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| --- | --- |
| **Project Case** |  |
| ISYS6169 | ISYS6169001  Database Systems |
| **Information Systems** | **O222-ISYS6169-FX01-00** |
| ***Valid on*** *Odd Semester Year 2021/2022* | **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 Word 2010  Microsoft Office Visio 2010 |

## 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, BAK |

## Soal

*Case*

**FlexPhone**

**FlexPhone** is a phone shop managed by your best buddy, Felix. Felix wants to manage all activities such as purchasing phone from a vendor and selling phone to customer.

Every staff that hired by **FlexPhone** have a task to **serve a customer who wants to buy a Phone** and **purchase Phone from Vendor**. Every staff must be following the procedures to become a staff, which are:

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

“STXXX”

X => number between 0 – 9

* Staff can purchase **a kind or kinds** of phone from a vendor for each transaction.
* Every **purchase transaction** made with the vendor have all the information about **staff, vendor, transaction date, phone purchased**, and the **quantity** of each Phone. Every **purchase transaction** has an identification number with the following format:

“PHXXX”

X => number between 0 – 9

* Every **Phone** have its own **name** and **price**. Every **Phone** has an identification number with the following format:

“POXXX”

X => number between 0 – 9

* Each **Phone** **belongs to a Phone Brand**. The Phone Brand has an identification number with the following format

“PBXXX”

X => number between 0 – 9

* Staff can also **sell** a kind or kinds of **phone** to a **customer** through sales transaction for each transaction
* Every **sales transaction** made by the customer have all the information about **staff, customer, transaction date**, **phone sold**, and the **quantity of each phone**. Every **sales transaction** has an identification number with the following format:

“SHXXX”

X => number between 0 – 9

Every customer that wants to buy phone at **Flexphone** must be following the **sales transaction procedures**, that are:

* Every customer that wants to do transaction must already completed personal information that are **name, email, date of birth, gender, phone number**, and **address**. Every customer has an identification number with the following format:

“CUXXX”

X => number between 0 – 9

* Customer can purchase **more than one kind of phone** in every transaction.

Every vendor that wants to sell their phone must be following the **purchase transaction procedures**, those are:

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

“VEXXX”

X => number between 0 – 9

* Supplier can sell **more than one kind of phone** in every transaction.

**Notes:**

* Customer name length must be 3 or more characters.
* Customer email must be end with either ‘@bluejack.com’ or ‘@sunib.edu’.
* Customer gender must be either “Male” or “Female” (without quote).
* Staff Year of Date of Birth must be more or equals of 1960
* Staff email must be end with either ‘@bluejack.com’ or ‘@sunib.edu’.
* Staff gender must be either “Male” or “Female” (without quote).
* Vendor email must be end with either ‘@bluejack.com’ or ‘@sunib.edu’.
* Phone price must be between 100000 and 40000000
* All data must be completely filled
* any changes happen to a data can affect the other data

example: if a data is deleted, other data as well as transactions related will be deleted, this works too for the update

Now **FlexPhone** still using manual management system to maintain the **sales** and **purchase transactions**. You as his best buddy wants to help **FlexPhone** 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 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 database management process in **FlexPhone,** Felix asked you to provide some query that resulting important data. The requirements that asked from him are:

1. Display ID (Obtained from word ‘Customer’ and the last number of Customer ID), CustomerName, CustomerGender, and total amount of spending (Obtained from sum of all phone price times quantity) that have been done by the that customer.

2. Display Staff ID, Name (Obtained from the first name of the Staff), and the Customer Count (obtained from the total of customer that made transaction with that staff) for the staff whose name contain at least 2 words.

3. Display Customer ID (Obtained from word ‘Customer’ and the last number of Customer ID), Customer Name, Phone Brand, and Total spending (Obtained from the sum of phone price and quantity for all phone in that brand) for the customer whose name contain at least 2 words and purchase more than 3 kinds of phone.

4. Display Staff ID, Email (Obtained from staff Email with the email format changed into @Ymail.com), phone brand, and total selling (obtained from sum of the phone price times quantity for all phone in that brand) for staff that sell more than 2 kind of phones and order it by staff ID ascendingly.

5. Display Staff Email, Staff Gender. Date of Birth (Obtained from the staff DOB with the format ‘dd mon yyyy’), and Salary (Obtained from adding ‘Rp.’ before staff Salary and ‘,00.’ After the staff Salary) for staff that has the salary above the average of all staff salary and aged 30 years or over.

(**alias subquery**)

6. Display StaffID, StaffName, StaffPhone (Obtained from StaffPhone and change the ‘+62’ into ‘08’), and Total Selling (Obstained from adding ‘Rp.’ before and ‘,00.’ After the sum of the purchase for all transaction have been done to customer by that staff) for Total Selling that between 10000000 and 100000000 and the staff whose gender is Male.

(**alias subquery**)

7. Display Staff No (Obtained from adding the words ‘Staff No’ before the last number of Staff ID), StaffName, Email (Obtained from replacing the last email format into @gmail.com), Date Of Birth (Obtained from the StaffDOB with the format ‘dd/mm/yyyy’), Customer Count (Obtained from counting the number of customer who made transaction with the staff). For the staff who has the highest Customer Count.

(**alias subquery**)

8. Display PhoneBrandID, PhoneBrand, CustomerID, CustomerName, Customer Email (Obtained from replacing customer email format into ‘@Gmail.com’), Qty (Obtained from the sum of quantity of the Phone in that Brand) for the highest Qty each brand, the customer that have email format ‘@bluejack.com’ and the customer id ends with even number, order it by PhoneBrandID ascendingly

(**alias subquery**)

9. Create a view named ‘Vendor\_Brand\_Transaction\_View’ to display VendorID (Obtained from adding the word ‘Vendor’ before the last number of VendorID), VendorName, PhoneNumber (Obtained by replacing ‘+62’ into ‘08’ in VendorPhone), PhoneBrand, Transaction Count (Obtained by counting transaction for every phone brand), Total Transaction (Obtained from the sum of all PhonePrice times quantity in a brand)

10. Create a view named ‘to display StaffID, StaffName, Sold Phone Count (Obtained from sum the quantity of phone end with the word ‘pc(s)’), Total Transaction (Obtained from the sum of phone price times qty and add ‘Rp.’ Before and ‘,00.’ After it), Count Brand (Obtained from counting the number of brand which phone sold by Staff whose have email format ‘@bluejack.com’)

**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