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| **Project Case** |  |
| ISYS6123 | ISYS6123003  Introduction to Database Systems |
| **Information Systems** | **E242-ISYS6123-MF05-00** |
| ***Valid on*** *Even Semester Year 2023/2024* | **Revision 00** |

1. Kelompok tidak diperkenankan untuk:

*Members of the group are prohibited from:*

* + - Melihat sebagian atau seluruh jawaban kelompok lain,

*Seeing a part or the whole answer from other groups,*

* + - Menyadur sebagian atau seluruh jawaban dari buku, catatan, video, dan jenis referensi lainnya,

*Retell a part or the whole answer from books, notes, videos, and other references,*

* + - Menyadur sebagian atau seluruh jawaban dari internet,

*Retell a part or the whole answer from the internet,*

* + - Mengumpulkan jawaban yang tidak sesuai dengan tema soal,

*Submitting an answer with a different theme from the given case,*

* + - Melakukan tindakan yang menyebabkan jawaban dicontek oleh orang lain atau kelompok lain, baik disengaja maupun tidak disengaja,

*Doing action that could result the answer being copied by someone or other groups, intentionally or unintentionally,*

* + - Melakukan tindakan kecurangan lainnya.

*Committing other dishonest actions.*

1. Jika kelompok terbukti melakukan tindakan seperti yang dicantumkan pada butir ke-1, maka nilai mahasiswa dan/atau kelompok yang melakukan kecurangan, baik menyontek atau dicontek, akan dinolkan sesuai dengan peraturan yang berlaku.

*If it has been proven that a group has committed dishonest actions outlined in point 1 above, the whole groups related to the incident, regardless of which one copies or has their answer copied, will be issued a score of zero according to the regulation.*

1. Jawaban yang dapat diterima dan dinilai adalah jawaban yang dikumpulkan sebelum batas waktu yang telah ditentukan.

*The answer must be submitted before the designated deadline to be accepted and graded,*

1. Jawaban akan dinilai berdasarkan teknik atau metode yang diajarkan pada kelas praktikum dengan menggunakan software yang sudah ditentukan.

*The scoring will be based on the materials taught during the practicum classes using the designated software. Using different software than requested may result in your answer not being graded.*

1. Jika Anda tidak membaca peraturan ini, maka Anda dianggap sudah membaca dan menyetujuinya.

*By taking this exam, you agree to these regulations, regardless of whether you have read it or not.*

1. Persentase penilaian untuk matakuliah ini adalah sebagai berikut:

*The score will be distributed as follows:*

|  |  |  |
| --- | --- | --- |
| **Tugas Mandiri**  *Assignment* | **Proyek**  *Project* | **UAP**  *Final Exam* |
| 40% | 60% | - |

1. Perangkat lunak yang digunakan pada matakuliah ini adalah sebagai berikut:

*This course uses the following software:*

|  |
| --- |
| **Software**  *Software* |
| Microsoft Office 365  SQL Server Developer 2019  SQL Server Management Studio 18.9.1  Visual Paradigm Community Edition 17.1 |

1. Ekstensi file yang harus dikumpulkan untuk matakuliah ini adalah sebagai berikut:

*Your answers must be in the following file extensions:*

|  |  |  |
| --- | --- | --- |
| **Tugas Mandiri**  *Assignment* | **Proyek**  *Project* | **UAP**  *Final Exam* |
| SQL | SQL, VPP, Image Files | - |

1. File yang harus dikumpulkan adalah keseluruhan jawaban beserta dengan aset yang digunakan (gambar, audio, video, dll) dan dokumentasi proyek yang berisikan link referensi aset dan penjelasan mengenai aplikasi yang dibuat (terlampir bersama dengan soal).

*Include 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 all pages in your project, reference links of additional files (image, audio, video, etc.) used in your project, the description about how to use your application, etc.*

## Soal

*Case*

**CineMoFie**

**cineMoFie** is a cinema concept that offers a complete movie-watching experience by **selling movie tickets, beverages, and food** within its premises. Similar to a traditional cinema, **cineMoFie** presents a variety of films across different genres for its visitors to enjoy. Additionally, **they provide a selection of beverages and food options** to enhance the comfort and satisfaction of the movie-watching experience for its patrons. This concept combines film entertainment with easy access to food and beverages, creating a more **comprehensive and enjoyable movie-watching experience for its audience**.

Every **staffs** that hired by **cineMoFie** have a task to **serve a customer who wants to buy a ticket movie, food, and beverage** also **purchase food and beverage from supplier**. Every **staff** must be following the **procedures** to become a staff, which are:

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

**STXXX**

**X**àNumber between 0 - 9

* Staff can **purchase one or many food and drink** with a vendor
* Every **purchase** made with the vendor have all **information** about staff, supplier, purchase date, food, drink, and the quantity of each food, and quantity of each drink. Every purchase have an **identification number** with the following format:

**PUXXX**

**X**àNumber between 0 - 9

* Every **food** purchased from supplier have its own **information** like name, category, and price. Every food has an **identification number** with the following format:

**FOXXX**

**X**àNumber between 0 - 9

* Every **drink** purchased from supplier have its own **information** like name, category, and price. Every drink has an **identification number** with the following format:

