Database Advance Job sheet 3

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Practicum 1

1. Write a SELECT query to display the columns that contain:

a. The current date and time. Name the alias currentdatetime

b. The current time (hour) only. Name the alias currentdate

c. Current year only. Name the alias currentyear

d. This month number (number) only. Name the alias currentmonth

e. Only the number of days in this month. Name the alias currentday

f. The nth week number of the year only. Name the alias currentweeknumber

g. The name of the current month based on the currentdatetime column. Give the alias currentmonthname

Code:

practicum1.sql

week3 > Lab Exercise P5 > practicum1.sql

```
1  SELECT
2      GETDATE() AS currentdatetime,
3      CONVERT(DATE, GETDATE()) AS currentdate,
4      CONVERT(TIME, GETDATE()) AS currenttime,
5      YEAR(GETDATE()) AS currentyear,
6      MONTH(GETDATE()) AS currentmonth,
7      DAY(GETDATE()) AS currentday,
8      DATEPART(WEEK, GETDATE()) AS currentweeknumber,
9      DATENAME(MONTH, GETDATE()) AS currentmonthname;
```

Result:

practicum1.sql

RESULTS CTRL+AL

	currentdatetime	currentdate	currenttime	currentyear	currentmonth	currentday	currentweeknumber	currentmonthname
1	2023-10-11 10:1...	2023-10-11	10:15:55.5600...	2023	10	11	41	October

2. Can the currentdatetime alias be used in [Problem-1-b] to replace the currentdate alias? Explain!

- **Yes it can, but it'll make confusion when we execute a query because both aliases are the same.**

practicum1.sql

week3 > Lab Exercise P5 > practicum1.sql

```sql
SELECT
    GETDATE() AS currentdatetime,
    CONVERT(DATE, GETDATE()) AS currentdatetime,
    CONVERT(TIME, GETDATE()) AS currenttime,
    YEAR(GETDATE()) AS currentyear,
    MONTH(GETDATE()) AS currentmonth,
    DAY(GETDATE()) AS currentday,
    DATEPART(WEEK, GETDATE()) AS currentweeknumber,
    DATENAME(MONTH, GETDATE()) AS currentmonthname;
```

practicum1.sql

RESULTS

	currentdatetime	currentdatetime
1	2023-10-11 10:2...	2023-10-11

Practicum 2

3. Write a SELECT query using several different T-SQL functions (CAST, CONVERT, other specific functions, etc.) to display the date August 17, 1945. Name somedate as the column name alias.

```sql
SELECT
    CAST('1945-08-17' AS date) AS somedate,
    CONVERT(VARCHAR(50), '1945-08-17', 107) AS somedate,
    PARSE('1945-08-17' AS date using 'en-US') AS somedate;
```

practicum1.sql

RESULTS

	somedate	somedate	somedate
1	1945-08-17	1945-08-17	1945-08-17

Practicum 3

4. Write a SELECT query that returns several columns containing:

a. The date and time 3 months ahead of the current time. Name the alias threemonths.

b. The number of days between the current date and the first column (threemonths in point a above). Name it diffdays.

c. The number of weeks between August 17, 1945 and October 1, 2018. Use the alias diffweeks.

d. The first day of the month based on the current date and time. Use the alias firstday.

practicum3.sql

week3 > Lab Exercise P5 > practicum3.sql

```
1  SELECT
2      DATEADD(MONTH, 3, GETDATE()) AS threemonths,
3      DATEDIFF(DAY, GETDATE(), DATEADD(MONTH, 3, GETDATE())) AS
       diffdays,
4      DATEDIFF(WEEK, '1945-08-17', '2018-10-01') AS diffweeks,
5      DATEADD(DAY, 1 - DAY(GETDATE()), GETDATE()) AS firstday;
```

practicum3.sql

RESULTS CTRL+AL

	threemonths	diffdays	diffweeks	firstday
1	2024-01-11 13:14:06.593	92	3816	2023-10-01 13:14:06.593

