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| --- | --- |
| **Project Case** |  |
| ISYS6084 | ISYS6123  Database | Introduction to Database Systems |
| **Information Systems** | **E212-ISYS6123-AN04-00** |
| ***Valid on*** *Even 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 another 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. Bila Anda tidak membaca peraturan ini, maka Anda dianggap telah membaca dan menyetujuinya

*If you have missed to read these regulations, so you are considered to have read and agreed on it*

1. Persentase penilaiaan untuk matakuliah ini adalah sebagai berikut:

*Marking percentage for this subject is described as follows:*

|  |  |
| --- | --- |
| **Tugas Mandiri**  *Assignment* | **Proyek**  *Project* |
| 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* |
| SQL Server Management Studio 18.5.1  SQL Server Developer 2019  Microsoft Office 365  Visual Paradigm Community Edition 16.1 |

## Ekstensi file yang harus disertakan dalam pengumpulan tugas mandiri, dan proyek untuk matakuliah ini adalah sebagai berikut:

*File extensions should be included in assignment project and final exam collection for this subject are described as follows:*

|  |  |
| --- | --- |
| **Tugas Mandiri**  *Assignment* | **Proyek**  *Project* |
| SQL | SQL, VPP, Image Files (JPG / PNG) |

## Soal

*Case*

**WatchAN**

**WatchAN** is the best place for selling watch managed by your friend, Joel. Joel and his friends manage all of activities that belongs to **WatchAN**. Userswho are registered to the site can purchase watch online through the site.

Every customer that wants to buy a watch in **WatchAN** must follow the **sales transaction procedures**, which are:

* **Customer** that wants to buy a watch must have a personal information like **name, gender, address,** and **phone**. Every **customer** has an identification number with the following format:

“CUXXX”

X => number between 0 – 9

* Every **sales transaction** made have all the information about **the customer, agent, sales date, watch sold,** and **quantity of each watch**. Every **sales transaction** has an identification number with the following format:

“SAXXX”

X => number between 0 – 9

* Customer can buy **more than one watch** in every sales transaction.
* Every **purchase transaction** made have all the information about **the vendor, agent, purchase date, watch purchased,** and **quantity of each watch**. Every **purchase transaction** has an identification number with the following format:

“PCXXX”

X => number between 0 – 9

Every **watch** to be sold in **WatchAN** must be registered the with the following information, which are:

* **Watch** to be sold must have a complete information like **name, price,** and **stock**. Every **watch** has an identification number with the following format:

“WAXXX”

X => number between 0 – 9

* Every watch has its own **brand** and has a complete information like **name** and an identification number with the following format:

“BDXXX”

X => number between 0 – 9

* Every **vendor** has a complete information like **name, address, phone, email** and an identification number with the following format:

“VNXXX”

X => number between 0 – 9

* Every **agent** has a complete information like **name, gender, address, email, phone**, **salary** and an identification number with the following format:

“AGXXX”

X => number between 0 – 9

* Agent can purchase **more than one watch** from vendor.

**Notes:**

* Customer name must be between 6 and 12 characters.
* Customer gender must be between ‘Male’ or ‘Female’ (without quote).
* Customer phone must start with ‘0’ (without quote).
* Agent gender must be between ‘Male’ or ‘Female’ (without quote).
* Agent address must end with ‘ Street’ (without quote).
* Vendor email must have ‘@’ character (without quote).
* Vendor name must start with ‘PT ’ (without quote).
* Watch price must be more than 100000.

Now **WatchAN** is still using manual management system to maintain the **purchase and sales transactions**. You as his precious friend wants to help **WatchAN** to create a database system that can store data and maintain the **purchase** and **sales 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**. The database system must include database and tables with the required procedures.
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 to 10 data.
* **Transaction** table must be filled with more than or equals to 15 data.
* **Transaction detail** must be filled with more than or equals 25 data.

1. Create query using **DML syntax** to **simulate** the transactions process for **purchase** and **sales 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 **WatchAN**, Joel asked you to provide some query that resulting important data. The requirements that asked from his are:
2. Display PurchaseId, AgentID, AgentGender, and Total Price (obtained from the sum of watch price) for each vendor which id ends with ‘4’ and the Total price is greater than 500000.
3. Display TotalSalesTransaction (obtained from total number of sales transaction), Name (obtained from customer name in uppercase format) for every customer who bought watch after the 2nd month of the year and have bought more than 4 watch in one transaction.
4. Display BrandCode (obtained by adding ‘Brand ’ word in front of the last three digits of brand id), BrandName, Max Stock (obtained from highest stock of watch stock and ends with ‘pcs ’), and Min Stock (obtained from lowest stock of watch stock and ends with ‘pcs ’) for every watch which sold on 2018 and the watch brand name is ‘BVLGARIA’.
5. Display CustomerName, Customer Gender (obtained from customer gender in uppercase format), Total Watch Purchased (obtained from the sum of quantity), and Watch Owned (obtained from the count of watch) for every customer whose id is either ‘CU002’ or ‘CU003’ and did a transaction on odd month.
6. Display AgentName, AgentAddress, AgentPhone (obtained by replacing the first letter of agent phone with ‘+62’), and TotalPurchaseTransaction (obtained from the total of transaction and ends with ‘ Transaction(s)’) for every watch which price is greater than 1000000 and total purchase transaction is more than 1.

(**alias subquery**)

1. Display CustomerID, and TotalTransaction (obtained from the total of sales transaction and ends with ‘ Transaction(s)’), for every watch that has name longer than 18 characters and the last character is not an ‘a’ character.

(**alias subquery**)

1. Display Customer First Name (obtained from the first word of customer name), and Total Quantity (obtained from the sum of quantity) for every customer who bought a watch with total quantity greater than the average quantity of all transaction that occurred on 2018.

(**alias subquery**)

1. Display Brand Name (obtained from brand name in lowercase format), and Total Watch (obtained from the count of watch and ends with ‘ watch(es)’) for every watch that sold on a day before the maximum day of every sales transaction date in September.

(**alias subquery**)

1. Create a view named ‘**CustomCustomerViewer**’ to display CustomerID, CustomerName, Maximum Quantity (obtained from the highest of quantity sold), and Minimum Quantity (obtained from the lowest of quantity sold), for every sales transaction that occurred on 2018 and the customer’s name contains ‘o’ character.
2. Create a view named ‘**CustomVendorViewer**’ to display VendorName, WatchName, Purchase Date, Total Purchase (obtained from the sum of quantity), and Minimum Purchase (obtained from the minimum of quantity) for every transaction that occurred in June and had minimum purchase that is greater than 4.

**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