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| --- | --- |
| **Project Case** |  |
| ISYS6169 | ISYS6279 | ISYS6280 | T0206  Database Systems |
| **Information Systems** | **O212-ISYS6169-DH02-00** |
| ***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*

**OKEA**

**OKEA** is a Bluejack national group that designs and sells ready-to-assemble furniture, kitchen appliances, and home accessories. **OKEA** manages all **purchases transaction** and **sales transaction**. **Purchases Transaction** is the transaction that happened when OKEA buys raw material for furniture. **Sales Transaction** is the transaction that happened when OKEA sells their furniture.

Every customer who wants to buy some furniture from **OKEA** must follows **sales transactions** procedures, those are:

* Each **sales transaction** has all information about the customer, the staff, the transaction date, the product(s) purchased, and quantity of each product. Each **sales transaction** has an identification number with the following format:

“SLXXX”

X => number between 0 – 9

* Customer who wants to buy some product must have membership in **OKEA** with personal information such as name, age, gender, address, and phone number. Each customer has an identification number with the following format:

“CSXXX”

X => number between 0 – 9

* Staff can **purchase some materials from vendor** and **serve customer who wants to buy a product**. Every staff have personal information such as name, age, gender, address, phone number, salary and identification number with the following format:

“STXXX”

X => number between 0 – 9

* Every **product** has specifications such as product name, price and identification number with the following format:

“PDXXX”

X => number between 0 – 9

* Every **product** is classified based on a **type**. Each **product type** has a name, description and identification number with the following format:

“PTXXX”

X => number between 0 – 9

Every **OKEA** products are made of raw materials that bought from some **vendors**. **OKEA** has **Purchase Transactions** to buy those materials with following procedure:

* Every **Purchase Transactions** can see all information about the staff, the supplier, the transaction date, purchased material(s), and the quantity of each purchased material. Each **Purchase Transaction**has an identification number with the following format:

“PSXXX”

X => number between 0 – 9

* **Vendor** must have personal information such as name, age, gender, address, phone number, and identification number with the following format:

“VRXXX”

X => number between 0 – 9

* Every **Material** that purchased by staff has its own name, price, and identification with the following format:

“MTXXX”

X => number between 0 – 9

**Notes:**

* Staff name must be 2 words.
* Staff gender can only be filled with “Female” or ‘Male” (without quote).
* Customer name must be 2 words.
* Customer gender can only be filled with “Female” or ‘Male” (without quote).
* Vendor name must be 2 words.
* Vendor gender can only be filled with “Female” or ‘Male” (without quote).
* Material price can only be filled with 50000, 100000, or 200000.
* Product Type must be more than or equals 5 characters.
* Product Price must be between 100000 and 5000000.
* Purchase transaction date must be done from 10 AM to 10 PM.
* Sales transaction date must be done from 10 AM to 10 PM.

Now **OKEA** is still using manual management system to maintain the **Purchase Transactions** and **Sales Transactions**. You, as a database administrator at **OKEA** are asked to create a database system that can store data and maintain the **Purchase Transactions** and **Sales Transactions**. The tasks that you must do are:

1. Create **Entity Relationship Diagram** to maintain **Purchase Transactions** and **Sales Transactions**.
2. Create a database system using **DDL** syntax that relevant with **Purchase Transactions** and **Sales Transactions** procedures.
3. Create query using **DML** syntax to simulate the transactions process for **Purchase Transactions** and **Sales Transactions.** Before startquery to simulate the transactions, first do the following tasks:
   * **Master** table consists of minimum 10 data.
   * **Transaction** table consists of minimum 15 data.
   * **Transaction Detail** table consists of minimum 25 data.
4. To support database management process in **OKEA,** the owner of **OKEA** asked you to provide some query that resulting important data. The requirements that asked from the manager are:
5. Display StaffID, Staff Name (obtained from staff’s name in uppercase format), StaffPhoneNumber, and Total Transactions (obtained from the count of purchase transaction) for every transaction handled by staff whose name starts with ‘D’ and the vendor’s gender is ‘female’.
6. Display PurchaseID, StaffName, Age (obtained from staff’s age and ends with ‘ years old’) and Items Purchased (obtained from average of purchase quantity) for every purchase transaction that occurs in 2017 and staff’s age is more than 20 years old.
7. Display customerID, customerName, customerAddress, Total Transaction (obtained from the count of sales transaction), Total Quantity (obtained from sum of quantity) for every customer whose name contains ‘B’ and Total Quantity is more than 1. Sort by Total Transaction in descending order.
8. Display SalesID, Date (obtained from sales transaction date in ‘dd mon yyyy’ format), Minimum Quantity (obtained from the minimum of quantity), Maximum Quantity (obtained from the maximum of quantity) for every sales transaction which product’s name is more than 7 characters and Minimum Quantity is not equal to Maximum Quantity.
9. Display Purchase Date (obtained from purchase transaction date in ‘mon dd, yyyy’ format), VendorName, and Total Purchase Quantity (obtained from sum of quantity and ends with ‘ item’) for every purchase which occurs in 2018 and the count of quantity is loswer than quantity.

**(alias subquery)**

1. Display Brand ID (obtained from combining product ID by replacing ‘0’ with nothing and product type ID by replacing the first 2 characters with word ‘TYPE’), ProductName, and ProductTypeName for every product which quantity is higher than the average of quantity and ProductTypeName is either ‘Desks’, ‘Lighting’, and ‘Mattresses’.

**(alias subquery)**

1. Display SalesID, Date (obtained from sales transaction date in ‘mon dd, yyyy’ format), Maximum Price (obtained from the maximum of product price), Minimum Price (obtained from minimum of product price) for every sales transaction which the year of the transaction happened is equal to the earliest year of the transaction happened and ProductTypeName is not either ‘Leisures’ or ‘Outdoor’. Sort by product price in ascending order.

**(alias subquery)**

1. Display Staff Name (obtained from staff’s last name), StaffAddress, StaffGender, Total Quantity (obtained from sum of quantity), and Average Quantity (obtained from average of quantity) for every purchase transaction which staff’s salary is higher than the average of all staff’s salary and the transaction happed on ‘Monday’.

**(alias subquery)**

1. Create a view named NightPurchaseTransactionData to display PurchaseID, PurchaseDate, MaterialPrice, Total Material Price (obtained from the sum of multiplying material price with quantity), Minimum of Total Material Price (obtained from minimum of multiplying material price with quantity) for every purchase transaction which occurs between 18 PM to 22 PM and material price is greater than or equal to 100000.
2. Create a view named CustomerTransactionDate to display CustomerName, CustomerAddress, Customer Gender (obtained from the first letter of customer’s gender), Transaction Count (obtained from count of sales transaction), Latest Transaction Date (obtained from maximum of sales transaction date) for every male customer whose name is more than 15 characters.

**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