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| **Project Case** |  |
| ISYS6169 | T0206  Database Systems |
| **Information Systems** | **O192-ISYS6169-LX03-00** |
| ***Valid on*** *Odd Semester Year 2018/2019* | **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 Word 365  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, PNG, SQL |

## Soal

*Case*

**Bluejack Sport Station**

**Bluejack Sport Station** is a shop created by the Bluejack community. **Bluejack Sport Station** manages their transaction by either buying or selling sport items that has been listed by the owner. The transactions are **selling a sport outfit to a customer** or **purchasing sport equipment from a vendor to restock storage**.

Every staff that work at **Bluejack Sport Station** has a task to handle **sport items** **purchase** and **sales**. Every staff must follow the procedures to become a staff, those are:

* Every **staff** hired must include some personal information like name, position, gender, date of birth, and active date. Every **staff** has an identification number with the following format:

“STXXX”

X => number between 0 – 9

* Every staff has been assigned a **position** in the shop and the **position** has its own name and salary. Every **position** has an identification number with the following format:

“POXXX”

X => number between 0 – 9

* Everysport **item** bought and sold by **Bluejack Sport Station** has its own name, brand, sport category, stock, and sales price. Every sport **item** has an identification number with the following format:

“ITXXX”

X => number between 0 – 9

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

“TYXXX”

X => number between 0 – 9

* Each sport item also has their owncompany **brand** who created them. The **brand** has a brand name, brand origin (country) and an identification number with the following format:

“BRXXX”

X => number between 0 – 9

Every item sold that occurs at **Bluejack Sport Station** must follow the **sales transaction procedures**, which are:

* Every **sale** must be served by a staff who will note and report the transaction along with the staff data, transaction date, item sold, and quantity. The report also has an identification number that follow the format bellow:

“SAXXX”

X => number between 0 – 9

* Every **sale** may have **more than one item** in every transaction.

Every purchase made when **Bluejack Sport Station** needs to do item restock must follow the **purchase transaction procedures**, which are:

* Every **purchase** must be served by a staff who will report the transaction along with the staff data, transaction date, item purchased, and quantity. The report will have an identification number that follows the following format:

“PUXXX”

X => number between 0 – 9

* Every **purchase** may have **more than one item** in every transaction.

**Notes:**

* Staff gender **must be either** “**Male**” or “**Female**” (without quote).
* Staff **must be at least 17 years** old.
* Item price and item stock **must be more than 0**.
* Purchase and sales quantity **must be more than 0**.
* Purchase and sales transaction **must not happen on Sunday**.

Currently **Bluejack Sport Station** operate their management using a manual management system to maintain the **sales** and **purchase transactions**. As the head database administrator in the company,you are requiredto create a database system that is able to 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 **Staff Position** table, the table must be filled with the following data:

|  |  |
| --- | --- |
| **Position Name** | **Position Salary** |
| Cashier | 3.500.000 |
| Accountant | 3.800.000 |
| Sales | 3.900.000 |
| Supervisor | 4.200.000 |
| Officer | 5.000.000 |
| Manager | 6.200.000 |

1. Create query using DML syntax to **simulate** the **transactions** process for **sales** and **purchase transactions**.
2. To support database management process in **Bluejack Sport Station,** the manager of **Bluejack Sport Station** requires you to provide some **query** that resulting important data. The requirements that asked from her are:
3. Display ItemName and Total Item Income (obtained by adding ‘Rp. ’ in front of the total of item price multiplied by sales quantity) for every item which item ID is ‘IT003’ and the sales transaction happens on Tuesday.
4. Display StaffName, Age (obtained from the year difference between StaffDOB and today), Total Purchased Item (obtained from the number of purchased item) for every staff whose staff gender is female and age older than 25 years old.
5. Display StaffName, Item Variant Sold (obtained from the variant of item sold), and Total Sold Item (obtained from the number of sold item) for every staff whose staff name is more than one word and staff position ID is even number.
6. Display CategoryName, Sales Revenue (obtained by adding ‘Rp. ’ in front of the total of price multiplied by quantity), Total Sales Transaction (obtained from the total of sales transaction) for every item which item category contains ‘a’ character and the sales transaction is more than once.
7. Display ItemName, Price (obtained by adding ‘Rp. ‘ in front of item price), CategoryName, Country Code (obtained from the first 3 letters of BrandOrigin in upper case format) for every item which item price is below 10.000.000 and item price is the highest among all item.

(**alias subquery**)

1. Display Name (obtained by adding ‘Mrs. ’ in front of staff’s last name), StaffGender, and PositionSalary for every staff whose position salary is higher than the average salary and the staff gender is ‘Female’.

(**alias subquery**)

1. Display CategoryCode (obtained from the first two letters of CategoryName in uppercase format), ItemName, Price (obtained by adding ‘Rp. ’ in front of ItemPrice), ItemStock, Total Sold Item (obtained by the number of sold item) for every item which item’s stock is lower than average of all item stock and item category name doesn’t contains ‘a’ character.

(**alias subquery**)

1. Display CategoryName, Ball Name (obtained by omitting the word ‘ Ball’ in item name), Item Cost (obtained by adding the ‘Rp. ’ in front of item price), Total Transactions (obtained from total of purchase transaction ended with ‘ transaction(s)‘), and Predicted Income (obtained by adding ‘Rp. ’ in front of total of purchase transaction multiplied by item price) for every item which item name contains “ball” and ItemPrice is the highest among all item.

(**alias subquery**)

1. Create a view named '**StaffReport**' to display StaffName, Total Salary (obtained from total month of work, starts from staff active date until today, multiplied by position salary), Transaction Served (obtained from total of sales transaction that the staff has served), and Total Sold Item (obtained from the number of sold item) for every staff who has been actively working and the staff position is not ‘Manager’.
2. Create a view named '**ItemBrandReport**' to display ItemName, BrandName, Max Quantity Sold (obtained from the maximum of quantity sold), and Min Quantity Sold (obtained from the minimum of quantity sold) for every item which the length of item name is below 15 characters and brand name must be 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