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| **Project Case** |  |
| ISYS6123 | ISYS6123003  Introduction to Database Systems |
| **Information Systems** | **E232-ISYS6123-VS04-00** |
| ***Valid on*** *Even Semester Year 2022/2023* | **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 16.3 |

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 (JPG / PNG) | - |

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*

**VadidaS**

**VadidaS** is the biggest shoes business in Jakarta found in 2003. Ever since it first opened, **VadidaS** is currently managed by Cokro. Cokro manages all of activities that belongs to **VadidaS** like **selling a shoe** **to customer** and **purchasing a shoe with vendor.**

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

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

**STXXX**

**X** à Number between 0 – 9

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

**PUXXX**

**X** à Number between 0 – 9

* Every **shoe** purchased from vendor have its own **information** like name, price, description. Every shoe has an **identification number** with the following format:

**SHXXX**

**X** à Number between 0 – 9

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

**TRXXX**

**X** à Number between 0 – 9

Every **customer** that wants to **buy shoe** at **VadidaS** must be following the **transaction procedures**, those are:

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

**CUXXX**

**X** à Number between 0 – 9

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

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

**VEXXX**

**X** à Number between 0 – 9

Here are some of the **constraints** requested by the **VadidaS**.

* **Vendor email** must **end with “@gmail.com”** (without quote).
* **Staff name** must be **more than 10 characters**.
* **Staff gender** must be **either** “**Male**” **or** “**Female**” (without quote).
* **Staff email** must **end with “@gmail.com”** (without quote).
* **Staff salary** must be **between** **120000 and** **500000**.
* **Customer name** must be **more than 10 characters**.
* **Customer gender** must be **either** “**Male**” **or** “**Female**” (without quote).
* **Customer email** must **end with “@gmail.com”** (without quote).
* **Customer age** must be **greater than or equal to 17 (use date of birth).**
* All data must **not be null**.

Now **VadidaS** still using manual management system to maintain the transactionandpurchase. You as his precious friend wants to help **VadidaS** 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** **header** **table** must be filled with **more than or equals 15 data**.
* **Transaction detail** **table** must be filled with **more than or equals 25 data**.
* Create query using DML syntax to **simulate the transactions** **process** for transaction and purchase. DML syntax to filldatabase and DML syntax to simulate the transactions process should be a **different query**.
* To support database management process in **VadidaS**,Cokro asked you to provide some **query** that resulting important data. The requirements that asked from him are:
  + - 1. Display CustomerID, First Name (obtained from the first word of CustomerName), CustomerGender, and Total Item Purchased (obtained from the total of Quantity) for each CustomerGender equals to Male and Total Item Purchased is greater than 1.
      2. Display Shoes Id (obtained by replacing 'SH' with 'Shoes ' from ShoesID), StaffID, Transaction Day (obtained from the day of SalesDate), ShoesName, and Total Sold (obtained from the total of Quantity) for each ShoesPrice greater than 120000 and Total Sold must be even number.
      3. Display Staff Number (obtained from displaying StaffID as integer), Staff Name (obtained from StaffName in uppercase format), StaffSalary, Total Purchase Made (obtained from total purchase made by vendor), and Max Shoes Purchased (obtained from maximum of Quantity) for each StaffSalary greater than 150000 and Total Purchase Made greater than 2.
      4. Display VendorID, Vendor Name (obtained from VendorName ends with ' Vendor'), Vendor Mail (obtained by replacing ‘@gmail.com’ with ‘@mail.co.id’ from VendorEmail in uppercase format), Total Shoes Sold (obtained from total of Quantity), and Minimum Shoes Sold (obtained from minimum of Quantity) for each Total Shoes Sold greater than 13 and Minimum Shoes Sold greater than 10.
      5. Display VendorID, Vendor Name (obtained from VendorName ends with ' Company'), VendorPhone, Purchase Month (obtained from the name of the month of PurchaseDate), and Quantity for each transaction that occurs in April and Quantity is greater than the average of all purchasing quantity.

(**ALIAS SUBQUERY**)

* + - 1. Display Invoice Number (obtained from replacing 'SA' with 'Invoice 'from SalesID), Sales Year (obtained from the year of the SalesDate) ShoesName, ShoesPrice, Total Item (obtained from Quantity ends with ' piece(s)') for each ShoesName that contains 'c' and ShoesPrice is greater than average of all ShoesPrice.

(**ALIAS SUBQUERY**)

* + - 1. Display PurchaseID, StaffID, Staff Name (obtained from StaffName in uppercase format), Purchase Date (obtained from PurchaseDate in 'dd/mm/yyyy' format), and Total Expenses (obtained from calculating the total of multiplication between ShoesPrice and Quantity and starts with 'Rp. ') for each Total Expenses greater than the average of multiplication between ShoesPrice and Quantity and last three digit of StaffID must be an odd number.

(**ALIAS SUBQUERY**)

* + - 1. Display SalesID, StaffID, First Name (obtained from the first word of StaffName), Last Name (obtained from the last word of StaffName), and Total Revenue (obtained from the total of multiplication between Quantity and ShoesPrice) for each StaffGender that equals 'Female' and ShoesPrice is greater than the average of all shoes price.

(**ALIAS SUBQUERY**)

* + - 1. Create a view named 'Vendor Max Transaction View' to display Vendor Number (obtained by replacing 'VE' with 'Vendor ' from VendorID), Vendor Name (obtained from VendorName in lower case format), Total Transaction Made (obtained from the total transaction made), Maximum Quantity (obtained from maximum of Quantity) for each VendorName that contains 'a' and Maximum Quantity greater than 20.
      2. Create view named 'Shoes Minimum Transaction View' to display SalesID, SalesDate, StaffName, Staff Email (obtained from StaffEmail in uppercase format), Minimum Shoes Sold (obtained from minimum of Quantity), and Total Shoes Sold (obtained from total of Quantity) for SalesDate that occurs after 2020 and ShoesPrice greater than 10000.

**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)