Basic Databases – Report03

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This package consists of 8 tasks. If you cannot solve a complete problem, try to give a partial answer. Remember to write your name, and identifier.

Source data: **Database: AdventureWorks2017**

Task 1

Table: **Person.Person**

Define the following SELECT statements:

1.1 Find people with the last name containing:

- the letter 'b'
- the letter 'b' at the last position
- the letter 'd' many times (at least twice)
- the first two letters 'AC' or 'Za'

LastName	FirstName
Abbas	Syed
Abel	Catherine
Abercrombie	Kim
…	…

Rec: 3/?

1.2 How many person has last name which starts with 'Ca' and ends with 'l'

Number of last names Ca...l
?

Solution:

1.1

```
SELECT firstName, lastName
FROM Person.Person
WHERE lastName LIKE '%b%';
```

First Name	Last Name
Syed	Abbas
Catherine	Abel
Kim	Abercrombie

Rec:3/1744

```
SELECT firstName, lastName
FROM Person.Person
WHERE lastName LIKE '%b';
```

First Name	Last Name
Teanna	Cobb

Rec:1/1

```
SELECT firstName, lastName
FROM Person.Person
WHERE lastName LIKE '%d%d%';
```

First Name	Last Name
Alvaro	De Matos Miranda Filho
Alexander	Deborde
Dick	Dievendorff

Rec:4/124

```
SELECT firstName, lastName
FROM Person.Person
WHERE (lastName LIKE 'Ac%') OR (lastName LIKE 'Za%');
```

First Name	Last Name
Humberto	Acevedo
Gustavo	Achong
Pilar	Ackerman

Rec:4/7

1.2.

```
SELECT COUNT(*) AS 'Number of last names Ca…l'
FROM Person.Person
WHERE (lastName LIKE 'Ca%') AND (lastName LIKE '%l');
```

Number of last names Ca…l
92

Task 2

Table: **HumanResources.Employee, Person.Person**

Define the following SELECT statement:

- Prepare a list of employees based on the data from two tables according to the following definition:

EmpId	Name	Job title	Gender
1	Ken, Sánchez	Chief Executive Officer	Male
…	…	…	…
5	Gail, Erickson	Design Engineer	Female
…	…	…	…

Solution:

```
SELECT E.BusinessEntityID AS EmpID, P.FirstName + ', ' + P.LastName AS Name, E.JobTitle AS
'Job Title', E.Gender
FROM HumanResources.Employee AS E, Person.Person AS P
WHERE E.BusinessEntityID = P.BusinessEntityID;
```

EmpID	Name	Job Title	Gender
25	James, Hamilton	Vice President of Production	M
26	Peter, Krebs	Production Control Manager	M
27	Jo, Brown	Production Supervisor - WC60	F

Rec: 3/290

Task 3

Define the following SELECT statement:

- Prepare a list of addresses based on data from the table Person.Address having the following attributes:

  AddressLine1 +' '+ AddressLine2 AS Address, City

Note:

Use the following constructions to eliminate the NULL values: **COALESCE** expression

Address	City
…	…
081, boulevard du Montparnasse	Seattle
084, boulevard du Montparnasse	Les Ulis
1 Corporate Center Drive	Miami
1 Mt. Dell Drive	Portland
…	…

Solution:

```
SELECT COALESCE(AddressLine1 +' '+ AddressLine2, AddressLine1)  AS Address, City
FROM Person.Address
```

Address	City
#500-75 O'Connor Street	Ottawa
#9900 2700 Production Way	Burnaby
00, rue Saint-Lazare	Dunkerque

Rec: 3/19614

Task 4

Table: **Person.Address**

Define the following SELECT statement:

- Determine the maximum length of data in the column AddressLine1

Solution:

```
SELECT MAX(LEN(AddressLine1)) AS 'Longest AddressLine1'
FROM Person.Address;
```

Longest AddressLine1
39

Task 5

Table: **Production.Product**

Define the following SELECT statement:

- Find all of the rows in the table Product where a value does not exist for a column „color”. Schema of the resulting table is as follows: ProductID, Name, Color