Practicum 4

5. Write a T-SQL query to get the column named isitdate in the table Sales.Somedates table. Then create a new column called converteddate with date data type based on the isitdate column. If the data in the isitdate column cannot be converted to the data type date, return as NULL.

```
SELECT
    isitdate,
    TRY_CAST(isitdate AS date) AS coverteddate
FROM Sales.Somedates;
```

RESULTS

	isitdate	coverteddate
1	20110101	2011-01-01
2	20110102	2011-01-02
3	20110103X	*NULL*
4	20110104	2011-01-04
5	20110105	2011-01-05
6	20110106	2011-01-06
7	20110107Y	*NULL*
8	20110108	2011-01-08

6. What is the difference between the SYSDATETIME and CURRENT_TIMESTAMP functions?

- **The difference between both is SYSDATETIME has more precision timestamps than CURRENT_TIMESTAMP.**

7. What is the general format of the DATE type?

- **YYYY-MM-DD**

Practicum 5

8. Write a SELECT query to get the unique data in the custid column in the table Sales.Orders table. Filter the result to only show orders in February 2008 only.

```sql
SELECT
    custid, CONVERT(DATE, orderdate) AS orderdate
FROM Sales.Orders
WHERE orderdate >= '2008-01-01' AND orderdate <= '2008-02-29';
```

RESULTS

	custid	orderdate
1	55	2008-01-01
2	88	2008-01-01
3	42	2008-01-01
4	47	2008-01-02
5	66	2008-01-02
104	30	2008-02-26
105	37	2008-02-26
106	62	2008-02-26
107	62	2008-02-27
108	80	2008-02-27
109	64	2008-02-27

Practicum 6

9. Write a SELECT query that displays the following 3 columns:

a. Current date and time

b. Earliest date of the current month

c. The last date of the month.

```
SELECT
    CONVERT(DATE, GETDATE()) AS curentdate,
    CONVERT(DATE, DATEADD(MONTH, DATEDIFF(MONTH, 0, GETDATE()),
    0)) AS firstofmonth,
    EOMONTH(GETDATE()) AS endofmonth;
```

RESULTS

	curentdate	firstofmonth	endofmonth
1	2023-10-11	2023-10-01	2023-10-31

Practicum 7

10. Write a SELECT query to display the orderid, custid, and orderdate columns from the Sales.Orders table. Filter the result to only display orders in the last 5 days in a month of orders.

```
SELECT
    orderid, custid, CONVERT(DATE, orderdate) AS orderdate
FROM Sales.Orders
WHERE DAY(orderdate) > DAY(DATEADD(DAY, -5, EOMONTH
(orderdate)));
```

RESULTS

	orderid	custid	orderdate
1	10267	25	2006-07-29
2	10268	33	2006-07-30
3	10269	89	2006-07-31
4	10290	15	2006-08-27
5	10291	61	2006-08-27
135	11058	6	2008-04-29
136	11059	67	2008-04-29
137	11060	27	2008-04-30
138	11061	32	2008-04-30
139	11062	66	2008-04-30
140	11063	37	2008-04-30

Practicum 8

11. Write a SELECT query against the Sales.Orders and Sales.OrderDetails tables and display the data in the productid column uniquely. Filter the results to only orders placed in the first 10 weeks of 2007.

```
SELECT DISTINCT
    od.productid
FROM Sales.OrderDetails AS od
INNER JOIN Sales.Orders AS o ON o.orderid = od.orderid
WHERE YEAR(o.orderdate) = 2007 AND DATEPART(WEEK, o.orderdate)
<= 10;
```

