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| --- | --- |
| **Project Case** |  |
| ISYS6084 | ISYS6123 | ISYS6123003 | ISYS6169 | ISYS6169001  Database | Introduction to Database Systems | Database Systems |
| **Information Systems** | **E222-ISYS6123003-ES04-00** |
| ***Valid on*** *Even Semester Year 2021/2022* | **Revision 00** |

1. Seluruh kelompok tidak diperkenankan untuk:

*The whole group is not allowed to:*

* + 1. Melihat sebagian atau seluruh proyek kelompok lain,

*Seeing a part or the whole project from another groups*

* + 1. Menyadur sebagian maupun seluruh proyek dari buku,

*Adapted a part or the whole project from the book*

* + 1. Mendownload sebagian maupun seluruh proyek dari internet,

*Downloading a part or the whole project from the internet,*

* + 1. 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,*

* + 1. Melakukan tindakan kecurangan lainnya,

*Committing other dishonest actions,*

* + 1. 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* |
| 40% | 60% |

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 dan proyek untuk matakuliah ini adalah sebagai berikut:

*File extensions should be included in assignment, project, and final exam collection for this subject are described as follows:*

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

## Soal

*Case*

**Baki Meal Prep**

**Baki Meal Prep** is a shop run by your friend, Elijah. As the name implies, this shop sells Meal Prep which is an alternative for lunch or healthy food that can be stored in the refrigerator for a certain period. Elijah manages all activities in **Baki Meal Prep** such as **selling meal prep to customers** and **purchasing meal prep stock from the regional branch**.

Every staff that hired by **Baki Meal Prep** has a task to **serve a customer who wants to buy a meal prep** and **purchase a meal prep from the regional branch**. Every staff must be following the procedures to become a staff, which are:

* Every staff hired must have personal information like **name, address, gender, email, phone, salary**. Every staff has an **identification number** with the following format:

“STXXX”

X => number between 0 – 9

* Staff can purchase a meal prep with a regional branch.
* Every **purchase transaction** made with the regional branch has all the information about **staff, regional branch, purchase date, meal prep purchased,** and the **quantity** of each meal prep. Every **purchase transaction** has an identification number with the following format:

“PCXXX”

X => number between 0 – 9

* Every **meal prep** purchased from the regional branch has its **name**, **expiry date**, **sales price**, **purchase price**, and **stock**. Every **meal prep** has an identification number with the following format:

“PMXXX”

X => number between 0 – 9

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

“SSXXX”

X => number between 0 – 9

Every customer that wants to buy Meal Prep at **Baki Meal Prep** must be following the **sales transaction procedures**, those are:

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

“CSXXX”

X => number between 0 – 9

* Customer can purchase **more than one meal prep** in every transaction.

Every regional branch that wants to sell their meal prep must be following the **purchase transaction procedures**, those are:

* Every regional branch that wants to sell their meal prep must already complete personal information like **name, email, phone,** and **address**. Every regional branch has an identification number with the following format:

“RBXXX”

X => number between 0 – 9

* Regional branch can sell **more than one meal prep** in every transaction.

**Constraints:**

* Staff name must be more than 3 characters.
* Staff gender must be either “Male” or “Female” (without quote).
* Staff email must be contained ‘@’ (without quote).
* Staff phone length must equal 13 characters.
* Regional branch name must be more than 5 characters.
* Regional branch email must be contained ‘@’ (without quote).
* Regional branch phone length must equal 13 characters.
* Meal prep expiry date must be more than equals 2021.
* Meal prep sales price must be more than 50000.
* Meal prep stock must be more than 0.
* Customer name must be more than 5 characters.
* Customer gender must be either “Male” or “Female” (without quote).
* Customer phone length must equal 13 characters.
* Customer email must be contained ‘@’ (without quote).

Now **Baki Meal Prep** still using a manual management system to maintain the **sales** and **purchase transactions**. You as her precious friend want to help **Baki Meal Prep** 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 is relevant to **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 the database management process in **Baki Meal Prep**,Elijah asked you to provide some queries that resulting important data. The requirements that asked from her are:
2. Display RegionalBranchName, PurchaseDate, Total Item Purchase (obtained from the sum of meal prep quantity) for every purchase date is before the 20th day of the month and the regional branch’s name contains “Tangerang” in their name.
3. Display StaffName, SalesDate (obtained from sales date in ‘dd mon yyyy’ format), and Total Sales (obtained from the total number of different prep meal sold in one transaction) for every staff salary is less than 5000000 and sales occurred in October or November.
4. Display StaffName, Average Purchase Quantity (obtained from average purchase quantity), Total Meal Supplied (obtain by adding ‘ Meal’ at the end of the sum of purchased meal quantity), for every transaction handled by staff whose gender is female and total Meal Prep purchased less than 8.
5. Display RegionalBranchName, Total Purchase (obtained from the total number of different prep meal purchased in one transaction), and Average Purchase Price (obtained from the average of Meal Prep’s purchase price and started with ‘Rp. ’) for every region branch name length is more than 15 characters and contain three words.
6. Display RegionalBranchAddress, BranchPhone (obtained by replacing branch phone first character into ‘+62’), PurchaseDate, StaffName, and Quantity (obtain by adding ‘ pcs’ at the end of total purchase quantity) for every transaction that quantity is greater than the average of all purchase quantity and the transaction occurred in September or December.

(**alias subquery**)

1. Display Customer ID (obtained by replacing ‘CS’ with ‘Customer ’), Handle by (obtained by replacing ‘ST00’ into ‘Staff ’), Total Meal Prep Sales Price (obtained from the total of sales price times quantity and adding ‘Rp. ’ in front of Total Meal Prep Sales Price), MealPrepName, and Quantity for every transaction where the sales price is the highest and quantity more than 2.

(**alias subquery**)

1. Display Last Name (obtained from staff’s last name), Total Purchase Has been done (obtained from the total number of the different meal prep purchased in one transaction), and StaffSalary for every transaction handled by female staff that has salary less than the average of all staff salary.

(**alias subquery**)

1. Display Staff Initial (obtained from the first character of staff’s name and last character of staff’s name in uppercase format), CustomerID, Total Sales (obtained from the total number of meal prep sold in transaction), SalesDate for every transaction that quantity is the smallest and happened on month 9.

(**alias subquery**)

1. Create a view named ‘**ViewPurchaseTransaction**’ to display StaffEmail, Purchase Date, Total Purchase Meal Prep (obtained from the sum of quantity), and Total Purchase Transaction (obtained from the total number of meal prep purchased in one transaction) for every staff whose email contains ‘@gmail’ or ‘@hotmail’ and total purchase Meal Prep more than 50.
2. Create a view named ‘**ViewSalesTransaction**’ to display StaffName, Sales Date (obtained from sales date in ‘Mon dd, yyyy’ format), Total Sales Transaction (obtained from the total number of meal prep sold in one transaction), Total Sales Quantity (obtained from the sum of quantity) for every transaction that meal prep’s sales price is less than 450000 and total sales transaction is greater than 1.

**File that must be collected**:

1. Entity Relationship Diagram (.vpp, .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