|  |  |
| --- | --- |
| **Project Case** |  |
| ISYS6169 | ISYS6169001  Database Systems |
| **Information Systems** | **O222-ISYS6169-RR03-00** |
| ***Valid on*** *Odd Semester Year 2021/2022* | **Revision 01** |

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*

**Uncover Bionic**

**Uncover Bionic** is a bionic center managed by Athene. Athene manage all of activities in the company like **selling a bionic to customer** and **purchasing bionic stock with supplier**.

Every staff that hired by Athenehave a task to **serve a customer who wants to buy bionic and purchase bionics for product stocks from vendor**. Every staff must follow procedures to become a staff, which are:

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

“STXXX”

X => number between 0 – 9

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

“PUXXX”

X => number between 0 – 9

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

“SAXXX”

X => number between 0 – 9

* Every **bionic** sold by **Uncover Bionic** have its own name, stock, launch date, and price. Every **bionic** has an identification number with the following format:

“BIXXX”

X => number between 0 – 9

* Every **bionic** alsohave its own **type** of name, and durability. Every **bionic** **type** has an identification number with the following format:

“TYXXX”

X => number between 0 – 9

Every customer that wants to buy bionic at **Uncover Bionic** must follow the **sales transaction procedures**, those are:

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

“CUXXX”

X => number between 0 – 9

* Customer can purchase **more than one product** in every transaction.

Every vendor that wants to sell their ingredient must follow the **purchase transaction procedures**; those are:

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

“VEXXX”

X => number between 0 – 9

* Vendor can sell **more than one bionic** in every transaction.

**Notes:**

* Bionic type durability must between 50 and 100.
* Bionic type name must be either “Hand”, “Foot”, “Leg”, “Arm”, or “Eye” (without quote).
* Staff gender must be either “Male” or “Female” (without quote).
* Customer gender must be either “Male” or “Female” (without quote).
* Vendor email must contain character “@” (without quote).
* Vendor address must be more than 10 characters.
* Purchase and sales bionic quantity must be more than 0.

Now **Athene** still using manual management system to maintain the **sales** and **purchase transactions**. **Athene** needto 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 **Uncover Bionic**,Athene asked you to provide some query that resulting important data. The requirements that asked from her are:
2. Display StaffId, Total Purchase (obtained from total of purchase transaction), VendorName where vendor name ends with “Tillman” word and total purchase is greater than 1.
3. Display StaffId, StaffName, StaffSalary, Total Bionic Sold (obtained from total bionic quantity from sales transaction) for staff salary between 8.000.000 and 10.000.000 and Total Bionic Sold is greater than 10.
4. Display SalesId, CustomerName, CustomerGender, Total Quantity Purchased (obtained from total of bionic quantity purchased), Total Bionic Purchased (obtained from total of bionic purchased), Sales Date (obtained from SalesDate in ‘Mon dd, yyyy’ format) for female customer and Total Quantity Purchased more than 7.
5. Display Purchase Id (replace ‘PU’ with ‘Purchase ’ word), Total Purchase Detail (obtained from total purchase transaction), Highest Bionic Price (obtained from greatest bionic price), and TypeName for TypeName which is Hand and Total Purchase Detail more than 1.
6. Display StaffName, StaffSalary (add ‘Rp. ’ in front of StaffSalary), StaffGender, PurchaseDate (purchase date in ‘Mon dd, yyyy’ format), VendorName for staff salary more than average of all staff salary and purchase transaction take place in 2020.

(**alias subquery**)

1. Display SalesId, StaffId, StaffName, StaffSalary, StaffGender (obtained from the first character of staff gender), BionicName. Total Sold Price (obtained from BionicPrice multiply by Quantity), SalesDate (sales date in ‘dd Mon yyyy’ format) for Total Sold Price greater than average of bionic price from total transaction and staff salary below 5.000.000.

(**alias subquery**)

1. Display SalesId (replace ‘SA’ by ‘Sales ‘), SalesDate (sales date in ‘Mon dd, yyyy’ format), Total Quantity (obtained from total quantity followed by ‘ Pc(s)’ word), BionicName, TypeName, TypeDurability for TypeDurability below average durability of bionic type and sales date after 2016.

(**alias subquery**)

1. Display VendorId (replace ‘VE’ with ‘Vendor ’), Total Quantity (obtained from total of quantity followed by ‘ Pc(s)’), BionicId, TypeName, TypeDurability for TypeName which is Eye and Total Quantity more or equals maximum bionic stock then order the results by Total Quantity descendingly.

(**alias subquery**)

1. Create a view named ‘LoyalCustomer’ to show CustomerId, CustomerName, CustomerGender, Total Transaction (obtained from total of sales transaction), Total Bionic Bought (obtained from total Quantity followed by ‘ Pc(s)’) for Total Transaction more than 1 and Total Bionic Bought greater than 10.
2. Create a view named ‘StaffPurchaseRecap’ to show StaffId, StaffName, StaffSalary, Total Purchase Finished (obtained from total purchase transaction), Total Bionic Purchased (obtained from total of Quantity) for purchase occurred after 2016 and Total Purchase Finished more than 1.

**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