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| **Project Case** |  |
| ISYS6169 | ISYS6279 | ISYS6280 | T0206  Database Systems |
| **Information Systems** | **E212-ISYS6169-KK01-00** |
| ***Valid on*** *Odd Semester Year 2020/2021* | **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.*

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. 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.*

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% | 30% | 40% |

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

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

|  |
| --- |
| **Software**  *Software* |
| Microsoft SQL Server Enterprise 2016  Microsoft Office 365 (Word, Excel)  Microsoft Office Visio 2013 |

## 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* |
| - | VSD / VSDX, Image Files (JPG / PNG), SQL |

## Soal

*Case*

**Sushi KKei**

**Sushi KKei** is a famous sushi restaurant in Jakarta. The CEO of **Sushi KKei** manage all of activities that belongs to **Sushi KKei** like **selling various foods** and **purchasing ingredients with distributor**.

Every staff that work at **Sushi KKei** have a task to **serve a customer who wants to buy a food** and **purchase an ingredient from distributor**. 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, phone number, and salary. Every **staff** has an identification number with the following format:

“STXXX”

X => number between 0 – 9

* Staff can purchase an ingredient with a distributor.
* Every ingredient purchased from distributor have its own name and price. Every **ingredient** has an identification number with the following format:

“IGXXX”

X => number between 0 – 9

* Everyfood sold by **Sushi KKei** have its own name and price. Every **food** has an identification number with the following format:

“FOXXX”

X => number between 0 – 9

* Each food has a **recipe** consisting of several ingredients. A food can **have more than one** ingredient in the recipe and an ingredient can **belongs to more than one** food in the recipe.
* Every distributor who wants to sell their ingredient must already completed personal information like name, address, and phone. Every **distributor** has an identification number with the following format:

“DSXXX”

X => number between 0 – 9

* Every customer who wants to buy foods must already completed personal information like name, gender, address, and phone. Every **customer** has an identification number with the following format:

“CSXXX”

X => number between 0 – 9

Every customer that wants to buy foods at **Sushi KKei** must be following the **sales transaction procedures**, those are:

* Every **sales transaction** made by the customer have all the information about staff, customer, transaction date, food sold, and the quantity of each food. Every **sales transaction** has an identification number with the following format:

“SAXXX”

X => number between 0 – 9

* Customer can purchase **more than one food** in every sales transaction.

Every distributor who wants to sell their ingredient must be following the **purchase transaction procedures**, those are:

* Every **purchase transaction** made with the distributor have all the information about staff, distributor, transaction date, ingredients purchased, and the quantity of each ingredient. Every **purchase transaction** has an identification number with the following format:

“PUXXX”

X => number between 0 – 9

* Distributor can sell **more than one ingredient** in every transaction.

**Notes:**

* Staff gender must be either “Male” or “Female” (without quote).
* Customer gender must be either “Male” or “Female” (without quote).
* Ingredient name must be more than 3 characters length.
* Ingredient Price must be between 1000 and 100000.
* Food name must be more than 3 characters length.
* Food Price must be between 10000 and 1000000.
* Purchase Transaction Date must be after “2019-01-01” or on “2019-01-01”.
* Sales Transaction Date must be after or “2019-01-01” on “2019-01-01”.

Now **Sushi KKei** still using manual management system to maintain the **sales** and **purchase transactions**. You as the person who hired by the CEO of Sushi **KKei** asked 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 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** and **purchase** **transactions**.

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

1. To support database management process in **Sushi KKei**,The CEO of **Sushi KKei** asked you to provide some query that resulting important data. The requirements that asked from her are:
2. Display CustomerName, and Total Item Sold (obtained from the sum of quantity) for each customer which sales transaction month happen on ‘Desember’ and Total Item Sold is more than 5.
3. Display IngredientName, PurchaseDate, and Total Cost (obtained from the sum of IngredientPrice multiplied by the quantity) for each purchase transaction which happen on ‘March’ and the Total Cost is greater than 10000.
4. Display FoodName, Food Price (obtained by adding ‘Rp. ’ before FoodPrice), Total Food Sold (obtained from the sum of quantity sold), and Total Transaction (obtained from total of different sales transaction) for every food which price is between 15000 and 30000 and total transcation is more than 2.
5. Display StaffName, Staff Gender (obtained from the first character of StaffGender), Total Food Sold (obtained from the sum of quantity sold), Total Food Variant (obtained from total food variant sold), and Transaction Date (obtained from SalesDate in ‘Mon dd, yyyy’ format) for every staff whose gender is male and Total Food Sold is more than 10.
6. Display StaffName, Staff Salary (obtained by adding ‘Rp. ’ before StaffSalary), Transaction Date ( obtained from SalesDate with ‘dd mon yyyy’ format), and CustomerName for every staff whose salary is more than average of all staff salary and sales transaction happen on the first quarter.

(**alias subquery**)

1. Display First Customer Name (obtained from the first word of customer name), Customer Address, FoodName, SalesDate for every food which price is higher than the average of all food price and food name must be at least two words.

(**alias subquery**)

1. Display StaffName, Staff Phone Number (obtained from replacing the first character to ‘+62’ on StaffPhone) , Most Quantity Bought (obtained from the highest quantity followed by ‘ food(s)’), and Least Quantity Bought (obtained from the lowest quantity followed by ‘ food(s)’) for every staff whose salary is the highest of all staff salary and Most Quantity Bought is less than 10. Sort the result by StaffName in ascending order.

(**alias subquery**)

1. Display Distributor Number (obtained by replacing ‘DS’ to ‘Distributor No, ’ on DistributorId), Distributor Name (obtained from the first word of the DistributorName), and Ingredient Purchased (obtained from the sum of quantity purchased) for every distributor whose ingredient quantity bought is more than the average of all the ingredient quantity bought and the Ingredient Purchased is more than 10.

(**alias subquery**)

1. Create a view named ‘**IngredientCost’** to display IngredientName, Total Cost (obtained from the sum of quantity multiplied by IngredientPrice), and Total Transaction (obtained from the total of the transaction) for every purchase transaction which transaction month difference with ‘2019-01-01’ is less than 2 and Total Cost is more than 100000.
2. Create a view named ‘**CustomerFavoriteMenu’** to display CustomerName, CustomerPhone, Total Food (obtained from the sum of food Quantity), and Sales Transaction (obtained from the total of different sales transaction) for every customer whose name is more than one word and Sales transaction is more than once.

**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