Project Case	
ISYS6169001 Database Systems	BINUS UNIVERSITY Software Laboratory Center
Information Systems	**E202-ISYS6169-LC00703-00**
Valid on *Even Semester Year 2021/2022*	**Revision 00**

1. Seluruh kelompok tidak diperkenankan untuk:
   The whole group is not allowed to:
   - Melihat sebagian atau seluruh proyek kelompok lain,
     Seeing a part or the whole project from other groups
   - Menyadur sebagian maupun seluruh proyek dari buku,
     Adapted a part or the whole project from the book
   - Mendownload sebagian maupun seluruh proyek dari internet,
     Downloading a part or the whole project from the internet,
   - Mengerjakan soal yang tidak sesuai dengan tema yang ada di soal proyek,
     Working with another theme which is not in accordance with the existing theme in the matter of the project,
   - Melakukan tindakan kecurangan lainnya,
     Committing other dishonest actions,
   - Secara sengaja maupun tidak sengaja melakukan segala tindakan kelalaian yang menyebabkan hasil karyanya berhasil dicontek oleh orang lain / kelompok lain.
     Accidentally or intentionally conduct any failure action that cause the results of the project was copied by someone else / other groups.

2. Jika kelompok terbukti melakukan tindakan seperti yang dijelaskan butir 1 di atas, maka **nilai kelompok** yang melakukan kecurangan (menyontek maupun dicontek) akan di – **NOL** – kan.
   If the group is proved to the actions described in point 1 above, the score of the group which committed dishonest acts (cheating or being cheated) will be "Zero"

3. Perhatikan jadwal pengumpulan proyek, segala jenis pengumpulan proyek di luar jadwal tidak dilayani.
   Pay attention to the submission schedule for the project, all kinds of submission outside the project schedule will not be accepted

4. Jangan lupa untuk melihat kriteria penilaian proyek yang ditempel di papan pengumuman, atau tanya asisten anda.
   Don't forget to look at the project assessment criteria that posted on the announcement board, or ask your teaching assistant.

5. Persentase penilaiaan untuk matakuliah ini adalah sebagai berikut:
   Marking percentage for this subject is described as follows:

Tugas Mandiri *Assignment*	**Proyek** *Project*	**UAP** *Final Exam*
30%	30%	40%

6. Software yang digunakan pada matakuliah ini adalah sebagai berikut:
   Software will be used in this subject are described as follows:

Software *Software*
SQL Server Management Studio 18.5.1 SQL Server Developer 2019 Microsoft Office 365 Visual Paradigm Community Edition 16.1

7. Ekstensi file yang harus disertakan dalam pengumpulan tugas mandiri dan proyek untuk matakuliah ini adalah sebagai berikut:
   File extensions should be included in assignment and project collection for this subject are described as follows:

Tugas Mandiri *Assignment*	**Proyek** *Project*	**UAP** *Final Exam*
-	SQL, VPP, Image Files (JPG / PNG)	SQL

Soal
Case

Saravia Pen

Saravia Pen is a top pen brand in Indonesia. **Saravia Pen** manages transactions like **sales transaction** and **purchase transaction**. **Sales transaction** is the transaction that happened when customer wants to buy a pen which will be handled by a staff. **Purchase transaction** is a transaction that happened when staff wants to purchase some materials of pen from a vendor.

Every **customer** who wants to purchase pen(s) in **Saravia Pen** must be following the **sales transaction** procedures, which are:

- **Customer** who wants to buy a pen must has complete personal information like name, gender, date of birth, phone number, and address. Every customer has an identification code with the following format:

"CTRXXX" X => number between 0 – 9

- Every **sales transaction** made by the customer have all the information about the customer, the staff, the transaction date, payment type, the pen(s) purchased, and the quantity of each pen. Each **sales transaction** has an identification code with the following format:

"SLTXXX" X => number between 0 – 9

- **Customer** can buy **more than one** pen(s).
- Every **staff** who works in **Saravia Pen** has a complete personal information like name, gender, date of birth, phone number, address, salary, and an identification code with the following format:

"STFXXX" X => number between 0 – 9

- Every **pen** has information like name, price, stock, and an identification code with the following format:

"PENXXX" X => number between 0 – 9

- **Pens** can have **one or more** pen material(s).

- Every **pen material** has information like name, price, stock and an identification number with the following format:

"PMLXXX" X => number between 0 – 9

Every **staff** who wants to purchase some pen materials needed must be following the **purchase transaction** procedures, which are:

- Every **purchase transaction** made by the staff have all the information about the staff, the vendor, the transaction date, payment type, the pen material(s) purchased, and the quantity of each pen material. Each **purchase transaction** has an identification code with the following format:

"PCTXXX" X => number between 0 – 9

- **Staff** can buy **more than one** pen material(s).
- Each **vendor** has complete personal information like name, address, phone number, email, and an identification code with the following format:

"VDRXXX" X => number between 0 – 9

Notes:

- Length of customer phone must be equal to 12 digits.
- Staff name must be greater or equal to 3 characters.
- Staff gender can only be filled with 'Male' or 'Female' (without quote).
- Pen name must end with ' Pen' (without quote).
- Pen Price must be between 10000 and 50000.
- Vendor email must contain '@' symbol (without quote).
- Pen material stock must be greater or equal to 100.
- The year of the sales transaction date must be in 2020.