ProductID	Name	Color
1	Adjustable Race	Indeterminate
…	…	…
316	Blade	Indeterminate
…	…	…

Solution:

```
SELECT ProductID, Name, COALESCE(Color, 'Indeterminate') AS Color
FROM Production.Product
WHERE Color IS NULL;
```

ProductID	Name	Color
1	Adjustable Race	Indeterminate
2	Bearing Ball	Indeterminate
3	BB Ball Bearing	Indeterminate

Rec:3/248

Task 6

Table: **Sales.SalesOrderDetail**

Define the following SELECT statements:

- Determine the number of different products in each Order:

SalesOrderID	Number of products
…	…
43661	15
…	…
43663	1
…	…

Solution:

```
SELECT SalesOrderID, COUNT(*) AS 'Number of products'
FROM Sales.SalesOrderDetail
GROUP BY SalesOrderID
```

SalesOrderID	Number of products
43659	12
43660	2
43661	15

Rec: 3/31465

- Retrieve orders that have more than 70 items

SalesOrderID	Number of products
…	…
51721	72
…	…

Solution:

```
SELECT SalesOrderID, COUNT(*) AS 'Number of products'
```

```
FROM Sales.SalesOrderDetail
GROUP BY SalesOrderID
HAVING COUNT(*)>70;
```

SalesOrderID	Number of products
51160	**71**
51721	**72**
51739	**72**
53465	**71**

Rec:4/4

Task 7

Define the following SELECT statements:

- Determine the number of employees with the same titles

Job Title	Number of employees
Production Technician - WC10	17
Production Technician - WC45	15
Sales Representative	14
Buyer	9
Marketing Specialist	5
…	…

Solution:

```
SELECT JobTitle, COUNT(*) AS 'Number of employees'
FROM HumanResources.Employee
GROUP BY JobTitle;
```

JobTitle	Number of employees
Accountant	2
Accounts Manager	1
Accounts Payable Specialist	2

Rec:3/67

- Determine job titles on which work the most employees

Solution:

```
BEGIN
	DECLARE @maxNumber INT;
	SELECT @maxNumber = COUNT(*) FROM HumanResources.Employee
                                                    GROUP BY JobTitle
                                                    ORDER BY COUNT(*) ASC;

	SELECT JobTitle
	FROM HumanResources.Employee
	GROUP BY JobTitle
	HAVING COUNT(*)=@maxNumber;
END
```

JobTitle
Production Technician - WC40
Production Technician - WC50
Production Technician - WC60

Rec:3/3

Task 8

Tables: **SalesOrderDetail, SpecialOffer, Product**

Define the following SELECT statement:

- Find products in each order that were sold with "Seasonal Discount"

OrderID	ProductID	Name	Order quantity	Type
46604	711	Sport-100 Helmet, Blue	3	Seasonal Discount
46604	707	Sport-100 Helmet, Red	4	Seasonal Discount
46604	708	Sport-100 Helmet, Black	4	Seasonal Discount
46605	708	Sport-100 Helmet, Black	1	Seasonal Discount
46605	711	Sport-100 Helmet, Blue	2	Seasonal Discount
46605	707	Sport-100 Helmet, Red	2	Seasonal Discount

Solution:

```
SELECT S.SalesOrderID AS 'OrderID', P.ProductID, P.Name, S.OrderQty AS 'Order Quantity',
O.Type
FROM Sales.SalesOrderDetail AS S, Sales.SpecialOffer AS O, Production.Product AS P
WHERE S.ProductID = P.ProductID AND S.SpecialOfferID = O.SpecialOfferID AND O.Type =
'Seasonal Discount';
```

OrderID	ProductID	Name	Order Quantity	Type
46604	711	Sport-100 Helmet, Blue	3	Seasonal Discount
46604	707	Sport-100 Helmet, Red	4	Seasonal Discount
46604	708	Sport-100 Helmet, Black	4	Seasonal Discount

Rec: 3/182

Please do not forget about the conclusions being a summary of considered problems and proposed solutions!

In this lab we were presented with the problems regarding defining the SQL SELECT statements on the tables, given the required output. And we have proposed the solution for every such problem, defining the SELECT statement according to the required result.