

BINUS University

Academic Career: <i>Undergraduate / Master / Doctoral *)</i>		Class Program: <i>International/Regular/Smart Program/Global Class*)</i>	
<input checked="" type="checkbox"/> Mid Exam <input type="checkbox"/> Final Exam <input type="checkbox"/> Short Term Exam <input type="checkbox"/> Others Exam : _____		Term : Odd/Even/Short *)	
<input checked="" type="checkbox"/> Kemanggisan <input checked="" type="checkbox"/> Alam Sutera <input type="checkbox"/> Bekasi <input type="checkbox"/> Senayan <input type="checkbox"/> Bandung <input type="checkbox"/> Malang		Academic Year : 2021 / 2022	
Faculty / Dept. : School of Information Systems / Information Systems		Deadline	Day / Date : Rabu, 1 Desember 2021 Time : 17.00
Code - Course : ISYS6169001 - Database Systems		Class : All	
Lecturer : Team		Exam Type : Online	
*) <i>Strikethrough the unnecessary items</i>			
<i>The penalty for CHEATING is DROP OUT!!!</i>			

Ketentuan umum:

General Rules:

1. Mohon untuk membaca instruksi soal dibawah ini sebaik mungkin.
Please read the exam instruction carefully
2. Mohon tidak melakukan copy-paste (plagiarism). Tindakan Plagiarism = Mencontek.
Please do not copy-paste (plagiarism). Plagiarism = Cheating

Lihat poster dibawah ini:

Look at this poster below:

DO NOT COPY PASTE

PLEASE PUT THE REFERENCES

FORMS OF PLAGIARISM

1

COPYING

Characterized by: Taking anything from the original work word-for-word without reference

This can include: Complete sentences, paragraphs, chapters, or the entire work

2

MINOR ALTERATIONS

Characterized by: Copying the original work Changing a few words or their order to make it look different

3

PARAPHRASING WITHOUT CITING

Characterized by: Restating an author's words or ideas without giving credit to the original author

4

HOW TO AVOID PLAGIARISM?

- Take care with paraphrasing
- Cite your sources
- Make differences with your work and others clear

NEVER CLAIM SOMEONE ELSE'S WORK

- SCHOOL OF INFORMATION SYSTEMS -
BINUS UNIVERSITY

Source: <https://www.whoshostingthis.com/blog/2017/09/05/unintentional-plagiarism/>

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Richard, S.Kom., M.M. (D5053) and sent to Department/Program on Nov 3, 2021

3. Mohon perhatikan deadline waktu penyerahan jawaban ujian sesuai dengan jadwal di binusmaya.
Please pay attention to the deadline of exam answer submission according to Binusmaya
4. Mohon mengerjakan ujian ini secara **INDIVIDU**, bukan berkelompok.
*Please do this exam **INDIVIDUAL** not in GROUP*
5. Tidak ada dispensasi jika mengumpulkan jawaban melewati deadline (**TANGGAL dan WAKTU**) yang telah ditentukan di Binusmaya dengan alasan apapun. Mahasiswa diharapkan tidak mengumpulkan jawaban mendekati deadline
*There is no dispensation if you submit the answer over the deadline (**DATE and TIME**) specified in Binusmaya for any reason. Students are not expected to submit answers near the deadline.*
6. Setelah file jawaban di upload, mohon pastikan kembali dengan cara mendownload kembali jawabannya sesuai dengan matakuliahnya.
After the answer file is uploaded, please make sure it again by downloading the answer according to the course.
7. Setelah file jawaban diupload, mohon untuk melakukan **screenshot** layar hasil upload jawaban dan pastikan terdapat icon **waiting** ⌚
After the answer file has been uploaded, please take a screenshot of the uploaded answer screen and make sure there is a waiting icon ⌚

Learning Outcomes:

LO-1 : describe database systems, terminologies, environment, and new concepts of database