RESULTS

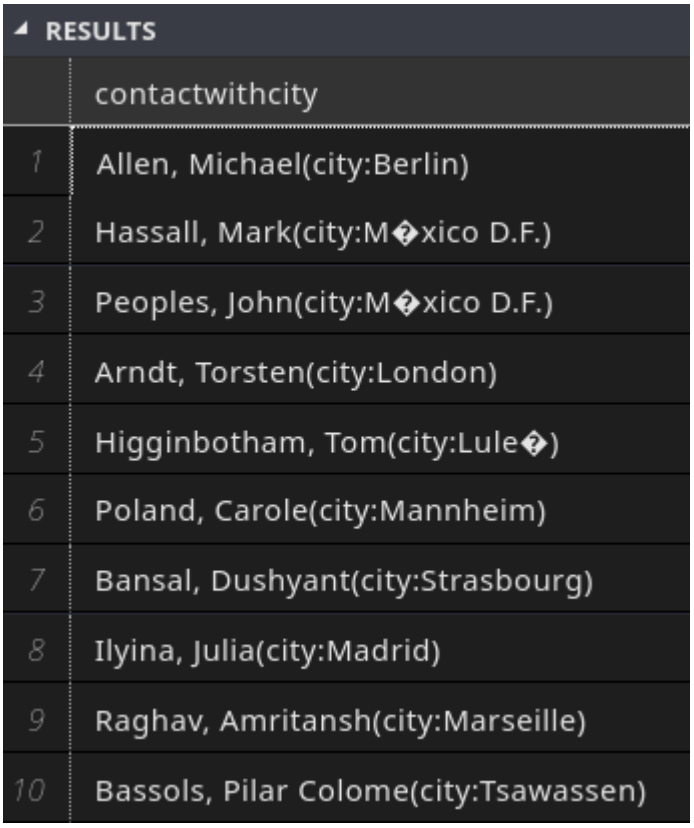
	productid
1	1
2	2
3	3
4	4
5	7
63	73
64	74
65	75
66	76
67	77

Practicum 9

12. Write a SELECT query against the Sales.Customers table and get the columns contactname and columns. Combine the two columns so that it looks like:

Allen, Michael (city:Berlin,)

```
SELECT
    CONCAT(contactname, '(city:', city, ')') AS contactwithcity
FROM Sales.Customers;
```



RESULTS

	contactwithcity
1	Allen, Michael(city:Berlin)
2	Hassall, Mark(city:M&#65533;xico D.F.)
3	Peoples, John(city:M&#65533;xico D.F.)
4	Arndt, Torsten(city:London)
5	Higginbotham, Tom(city:Lule&#65533;)
6	Poland, Carole(city:Mannheim)
7	Bansal, Dushyant(city:Strasbourg)
8	Ilyina, Julia(city:Madrid)
9	Raghav, Amritansh(city:Marseille)
10	Bassols, Pilar Colome(city:Tsawassen)

Practicum 10

13. Copy the SELECT query in Section 10 above and modify it to be able to calculate and add new information from the region column. Treat NULL in the region column as an empty string (for concatenation purpose). When the region data is NULL, modify it to display a column like:

Allen, Michael (city:Berlin, region:)

When the region is not NULL, the column should display as:

Richardson, Shawn (city: Sao Paulo, region: SP)

```
SELECT
    CONCAT(contactname, '(city:', city, ',region:', COALESCE
    (region, ''), ')') AS fullcontact
FROM Sales.Customers;
```

RESULTS

	fullcontact
1	Allen, Michael(city:Berlin,region:)
2	Hassall, Mark(city:M&#65533;xico D.F.,region:)
3	Peoples, John(city:M&#65533;xico D.F.,region:)
4	Arndt, Torsten(city:London,region:)
5	Higginbotham, Tom(city:Lule&#65533;,region:)
6	Poland, Carole(city:Mannheim,region:)
7	Bansal, Dushyant(city:Strasbourg,region:)
8	Ilyina, Julia(city:Madrid,region:)
9	Raghav, Amritansh(city:Marseille,region:)
10	Bassols, Pilar Colome(city:Tsawassen,region:BC)

