



2023/2024 AY  
Odd Semester

## MODULE 2 PRACTICUM EXAMINATION

Departemen Teknik Informatika

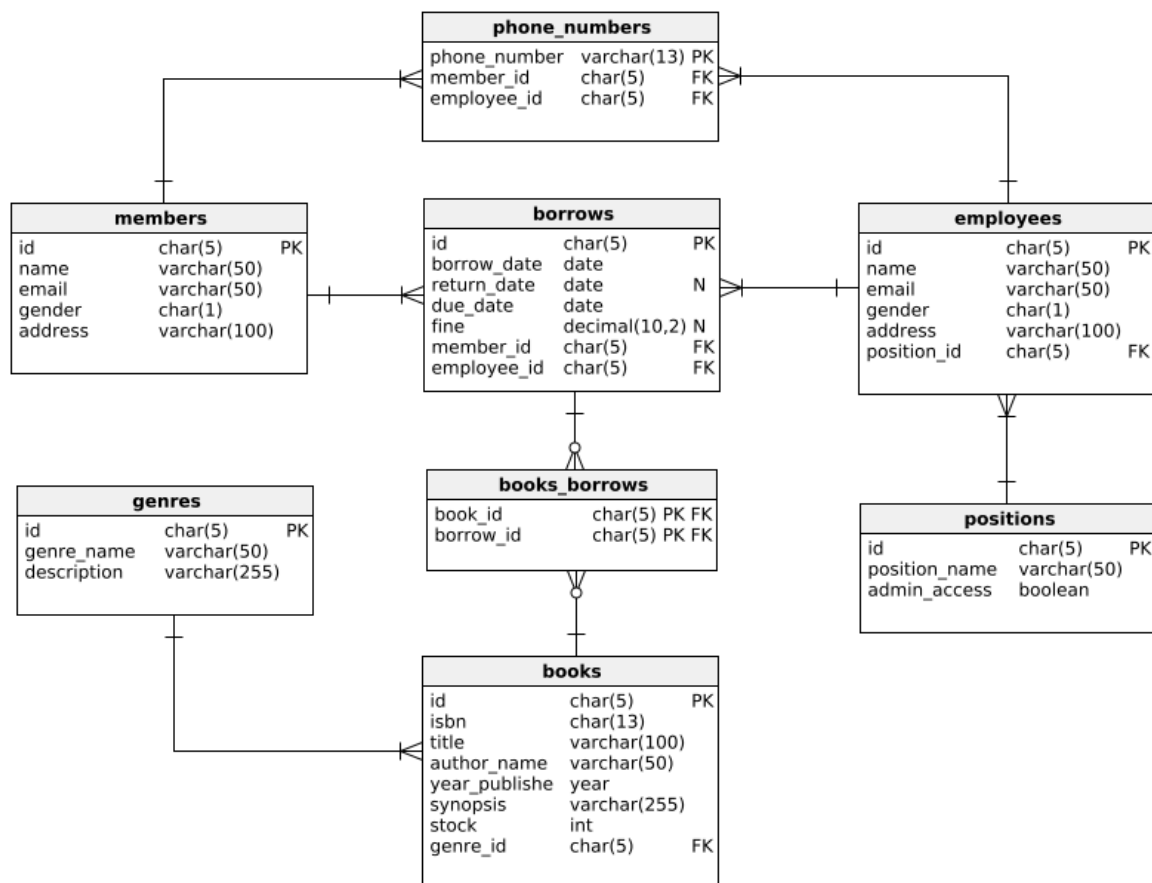
Fakultas Teknologi Elektro dan Informatika Cerdas

Institut Teknologi Sepuluh Nopember



Course	:	Database System (EF4104)	Time	:	120 Minutes
Day, Date	:	Tuesday, 12 November 2024	Location	:	Informatics
Module Material	:	DDL and DML	Exam type	:	Closed Book
Lecturer	:	Database System Lecturer Team			

### Grandfather Wendy the Librarian



**Note : Database design was made by Vertabelo MySQL**

Hola, you met Grandfather Wendy again! However, Grandfather Wendy's previous cinema business faces bankruptcy. Nevertheless, since Grandfather Wendy's a crazy rich (he's still very rich, he treats his friends on his birthday). Now, Grandfather Wendy thinks he wants to be a useful person. He renovates his cinema to a **library**.