Now **Saravia Pen** still using manual management system to maintain the **sales transactions** and **purchase transactions**. You as database administrator in **Saravia Pen** asked to create a database system that can store data and maintain the **sales transactions** and **purchase transactions**. The tasks that you must do are:

a. Create **Entity Relationship Diagram** to maintain **sales transactions** and **purchase transactions.**
b. Create a database system using **DDL** syntax that relevant with **sales transaction** and **purchase transactions** procedures. The database system must include **primary key** and **foreign key** with suitable relationship.
c. Create query using **DML** syntax to fill the tables in database systems with data based on the following conditions:
    - **Master** table must be filled with more than or equals 10 data.
    - **Transaction** table must be filled with more than or equals 15 data.
    - **Transaction detail** table must be filled with more than or equals 25 data.
d. Create **insert queries** using DML syntax to **simulate** how the data inserted to the database if there is a new transaction with **more than one product** for **sales transaction** and if there is a new transaction with more than one material for **purchase transaction.**

   Note: DML syntax to **fill** the **tables** in database and DML syntax to **simulate** the **transactions** process should be a **different query**.
e. To support database management process in **Saravia Pen**, as database administrator, you need to provide some query that resulting important data. The requirements that asked from the manager are:
    1. Display CustomerId, CustomerName, SalesTransactionDate, and Sales Transaction Quantity (obtained from the sum of quantity) for every sales transaction which the transaction happened on the 25th day and the id of the pen is ‘PEN009’.

    2. Display PenId, PenName, and Total of Pen Material (obtained from the count of pen material purchased) for every pen which has name starts with ‘Milky’ and the Total of Pen Material is more than 6.

    3. Display CustomerName, Sales Transaction Date (obtained from sales transaction date in ‘yyyy.mm.dd’), Total Pen Type (obtained from the count of pen purchased), and Total

Quantity (obtained from the sum of quantity) for every sales transaction which the transaction happened on the 9th month and the Total Quantity is more than 10.

4. Display StaffName, Staff Gender (obtained from the first letter of staff's gender), CustomerName, and Total Sales Transaction (obtained from the count of the sales transaction) for every sales transaction that happened on an even day and the sum of quantity is lower or equal to 10.

5. Display CustomerName (obtained from customer name in uppercase format), CustomerGender, and SalesTransactionId for every sales transaction that happened on the 22th and the quantity is greater than the average quantity of all sales transaction. The result query doesn't have duplicate rows.
   (alias subquery)

6. Display VendorName, PurchaseDate (obtained from purchases date in 'Mon dd, yyyy' format), and MaterialName (obtained from the material of pen name in lowercase format) for every purchase transaction with a pen material price is greater than the average price of all materials and the vendor's name ends with ' Industry'.
   (alias subquery)

7. Display Total Purchase Transaction (obtained from count of purchase transactions and ended with ' Transaction(s)'), VendorName, Staff Name (obtained from staff's name from the first character until a character before space), and PurchaseTransactionDate for every purchase transaction with the quantity is lower than the average quantity of all purchase transaction and the purchase transaction happened on Sunday.
   (alias subquery)

8. Display VendorName, Transaction Date (obtained from purchases date in 'dd mon yyyy' format), PenMaterialName, and Material Number (obtained from PenMaterialId by replacing the first three characters with 'PM') for every purchase transaction with the pen material stock is greater than the average of all pen material stock and the total price

(obtained from the sum of transaction quantity multiplied with pen material price) is greater than 500000. Sort the result by vendor name in descending order.
(alias subquery)

9. Create a view named '**ViewSalesTransaction**' to display StaffName, CustomerName, Total Sales Transaction (obtained from the count of sales transaction), and Maximum Sales (obtained from the maximum of quantity) for every sales transaction made by a customer whose name contains 'c' and the Total Sales Transaction is greater than 2.

10. Create a view named '**ViewPurchaseDetail**' to display VendorName, Total Purchase Quantity (obtained from the sum of quantity), and Total Purchase Transaction (obtained from the count of purchase transaction) for every staff whose gender is male, and the Total Purchase Transaction is greater than 1.

File that must be collected:

1. Entity Relationship Diagram (.vsdx, .png)
2. Query to create the database system. (.sql)
3. Query to insert data into tables. (.sql)
4. Query to simulate the transactions processes. (.sql)
5. Query to answer the 10 cases. (.sql)

Here are the rules that you must follow to create your project:

1. Use appropriate software for this subject based on **Sistem Praktikum** that can be downloaded from Binusmaya.
2. Use the techniques taught during practicum.
3. Collect appropriate files for this subject based on **Sistem Praktikum** that can be downloaded from Binusmaya.
4. Include the other files that can support your project, such as:
   - All files in your project
   - Other files (image, audio, video, etc.) used in your project
   - *.DOC file (documentation of your project) that contains the reference links of additional files (image, audio, video, etc.) used in your project