LO-2 : apply database languages and SQL Programming languages

LO-3 : design database using structured data model

Essay

Item

ItemCode	ItemName	Merk	Type	Price	Stock	Status
SF1516	Printer Laser	HP	137nfw	2355000	5	Ready Stock
PR1323	Monitor	Dell	SE2717h	2610000	2	Coming Stock
KS2524	Keyboard	Logitech	K120	130000	20	Ready Stock

Based on the table,

1. Please calculate the cardinality and the degree! (10%) (LO1)

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2. Please create a relational algebra to view the item which is priced more than 1,000,000!
(10%) (LO2)

LOAN FORM

BookId	Book Title	Edition	ISBN/ISSN	QTY	Audio Book	Loan
0000015262	Gigi Si Cici	1	9792024506	1	Available	Rp. 0
	Seri TokohTernama 9 : Alexander Graham Bell	1	9792024459	1	Available	Rp.0
Delivery Fee						Rp.10000
Total						Rp.10000

Jakarta, 10/21/2021

Aliya

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Return Form

Member Id	: G202163	Return Date	: 11/03/2021
Member Name	: Aleena	Return Day	: Wednesday
Member Address	: Sawi Street No.23 Jakarta, 14252	Operator Id	: OP13
Member DOB	: 12/29/2001	Operator Name	: Nania
		Member Type	: Gold

BookId	Book Title	Edition	ISBN/ISSN	QTY	Audio Book	Book Condition	Fine
0000015262	Gigi Si Cici	1	9792024506	1	Available	Good	Rp.2000
0000015253	Seri Tokoh Ternama 9 : Alexander Graham Bell	1	979202450	1	Available	Good	Rp.2000
Pick-up Fee							0
Total							Rp.4000

Jakarta, 11/03/2021

Nania**Member Profile**

Member Id : G202163
Id Card Numer : 3271098918237
Member Name : Aleena
Member DOB : 12/29/2001
Member Phone : 0817485767
Member Address : Sawi Street No.23 Jakarta,

Vis Library is a multi-categories book library that provides a wide range of genres from kids books to special braille books. The customers can read the books on-site or choose a delivery service. As a database designer, they want you to design and implement a database to support their business.

At the initial meeting to discuss the database design, the following requirements were gathered:

- A new customer is required to register the account, pick the membership type, and pay the necessary cost.
- The systems must be able to manage the detailed information of each member.

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- There are two membership types: silver dan gold. This membership is necessary to borrow books and read on the spot.
- Silver membership can be obtained by showing the id card and filling the registration form without any cost.
- On the other hand, Rp 20000 registration costs and Rp 10000 monthly costs are needed to get a gold membership.
- Gold member is entitled to special delivery and pick-up services from Vis Library to avoid a late book return
- The systems must be able to manage the detailed information of each book including its availability.
- Each member can borrow only two books in one transaction, and the borrowing period is 7 working days.
- There is an AudioBook version for some of the books. To distinguish the physical book from its Audio version, a different product_id format will be applied. The physical book will have 10-digits numbers, while the audio version id will be started by "AU" and followed by 3-digit numbers (e.g., AU241).
- Each late book return will be fined Rp 1000 per day, and the maximum fine is Rp. 20000.
- All book borrowing services in Vis Library will be handled by a registered and authorized operator.
- Book delivery and pick-up service will be scheduled by the operator and to be assigned to a courier.
- Several forms are required for the system. Three main important ones are:
 - Loan Form, capture all information related to a book borrowing transaction
 - Return Form, capture detailed information of all books return and the condition
 - Member Profile, capture detailed information of each member

Based on the form and explanation above,

1. Please create a set of third normal form relations. You must show all relations at each stage in the normalization process! (20%)(LO3)
2. Please create an appropriate ERD, including the relationship and multiplicity! (20%)(LO3)
3. Based on the ERD that you made, please create the entire table and the constraints (based on the explanation above)! (20%) (LO2)
4. Based on your table (in point 3), please change the constraint for physical book product_id with this format: started with "PBV" and followed by 4-digit numbers (e.g., PBV4252)! (10%)(LO2)
5. Please create a 3-minutes video to explain the normalization process (in point 1). Please include the link to your video in your answer sheet! (10%)

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