Practicum 11

14. Write a SELECT query to display the contactname and contacttitle columns from the Sales.Customers table. Filter to only display contact names that whose first character is 'A' to 'G' only.

```
SELECT
    contactname, contacttitle
FROM Sales.Customers
WHERE LEFT(contactname, 1) BETWEEN 'A' AND 'G';
```

RESULTS

	contactname	contacttitle
1	Allen, Michael	Sales Representative
2	Arndt, Torsten	Sales Representative
3	Bansal, Dushyant	Marketing Manager
4	Bassols, Pilar Colome	Accounting Manager
5	Benito, Almudena	Marketing Manager
6	Birkby, Dana	Sales Representative
7	Boseman, Randall	Sales Agent
8	Bueno, Janaina Burdan, ...	Accounting Manager
9	Carlson, Jason	Marketing Manager
10	Cavaglieri, Giorgio	Sales Manager

Practicum 12

15. Write a SELECT query to display the contactname column of the table Sales.Customers table and replace all commas with an empty string. Then, based on this column, add a column called lastname which contains all the characters before the comma.

```
SELECT
    REPLACE(contactname, ',', '') AS contactname,
    SUBSTRING(contactname, 1, CHARINDEX(',', contactname) -1)
    AS lastname
FROM Sales.Customers;
```

RESULTS

	contactname	lastname
1	Allen Michael	Allen
2	Hassall Mark	Hassall
3	Peoples John	Peoples
4	Arndt Torsten	Arndt
5	Higginbotham...	Higginbotham
6	Poland Carole	Poland
7	Bansal Dushy...	Bansal
8	Ilyina Julia	Ilyina
9	Raghav Amrit...	Raghav
10	Bassols Pilar C...	Bassols

Practicum 12.1

16. Write a SELECT query to display the contactname column of the table Sales.Customers table and replace all commas with an empty string. Then, based on that column, add a column called firstname that contains all the characters before the comma.

```
SELECT
    REPLACE(contactname, ',', '') AS newcontactname,
    RIGHT(contactname, LEN(contactname) - CHARINDEX(',',
    contactname)) AS firstname
FROM Sales.Customers;
```

RESULTS

	newcontactname	firstname
1	Allen Michael	Michael
2	Hassall Mark	Mark
3	Peoples John	John
4	Arndt Torsten	Torsten
5	Higginbotham Tom	Tom
6	Poland Carole	Carole
7	Bansal Dushyant	Dushyant
8	Ilyina Julia	Julia
9	Raghav Amritansh	Amritansh
10	Bassols Pilar Colome	Pilar Colome

Practicum 13

17. Write a SELECT query to display the contactname column of the table Sales.Customers table. Based on this column, add a column containing the 6-digit code of the customer code, formatted with the letter C and a leading 0. For example, custid with code 1 is displayed as C00001, etc.

```
SELECT
    custid,
    'C' + RIGHT('0000' + CONVERT(VARCHAR(10), custid), 10) AS
    custnewid
FROM Sales.Customers;
```

RESULTS

	custid	custnewid
1	1	C00001
2	2	C00002
3	3	C00003
4	4	C00004
5	5	C00005

Practicum 14

18. Write a SELECT query to display the contactname column of the table Sales.Customers table. Based on this column, add a column that displays the number of 'a' characters in the contact name. (Hint: Use the string functions REPLACE and LEN). Sort the results from the most.

```sql
SELECT
    contactname,
    LEN(contactname) - LEN(REPLACE(contactname, 'a', '')) AS
    numberofa
FROM Sales.Customers
ORDER BY numberofa DESC;
```

RESULTS

	contactname	numberofa
1	Raghav, Amritansh	4
2	Bueno, Janaina Burdan, Neville	4
3	Khanna, Karan	4
4	San Juan, Patricia	4
5	Marinova, Nadejda	4
6	Syamala, Manoj	4
7	Larsson, Katarina	4
8	Tuntisangaroon, Sittichai	3
9	Wojciechowska, Agnieszka	3
10	Sunkammurali, Krishna	3