**DRXXX**

**X**àNumber between 0 - 9

* Staff can also serve a **customer** who want to **buy one or many ticket, food, or drink**.
* Every **transaction** made by the customer have all **information** about staff, customer, transaction date, ticket sold, food sold, drink sold, and the quantity of each ticket, food, and drink. Every transaction has an **identification number** with the following format:

**TRXXX**

**X**àNumber between 0 - 9

Every **customer** that wants to **buy ticket, food, and drink** at **cineMoFie** must be following the **transaction procedures**, those are:

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

**CUXXX**

**X**àNumber between 0 - 9

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

Every **vendor** that want to **sell their laptop** must be following the **purchase procedures**, those are:

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

**SUXXX**

**X**àNumber between 0 - 9

* **Supplier** can **sell more than one product** in every transaction**.**

Here are some of the **constraint** requested by the **cineMoFie.**

* **Staff gender** must be **either “Male” or “Female”** (without quote).
* **Staff date of birth** must be **higher than 17 years old**.
* **Customer gender** must be **either “Male” or “Female”** (without quote).
* **Food category** must be **either “Pasta” or “Salad” or “Sandwich” or “Snack” or “Fried”** (without quote).
* **Drink category** must be **either “Soft Drink” or “Tea” or “Coffee” or “Milk” or “Herbal”** (without quote).
* **Movie category** must be **either “U” or “PG” or “PG-13” or “R” or “NC-17”** (without quote).
* **Movie rating** must be **between 1 and 5**
* All data must **not be** **null**

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

* Create **Entity Relationship Diagram** to maintain transaction and purchase.
* Create a database system using **DDL syntax** that relevant with transaction and purchase.
* 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.**
* For the **food** table, the **food category** must be filled with the following data:
* Create query using DML syntax to **simulate the transaction process** for transaction and purchase. DML syntax to fill database and DML syntax to simulate the transactions process should be a **different query**.
* To support database management process in **cineMoFie**, Jack asked you to provide some **query** that resulting important data. The requirements that asked from him are:

1. Display Staffs (Obtained from StaffName in uppercase), PurchaseDate, and Total Food Purchase

(Obtained from counting all the Transaction) for every Purchase made by male staff and happenned in 2019.

1. Display PurchaseID, Supplier Name (Obtained from SupplierName in lowercase), and Total Drink Purchase (Obtained from total sum of DrinkQuantity) for every Total Drink Purchase that less than 5 and PurchaseID is even number.
2. Display Transaction Date (Obtained from Converting the TransactionDate format to 'Mon dd. yyyy' example 'Oct 01. 2000'), Highest Food Price Sold (Obtained from getting the maximum food price), Lowest Drink Price Sold (Obtained from getting the minimum drink price) for every transaction that happenned before June 2023.
3. Display Staff's First Name (Obtained from getting the first staff name in lowercase format), FoodCategory, and Average Total Food Purchased (Obtained from the purchased food quantity average), and Total Food Purchased (Obtained from total sum of FoodQuantity) for every purchase that has average food quantity is more than 2 and the FoodCategory is 'Fried'.
4. Display TransactionID, Drink Transaction Forecast (Obtained from adding one year to the TransactionDate), and Drink Quantity (Obtained from adding ' Cup' at the end of DrinkQuantity) for every 'Soft Drink' or 'Herbal' drink category in a single transaction that has more than 1 quantity sold.

**(ALIAS SUB QUERY)**

1. Display StaffID, Transaction Date (Obtained from Converting the TransactionDate to 'dd Mon yyyy' format, ex: 31 Jan 2023), Movie Identification (Obtained from change the first 2 letter from MovieID to ‘Movie ‘), Movie Name (Obtained from adding 'Film ' in front of the MovieName), and MovieCategory for every Movie that has duration higher than the average duration and the MovieID is 'MO003'

**(ALIAS SUB QUERY)**

1. Display Last Name (Obtained from getting the last name of the CustomerName) and Total Movie Sold (Obtained from the total multiplication of TicketQuantity and Movie Price) for every first quarter of a year which Total Movie Sold is above the Average of all Total Movie Sold.

**(ALIAS SUB QUERY)**

1. Display Transaction (Obtained from changing the first two character from TransactionID to 'Transaction ' in Uppercase format), StaffName, Customer Name (Obtained from adding 'Ms/Mrs. ' in front of the CustomerName), and Transaction Date (Obtained from getting the year of TransactionDate) for every female customer and total transaction is higher than the average total transaction

**(ALIAS SUB QUERY)**

1. Create a view named 'TotalPurchase' to display Staff (Obtained from changing first staff name with 'Staff ') MovieName, MovieRating, Average Ticket Bought (Obtained from average of TicketQuantity), and Total Ticket Bought (Obtained from total sum of the TicketQuantity). for every movie that has 5 star rating and the total sum of TicketQuantity is higher than the Average Ticket Bought
2. Create a view named 'Food Sales' to display FoodName, Total Quantity Sold (Obtained from total sum of FoodQuantity sold), and Average Food Price (Obtained average of FoodPrice) for every food which category is 'Sandwich' and the Transaction is happenned in current Year.