

**BINUS University**

<b>Academic Career:</b> <i>Undergraduate / <del>Master</del> / <del>Doctoral</del> *)</i>		<b>Class Program:</b> <i>International/Regular/Smart Program/Global Class*)</i>	
<input type="checkbox"/> Mid Exam <input checked="" type="checkbox"/> Final Exam <input type="checkbox"/> Short Term Exam <input type="checkbox"/> Others Exam : _____		<b>Term :</b> <del>Odd</del> /Even/ <del>Short</del> *)	
<input checked="" type="checkbox"/> Kemanggisan <input checked="" type="checkbox"/> Alam Sutera <input checked="" type="checkbox"/> Bekasi <input type="checkbox"/> Senayan <input type="checkbox"/> Bandung <input type="checkbox"/> Malang		<b>Academic Year :</b> <b>2021 / 2022</b>	
Faculty / Dept.		Deadline	Day / Date : Monday / 18 July 2022
:	School of Information Systems / Information Systems		Time : 17.00
Code - Course : ISYS6123 – Introduction to Database System ISYS6123003 – Introduction to Database System		Class : All	
Lecturer :	Team	Exam Type : Online	
*) <i>Strikethrough the unnecessary items</i>			
<b>The penalty for CHEATING is DROP OUT!!!</b>			

**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:*



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*Richard, S.Kom., M.M. (D5053) and sent to Department/Program on June 14, 2022*

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:**

LO1: (C2) Comprehension : describe concepts, terminologies, environment, and relational model in database system

LO2: (C3) Application : apply user role and right access to increase security in database system

LO3: (C3) Application : construct query of SQL that suitable with the problem

LO4: (C3) Application : design database using structured data model

LO5: (C2) Comprehension : recognize database technology concept

### **Essay (30%)**

1. (LO2 – Weight: 10%) Please explain the main function of maintaining database security? Mention the steps that can be taken to maintain database security?
2. (LO3 – Weight: 10%) Please explain the difference between Join and Union, and please explain using an example?
3. (LO5 – Weight: 10%) Please explain the characteristics of the data warehouse?

### **Case (70%)**

Metroland is a company that sells all kinds of children's toys. This company established in the early 2022, so the system of selling and purchasing goods is still done manually. Therefore, the founder of Metroland is looking for a database designer who can design and build applications that support the company's business processes.

Metroland's operational activities are selling various kinds of toys and purchasing from suppliers to be able to meet buyer requests. In supporting their operational activities, this company has several branches, each of branch has staff who serve and are responsible for record the transactions. The buyer who come to the store will choose the items to be purchased, after

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that the staff will record all the items purchased in the sales transaction. Customers data will be recorded as the shop members, so in the future there is a promo, the customer can be contacted easily. This sales transaction is supported by several types of payment types that make it easier for customers to pay the transaction.

In addition to the sales transactions, Metroland also do the purchase transactions to re-stock their goods, so they can fulfill the customer needs and also always up to date the types of toys. Staff will check the stock, check the trending models of the toys, contact the suppliers to create purchase order. This purchase transaction will be repeated periodically. After the purchased items are recorded, the manager will determine the sales price for each item sold to the customer.

4. (LO4 – Weight: 25%) Please create normalization process for the case, describe each stage of normalization (UNF – 3NF) to support the Sales and Purchase transaction, then make a combined normalization to be able to support the Sales and Purchase transaction in the company.
5. (LO4 – Weight: 15%) Please create ERD from the combined 3NF result and describe the multiplicity for each relation.
6. (LO3 – Weight: 10%) Please create a profitability report of sales transaction during the period Jan – Mar 2022. The report will show some require fields quantity of each sold toys type, purchase price, sales price, profit for each type, and the profitability percentage.
7. (LO3 – Weight: 10%) Please create a report using subquery to show items that have not sold during Jan – Mar 2022.
8. (LO3 – Weight: 10%) Please create a view to display customer data, where the data is used to give the promotion. This view displays the customer's name, and the customer's phone number.

**Please create a video up to 3 minutes to describe your CASE answers. Video must show your face and dress modestly. Upload a video on youtube or similar tool and write your video URL in your answer sheet.**

**Add Screenshot from SQL Server or other DBMS for question 6, 7, and 8.**

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