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| **Project Case** |  |
| ISYS6169 | ISYS6279 | ISYS6280 | T0206  Database Systems |
| **Information Systems** | **O212-ISYS6169-SV04-00** |
| ***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*

**Bluejack Network**

Bluejackhas been handling network services for almost 10 years. Now, Bluejack has opened their very first network store in Jakarta called **Bluejack Network**. **Bluejack Network** activities are **selling a network device to customer** and **purchasing a network device from vendor**.

Every staff that hired by **Bluejack Network** have a task to **serve a customer who wants to buy a network device** and **purchase a network device from vendor**. Every staff must follow the procedures to become a staff, those are:

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

“STFXXX”

X => number between 0 – 9

* Staff can purchase a network device with a **vendor** and serve a **customer** who wants to buy a network device.
* Every **vendor** that wants to sell their network device must already completed personal information like name, phone, and address. Every **vendor** has an identification number with the following format:

“VDRXXX”

X => number between 0 – 9

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

“CSTXXX”

X => number between 0 – 9

* Every **network** **device** bought and sold by **Bluejack Network** have its own name, category, stock, sales price, and purchase price. Every **network device** has an identification number with the following format:

“NTKXXX”

X => number between 0 – 9

* Each network device is classified based on a **category**. Every network device **category** has a name and an identification number with the following format:

“NCTXXX”

X => number between 0 – 9

Every customer that wants to buy network device at **Bluejack Network** must be following the **sales transaction procedures**, those are:

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

“SLSXXX”

X => number between 0 – 9

* Customer can purchase **more than one network device** in every sales transaction.

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

* Every **purchase transaction** made have all the information about staff, vendor, purchase date, network device purchased, and the quantity of each network device. Every **purchase transaction** has an identification number with the following format:

“PCHXXX”

X => number between 0 – 9

* Vendor can sell **more than one network** **device** in every purchase transaction.

**Notes:**

* Staff gender **must be either** “**Male**” or “**Female**” (without quote).
* Staff birth year **must be before 1995**.
* Staff salary **must be greater than equals to 3.000.000**.
* Customer gender **must be either** “**Male**” or “**Female**” (without quote).
* Customer address **must be more than 15 characters**.
* Customer name **must be between 5** and **25 characters**.
* Vendor address **must be more than 15 characters**.

Now **Bluejack Network** still using manual management system to maintain the **sales** and **purchase transactions**. You as his precious friend are asked to help **Bluejack Network** 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.
* For the **Network Category** table, the table must be filled with the following data:

|  |
| --- |
| **Network Category** |
| Router |
| Switch |
| Network Accessories |

1. Create query using DML syntax to simulate the transactions process for **sales** and **purchase transactions**.
2. To support database management process in **Bluejack Network,** the manager of **Bluejack Network** asked you to provide some query that resulting important data. The requirements that asked from her are:
3. Display CustomerName, Transaction Date (obtained from SalesDate with ‘Mon dd, yyyy’ format), and Total Price (obtained by adding ‘Rp. ’ in front of the total of NetworkSalesPrice multiplied with quantity sold) for every customer which quantity sold is more than 5 and sales price is greater than 3.000.000.
4. Display StaffId, StaffName, and Total Purchased Network (obtained from the number of purchased network device) for every staff whose name contains ‘s’ character and Total Purchased Network is more than 10.
5. Display NetworkId, NetworkName, Network Stock (obtained from NetworkStock ended with ' pc(s)'), Total Sales Transaction (obtained from the total network device transaction), and Total Price (obtained from the total of NetworkSalesPrice multiplied by quantity sold) for every network whose name contains 'c' character and the Total Price is more than 30.000.000.
6. Display VendorName, VendorAddress, Phone (obtained by replacing StaffPhone first character into ‘+62’), Total Purchase Transaction (obtained from the total of purchase transaction), and Average Price (obtained from the average of PurchasePrice) for every vendor whose address length is less than 25 characters and the average of purchase price is more than 1.000.000.
7. Display CustomerId, CustomerName, CustomerGender, CustomerAge (obtained from year difference between CustomerDOB and today) for every customer which buy a network device that sales price is higher than average of all network device sales price and customer age is more than 21 and the repeated data is shown once.

(**alias subquery**)

1. Display Staff Name (obtained from the staff’s first name), StaffAddress, StaffSalary, VendorName, NetworkId, Quantity, and PurchaseDate for every transaction which served by staff whose salary is higher than average of all staff salary and the transaction month occurred after the 9th month.

(**alias subquery**)

1. Display NetworkName, NetworkCategoryName, Sales Price (obtained by adding ‘Rp. ’ in front of SalesPrice), Total Sold (obtained from the number of sold network device ended with ‘ pc(s)’) for every transaction which network device sales price is higher than average of all sales price and Total Sold is more than 10. Sort the data based on NetworkName in descending format.

(**alias subquery**)

1. Display Network Name (obtained from NetworkName in uppercase format), Network CategoryName, Purchase Price (obtained by adding ‘Rp. ’ in front of PurchasePrice), and Total Purchase (obtained from the number of purchased network device), and NetworkStock for every network which network sales price is lower than the maximum of all network purchase price and network category is either 'Router' or 'Switch'.

(**alias subquery**)

1. Create a view named '**VendorTransaction**' to display VendorName, VendorPhone, Total Sold Network (obtained from the number of purchased network device), and Total Transaction (obtained from the total of purchase transaction made) for every vendor which Total Transaction is more than 2 and the purchase is done by male staff.
2. Create a view named '**CustomerTransaction** to display CustomerName, CustomerGender, Total Purchased Network (obtained from the number of sold network device), and Total Transaction (obtained from the total of sales transaction made) for every customer which Total Purchased Network is more than 15 and customer name is more than one word.

**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