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| **Project Case** |  |
| ISYS6123 | M0564  Introduction to Database Systems |
| **Information Systems** | **E192-ISYS6123-NC04-00** |
| ***Valid on*** *Even Semester Year 2018/2019* | **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* |
| 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 SQL Server Enterprise 2016  Microsoft Word 2010  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, PNG, SQL |

## Soal

*Case*

**Blau Jacke Jacket**

**Blau Jacke Jacket** isa top fashion brand in jacket industries. **Blau Jacke Jacket** manages transactions like **sales transaction** and **purchase transaction**. **Sales transaction** is the transaction that happened when customer wants to buy a jacket which will be handled by a staff. **Purchase transaction** is a transaction that happened when staff wants to restock some materials for the jacket from a vendor.

Every customer who wants to purchase jacket(s) in **Blau Jacke Jacket** must be following the **sales transaction** procedures, which are:

* **Customer** who wants to buy a jacket must have a personal information like name,date of birth,andgender. Every customer has an identification code with the following format:

“CUXXX”

X => number between 0 – 9

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

“SAXXX”

X => number between 0 – 9

* **Customer** can buy more than one jacket.
* Every **staff** whoworks in **Blau Jacke Jacket** has a complete information like name,date of birth,gender, salary, and an identification code with the following format:

“STXXX”

X => number between 0 – 9

* Every **jacket** has a complete information like name, price, stock, and an identification code with the following format:

“JAXXX”

X => number between 0 – 9

* Many jackets can have one or more material(s).
* Every **material** has a complete information like name, price, stock and an identification number with the following format:

“MAXXX”

X => number between 0 – 9

Every staff who wants to restock some materials needed in **Blau Jacke Jacket** 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, the material(s) purchased, and the quantity of each material. Each **purchase transaction** has an identification code with the following format:

“PRXXX”

X => number between 0 – 9

* Each **vendor** has a complete personal information like name, address, email, and an identification code with the following format:

“VEXXX”

X => number between 0 – 9

**Notes**:

* Customer gender can only be filled with ‘Male’ or ‘Female’ (without quote).
* Vendor name must be greater or equal to 3 characters.
* Vendor address must end with ‘ Street’ (without quote).
* Vendor email must contain ‘@’ symbol (without quote).
* Staff name must be greater or equal to 3 characters.
* Staff gender can only be filled with ‘Male’ or ‘Female’ (without quote).
* Staff salary must be between 1000000 and 20000000.
* Jacket price must be greater or equal to 25000.
* The year of the sales transaction date must be the same as the current year.
* The year of the purchase transaction date must be the same as the current year.

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

1. Create Entity Relationship Diagram to maintain **sales transaction** and **purchase transactions.**
2. 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
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** **transaction** and if there is a new transaction with more than one material for **purchase transaction.**
2. To support database management process in **Blau Jacke Jacket** themanager of **Blau Jacke Jacket** asked you to provide some query that resulting important data. The requirements that asked from the manager are:
3. Display CustomerName, Transaction Date (obtained from the transaction date in ‘dd mon yyyy’ format), and Transaction Quantity (obtained from the sum of quantity) for every sales transaction which ID of the jacket is ‘JA002’ and the transaction happened on the 11th month.
4. Display VendorName, Transaction Date (obtained from the transaction date in ‘dd/mm/yyyy’ format), and Maximum Quantity (obtained from the maximum of quantity) for each purchase transaction that happened on an even day and has a material with the ID of ‘MA001’.
5. Display VendorName, Vendor Address (obtained from vendor address with ‘Street’ replaced by ‘St.’), Total Item (obtained from the sum of quantity), and Total Transaction (obtained from the count of the transaction) for every purchase transaction with vendor name starts with ‘PT.’ and the transaction happened on the 10th month.
6. Display StaffName, StaffGender (obtained from first letter of staff’s gender), CustomerName, and Total Sales Transaction (obtained from the count of the transaction) for every sales transaction that happened on an even day and the sum of the quantity is greater than or equal to 4.
7. Display CustomerName (obtained from customer name in uppercase format) and CustomerGender (obtained from first letter of customer gender) for every sales transaction that happened on the first day of the month and the quantity is greater than the average quantity of all sales transaction.

**(alias subquery)**

1. Display VendorName, PurchaseDate (obtained from purchases date in ‘Mon dd, yyyy’ format), and MaterialName (obtained from the material name in lowercase format) for every purchase transaction with a material price is greater than the average price of all materials and the vendor’s name ends with ‘Inc’.

**(alias subquery)**

1. Display CustomerName, Transaction Day (obtained from the name of the day of the transaction date, for example ‘Monday’), Quantity (obtained from the quantity that ends with ‘ piece(s)’), and Total Price (obtained from the sum of the quantity times the price of the jacket) for every sales transaction with the quantity is greater than the average quantity of all sales transaction quantityand the Total Price is greater than 10000000. Sort the result by customer name in descending order.

**(alias subquery)**

1. Display VendorName, Transaction Date (obtained from purchases date in ‘dd mon yyyy’ format), MaterialName, and Material Number (obtained from last three characters of material ID) for every purchase transaction with the material stock is greater than the average of all material stock. And the total price is greater than 20000 where the total price is obtained from the sum of transaction quantity times material price. Sort the result by vendor name in ascending order.

**(alias subquery)**

1. Create a view named ‘**ViewPurchaseTransaction**’ 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 vendor whose **name starts with ‘PT.’ and the Total Purchase Transaction is greater than** 2.
2. Create a view named ‘**ViewSalesTransaction**’ to display StaffName, CustomerName, Total Sales Transaction (obtained from the count of transaction), and Maximum Sales Quantity (obtained from the maximum of quantity) for every **sales transaction made by a customer whose name starts by ‘R’ letter and the Total Sales Transaction is greater than 1.**

**File that must be collected**:

1. Entity Relationship Diagram (.vsd, .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