## DDL

1. Grandfather Wendy asks for your help again. Since in the previous module you have helped him, Grandfather Wendy experienced a throwback of his previous database systems lesson. He had already made the PDM for you. All you need is to make the database based on the PDM using the command CREATE.

note: To ease the process of the upcoming numbers, make the Foreign Key using command **ON UPDATE CASCADE** and **ON DELETE CASCADE**.

2. You suggest so that authors were be made of new table themselves namely **authors** with primary key **id** that stores all data details about the regarding author, such as:
  - id CHAR(5)
  - author\_name VARCHAR(50)
  - nationality VARCHAR(30)
  - birthdate DATE

Besides that, Grandfather Wendy forgot that every book has a publisher. So, you also need to make one more table, namely **publishers**, with attributes like this:

- id CHAR(5) (PK)
- name VARCHAR(50)
- address VARCHAR(100)
- country VARCHAR(30)
- email VARCHAR(50)

note : don't forget to set all attributes to **NOT NULL**.

3. You gave another suggestion to Grandfather Wendy. To the table member it is supposed to use just NIK for the PRIMARY KEY (no need for id). Grandfather Wendy, who had trusted you completely accepts your suggestion. Now, change the id column in the table to NIK.

hint : Remove all foreign keys that reference the table member. To rename the column, don't forget to drop the primary key firsthand. Lastly, return the previously removed foreign key.

4. Grandfather Wendy realizes that table phone\_numbers is not necessary. so he made a new rule that there can only be one phone number registered. So he asks for table phone\_numbers deleted and adds a new attribute in the member and employee table namely phone\_number with the same datatype as the previous.
5. table genres

ID	Genre Name	Description
GR001	History	Books that examine specific events or eras, providing insight into the past and its impact on the present. Usually accompanied by in-depth historical data, analysis and narrative.
GR002	Fiction	Imaginative stories created by writers, not based on real facts. This genre includes subgenres such as romance, fantasy, and adventure, with a focus on characters and storyline.
GR003	Self-Development	Books that provide guidance to improve the quality of life or skills of the reader. Presents practical advice on topics such as motivation, time management, and personal problem solving.
GR004	Biography	Tells a person's life in detail from birth to the end of his life or now. Compiled based on facts, this story describes the character's experiences, struggles and achievements.
GR005	Reference	Books that function as complete reference sources, such as dictionaries, encyclopedias, or handbooks. Contains data, definitions or concepts that can be accessed as needed, without having to be read sequentially.

table authors

ID	Author Name	Nationality	Birthdate
AU001	Michael Brown	American	30 March 1990
AU002	Andi Saputra	Indonesian	2 October 1988
AU003	Yuki Nakamura	Japanese	22 January 1973
AU004	Kim Min Joon	South Korean	18 April 1982
AU005	James Williams	British	4 Desember 1962

table publishers

ID	Name	Address	Country	Email
PB001	Silver Oak	1234 Elm	United	silveroak123

	Publishing	Street	States	4@gmail.com
PB002	Blue Sky Books	9012 Pine Road	Jepang	bluesky9012@gmail.com
PB003	Green Leaf Press	5678 Maple Avenue	Indonesia	greenleaf5678@gmail.com
PB004	Golden Dragon Publishing	3456 Bamboo Lane	China	goldendragon3456@gmail.com
PB005	Red River Press	7890 Cherry Blossom Drive	France	redriver7890@gmail.com

table books

ID	ISBN	Title	Year Published	Synopsis	Stock	Genre ID	Author ID	Publisher ID
BK001	9780123456789	Jejak Peradaban: Kisah Perjalan Sejarah Indonesia	2010	Delving into Indonesian history, this book presents important events and influential figures who shaped the nation's civilization, bringing readers to understand the roots of Indonesia	5	GR001	AU002	PB003

				ian culture and identity.				
BK002	9781234567890	Small Steps, Big Changes : Building Positive Habits	2005	Discover the power of small habits that have a big impact. This book provides practical strategies for building positive habits that can change lives and improve overall well-being.	3	GR003	AU003	PB002
BK003	9782345678901	Complete Dictionary of Information Technology Terms	2020	A complete guide to information technology terms, this book explains basic concept	7	GR005	AU001	PB001

				s to complex technical terms, making it a useful reference resource for students and professionals.				
BK004	9783456789012	Breaking Barriers: The Inspiring Story of Nelson Mandela	2018	The extraordinary story of Nelson Mandela, a freedom fighter who overcame obstacles to fight for equality and justice. An inspiring journey of courage, sacrifice, and hope.	2	GR004	AU005	PB001
BK005	9784567890123	Light at the End of the Road: A	2024	In a journey full of challenges, a	4	GR002	AU004	PB004

