
001204	Dito	10-D

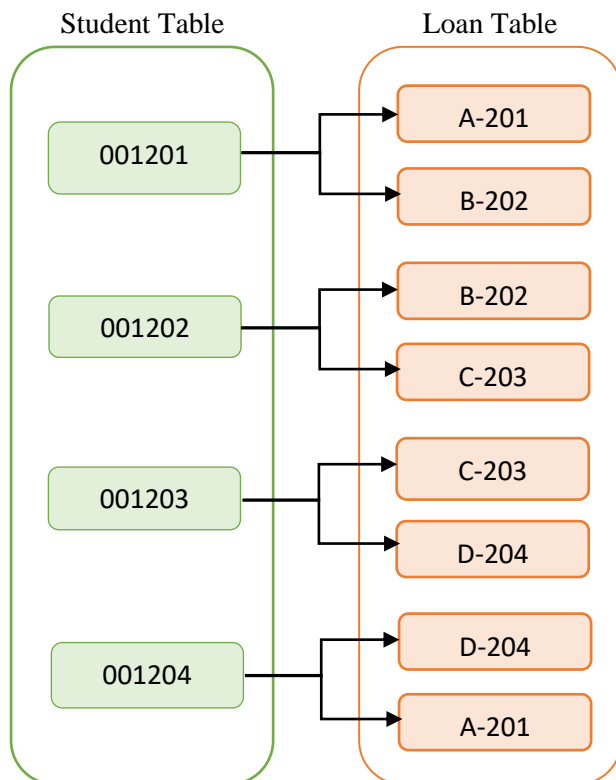
Loan_ID	Std_ID	Book_ID	Loan_From	Loan_Until
A-201	001201	BK-212	02/05/22	02/06/22
B-202	001201	BB-222	02/05/22	02/06/22
B-202	001202	BB-222	04/05/22	04/06/22
C-203	001202	BD-232	04/05/22	04/05/22
C-203	001203	BD-232	01/05/22	01/06/22
D-204	001203	BF-242	01/05/22	01/06/22
D-204	001204	BF-242	03/05/22	03/06/22
A-201	001204	BK-212	03/05/22	03/06/22



Relation: (Std\_ID and Std\_ID)

Each student can loan more than one book at the same time.

### ONE TO MANY



- Many-to-Many Relationship

Loan_ID	Book_ID	Loan_From	Loan_Until	Std_ID
A-201	BK-212	02/05/22	02/06/22	001201
A-201	BB-222	02/05/22	02/06/22	001201
B-202	BB-222	02/05/22	02/06/22	001201
B-202	BB-222	04/05/22	04/06/22	001202
B-202	BD-232	04/05/22	04/06/22	001202
C-203	BD-232	04/05/22	04/05/22	001202
C-203	BD-232	01/05/22	01/06/22	001203
C-203	BF-242	01/05/22	01/06/22	001203
D-204	BF-242	01/05/22	01/06/22	001203
D-204	BF-242	03/05/22	03/06/22	001204
D-204	BK-212	03/05/22	03/06/22	001204
A-201	BK-212	03/05/22	03/06/22	001204

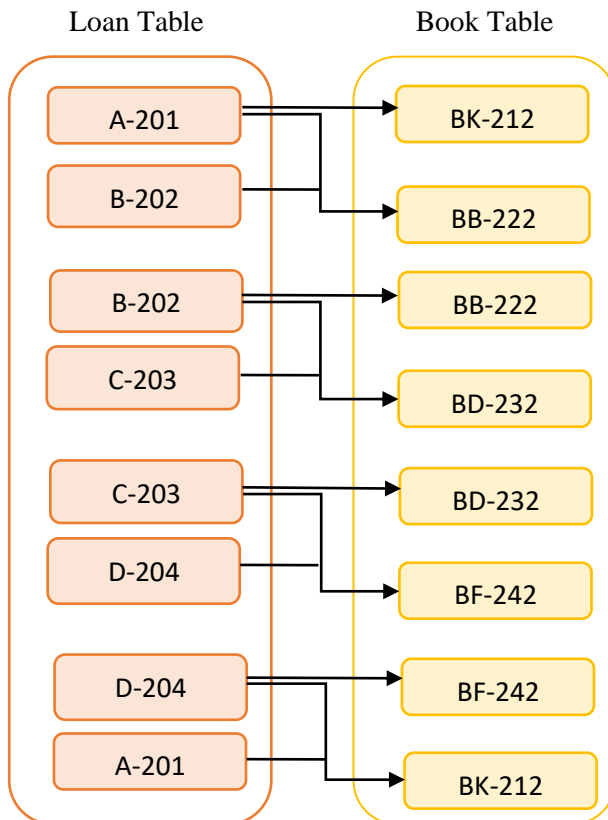
Book_ID	Title	Published	Author_ID
BK-212	About You	2006	200201
BB-222	Back Rainy	2009	200202
BD-232	Crystal Flower	2012	200203
BF-242	Diamond Star	2016	200204



Relation: (Book\_ID and Book\_ID)

Each student can loan more than one book.

### MANY TO MANY



- **One-to-One Relationship**

Book_ID	Author_ID	Title	Published
BK-212	200201	About You	2006
BB-222	200202	Back Rainy	2009
BD-232	200203	Crystal Flower	2012
BF-242	200204	Diamond Star	2016

Author_ID	Author_Name
200201	Alexander
200202	Brian
200203	Christine
200204	Donny



Relation: (Author\_ID and Author\_ID)  
Each author only published one book.

### ONE TO ONE

