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| **Project Case** |  |
| ISYS6169 | ISYS6169001 | ISYS6169016 | ISYS6169049 | ISYS6123003  Database Systems | Introduction to Database System |
| **Information Systems** | **E222-ISYS6169016-AT01-00** |
| ***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 another 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.*

1. 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”*

1. 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*

1. Bila Anda tidak membaca peraturan ini, maka Anda dianggap telah membaca dan menyetujuinya

*If you have missed to read these regulations, so you are considered to have read and agreed on it*

1. 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% | 40% | 30% |

1. Software yang digunakan pada matakuliah ini adalah sebagai berikut:

*Software will be used in this subject are described as follows:*

|  |
| --- |
| **Software**  *Software* |
| Microsoft Office 365  SQL Server Developer 2019  SQL Server Management Studio 18.9.1  Visual Paradigm Community Edition 16.3 |

## Ekstensi file yang harus disertakan dalam pengumpulan tugas mandiri untuk matakuliah ini adalah sebagai berikut:

*File extensions should be included in assignment collection for this subject are described as follows:*

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

Soal

*Case*

**PAinT Shop**

**PAinT Shop** is a paint shop managed by your friend. They manage all of activities that belongs to **PAinT Shop** like **selling paint to customers** and **purchasing paint with vendors**.

Every staff that is hired by **PAinT Shop** have a task to **serve a customer who wants to buy a paint** and **purchase paint from vendor**. Every staff must be following the procedures to become a staff, which are:

* Every staff hired must have a personal information like name, gender, address, date of birth, and salary. Every staff has an identification number with the following format:

“STXXX”

X => number between 0 – 9

* Every staff has its own position data and the position data has an identification id with the following format:

“SPXXX”

X => number between 0 – 9

* Staff can purchase a paint with a vendor.
* Every **purchase transaction** made with the vendor have all the information about staff, vendor, transaction date, paints purchased, and the quantity of each paint. Every **purchase transaction** has an identification number with the following format:

“PRXXX”

X => number between 0 – 9

* Every paint purchased from vendor have its stock, color, and price. Every **paint** has an identification number with the following format:

“PAXXX”

X => number between 0 – 9

* Every **color** from a paint has its own name. Every **color** has an identification number with the following format:

“COXXX”

X => number between 0 – 9

* Staff can also serve a customer who wants to buy a paint.
* Every **sales transaction** made by the customer have all the information about staff, customer, transaction date, paint sold, and the quantity of each paint. Every **sales transaction** has an identification number with the following format:

“SAXXX”

X => number between 0 – 9

Every customer that wants to buy paint at **PAinT Shop** must be following the **sales transaction procedures**, those are:

* Every customer that wants to purchase a product must already completed personal information like name, phone number, address, gender, and date of birth. Every customer has an identification number with the following format:

“CUXXX”

X => number between 0 – 9

* Customer can purchase **more than one product** in every transaction.

Every vendor that wants to sell their paint must be following the **purchase transaction procedures**, those are:

* Every vendor that wants to sell their paint must already completed personal information like name, and address. Every supplier has an identification number with the following format:

“VEXXX”

X => number between 0 – 9

* Vendor can sell **more than one paint** in every transaction.

**Notes:**

* Customer gender must be either “Male” or “Female” (without quote).
* Vendor name must be more than 2 characters.
* Color name must be more than 2 characters.
* Staff Position Name must be more than 2 characters.
* Staff name must be more than 2 characters.
* Staff Salary must be between 1000000 and 20000000.
* Staff gender must be either “Male” or “Female” (without quote).
* Purchase Transaction must occur in 2021.
* Sales Transaction must occur in 2021.

Now **PAinT Shop** still using manual management system to maintain the **sales** and **purchase transactions**. You as her precious friend wants to help **PAinT Shop** to create a database system that can store data and maintain the **sales** and **purchase transactions**. The tasks that you must do are:

1. Create Entity Relationship Diagram to maintain **sales** and **purchase transactions**.
2. Create a database system using DDL syntax that relevant with **sales** and **purchase transactions**.
3. 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.

1. Create query using DML syntax to simulate the transactions process for **sales** and **purchase transactions**.

**Note**: DML syntax to **fill database** and DML syntax to **simulate** the **transactions process** should be a **different query**.

1. To support database management process in **PAinT Shop**, they asked you to provide some query that resulting important data. The requirements that asked from her are:
2. Display StaffID, Staff Name (Obtained From StaffName in uppercase), StaffSalary, and Total Paint Purchased (Obtained from the sum of quantity) for every staff without 'e' in their name, and salary above 5000000.
3. Display CustomerID, CustomerName, and Total Paint Purchased (Obtained from the sum of quantity) for every male customer with odd ID.
4. SELECT CustomerID, Customer First Name (Obtained From the First name of CustomerName), Total Transactions (Obtained By counting the number of transaction), and Average Paints Purchased (Obtained from the average of quantity) for every female customer with DOB within the first semester of the year.
5. Display Vendor Name (Obtained From VendorName By Removing 'PT. '), Total Transactions (Obtained By Counting the number of transactions), and Total Paint Sold (Obtained from the sum of quantity) for every vendor that has 'PT' in VendorName and has a name less than or equals 15 characters.
6. DISPLAY CustomerName, Customer Phone (Obtained By Replacing First Character of CustomerPhone with '+62'), Transaction Date (Obtained From TransactionDate in 'dd mon yyyy' format), and Paint Price (Obtained by adding 'Rp. ' ) for every paint that has price above 100000 with quantity equals the maximum quantity of a paint being sold in a single transaction.

(**alias subquery**)

1. Display ID (Obtained from the last 3 characters of PaintID), Color (Obtained from ColorName in lowercase), Stock (Obtained by adding 'pcs' after PaintStock) for every paint that has average quantity sold more than average quantity of all paint sold for all transactions and has stock above 1000.

(**alias subquery**)

1. Display StaffID, Staff Name (Obtained From StaffName in lowercase),Staff Date of Birth (Obtained from StaffDOB in 'dd mm yyyy' format), Staff Position (Obtained from StaffPositionName in uppercase), Staff Salary (Obtained by adding 'Rp. ' before StaffSalary), Total Paint Sold (Obtained from the sum of quantity) for every staff with average quantity sold more than average of all quantity sold by all staffs and has salary above or equals 10000000.

(**alias subquery**)

1. Display VendorID, VendorName, Vendor Address (Obtained By Adding 'Jl. ' before Vendor address without ' Street') for every vendor that has done a number of transactions more than any vendor and has odd id.

(**alias subquery**)

1. Create a view named 'VendorViewer' to display VendorName, VendorAddress, Total Transactions (Obtained by counting the number of purchase), Total Paints Purchased (Obtained From the sum of quantity) for every vendor with 'Pt. ' in VendorName and transactions that occurs in the last 6 month of the year.
2. Create a view named CustomerViewer to display CustomerNme, CustomerDOB, Average Spending (Obtained From the sum of quantity multiplied by paintprice divided by the number of transactions), Total Spending (Obtained From the sum of quantity multiplied by paintprice) for every male customer and has a name more than 20 characters.

**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