		Story of Hope		character finds the strength of hope and friendship. This novel invites readers to reflect on the meaning of life and the importance of believing in a better future.				
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table positions

ID	Position Name	Admin Access
PS001	Librarian	True
PS002	Cleaning	False
PS003	Security	False

table employees

ID	Name	Email	Gender	Phone Number	Address	Position ID
EM001	Andi Gading	andi@gmail.com	P	081628492610	Jl. Merdeka No.10	PS001
EM002	Budi Sitombing	budi@gmail.com	L	085864927581	Jl. Sukun Raya No.25	PS003
EM003	Jennifer Tina	tina@gmail.com	P	089603471812	Jl. Pahlawan No.5	PS001

EM004	Lili Sari	lili@gmail.com	P	088385793136	Jl. Cendana No.8	PS002
EM005	Alexander Agus	agus@gmail.com	L	088273659814	Jl. Bunga No.12	PS001

table members

NIK	Name	Email	Gender	Address	Phone Number
3326162409040002	Citra Kirana	citra@gmail.com	P	Jl. Cinta No.45	088374628921
3525017006950028	Jasmine Neroli	jasmine@gmail.com	P	Jl. Melati No.9	083285716164
3525017006520020	Nico Parto	nico@gmail.com	L	Jl. Kenanga No.33	089675329117
3305040901072053	Teddy Widodo	teddy@gmail.com	L	Jl. Anggrek No.17	085782306818
3326161509700004	Beni Soeharti	beni@gmail.com	L	Jl. Raya No.56	0812345678919

table borrows

ID	Borrow Date	Return Date	Due Date	Fine	Member_NIK	Employee_ID
BR001	6 may 2024	20 may 2024	20 may 2024	NULL	3326162409040002	EM004
BR002	14 july 2024	29 july 2024	28 july 2024	5000,00	3525017006950028	EM001
BR003	22 September 2024	8 october 2024	6 october 2024	10000,00	3525017006520020	EM003
BR004	3 october 2024	20 october 2024	17 october 2024	15000,00	3305040901072053	EM002
BR005	2	NULL	16	NULL	3326161	EM005



	November 2024		November 2024		5097000 04	
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table books\_borrows

Book ID	Borrow ID
BK001	BR001
BK003	BR002
BK001	BR002
BK004	BR003
BK005	BR004
BK002	BR005

## DML

- Grandfather Wendy just realizes that book borrowing transactions can have thousands of amounts. So that the id format that had been defined before doesn't match. For that, change the datatype id in the borrows table from char to INT AUTO\_INCREMENT.  
hint : similar to number 3. For testing, insert again the previous records from table borrows similar to number 5 without id attribute values.
- Do an update for the return\_date column in customer borrow with details: NIK 3326161509700004 and today's date. You wont need a hint for this one, just use current\_date.
- After a couple of transactions, Grandfather Wendy received a report that two members have paid for the fine. Two of those members have NIK 3525017006520020 and 3305040901072053. Grandfather Wendy asks you to update the attribute fine value to NULL..
- On 3 November 2024, Beni Soeharti borrowed a book titled Complete Dictionary of Information Technology Terms. Beni was served by an employee named Alexander Agus. Beni was told that the due date is 14 days prior to the borrowing date. help the employee to insert the new data of Beni to the database (don't forget to update stock)
- Due to a troubled employee, Grandfather Wendy recruits his friend, an elderly male named Aspas Gata as a new employee. Aspas has an email [aspasgata@gmail.com](mailto:aspasgata@gmail.com) and phone number 0895323390308. Aspas' home is at Jl. Badut No.62.

11. Aspas Gata works diligently on instance. When he is checking the members data, he found a data error. Andi Gading turns out had a name Andi Haki. Besides that, the gender was also wrong. He was supposed to be male. After several deep checking again, there was also a typo in his phone number. The correct phone number is 081628492611. Update the correct data in the database!
12. One day, there was a complaint from a member namely, Jasmine Neroli. She said that she was frequently terrorized by an unidentified number. Because Jasmine was terrified and worried that her identity was leaked, she decided to end her membership in Grandfather Wendy's library. Please delete the user's data from the database. Also, after thorough investigation by Grandfather Wendy, it was Aspas Gata that terrorized Jasmine. Furious, Grandfather Wendy decided to fire Aspas Gata, he also asks you to delete Aspas Gata from the employee table.