



ADATBÁZIS RENDSZEREK

SQL gyakorlat



BUDAPESTI MŰSZAKI
ÉS GAZDASÁGTUDOMÁNYI EGYETEM
Építőmérnöki Kar - építőmérnöki képzés 1782 óta

Fotogrammetria és Térinformatika Tanszék

Krausz Nikol, Molnár Bence

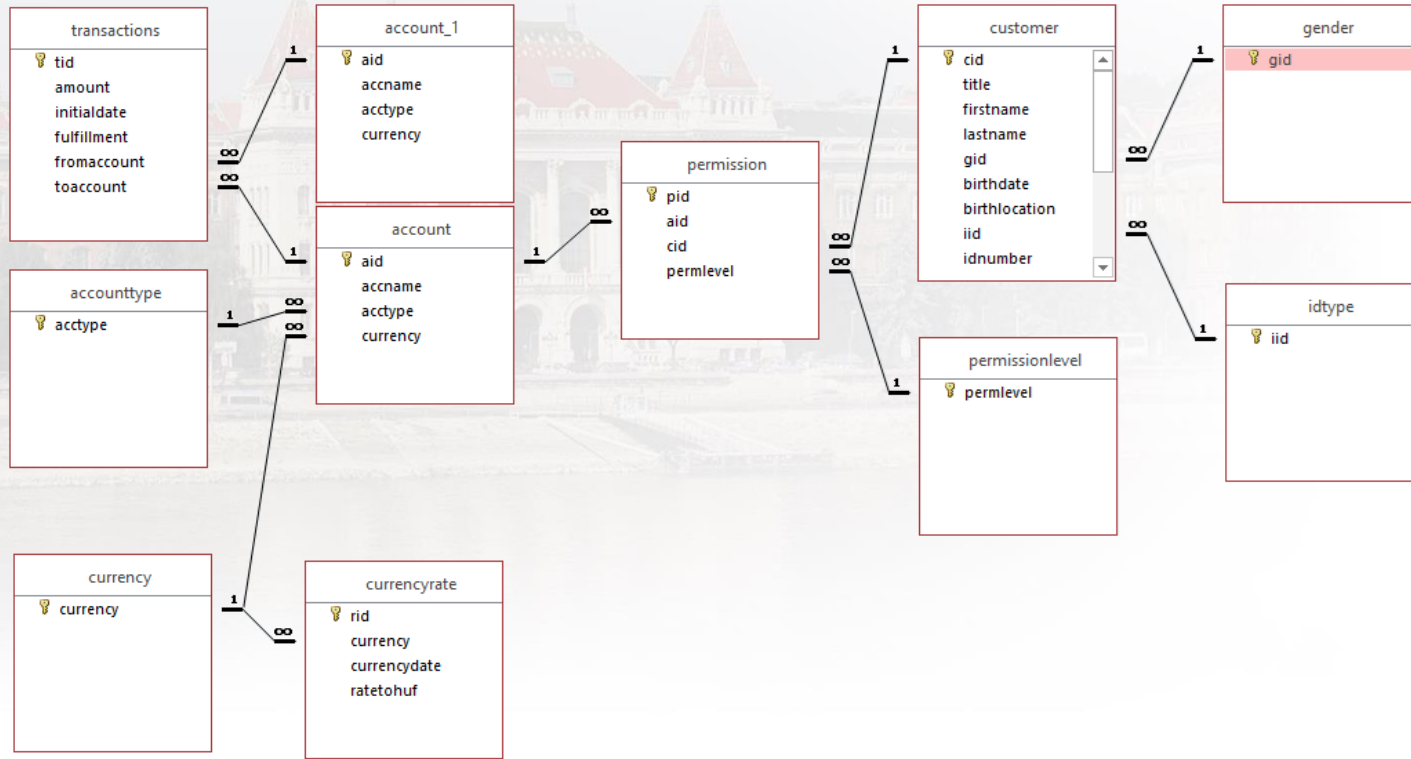
2022.04.20.

MAI TÉMÁINK

Lekérdezések megfogalmazása SQL-ben

- Vetítés
- Összekapcsolás
- Szűrés
- Csoportosítás
- Sorba rendezés
- Sorok korlátozása

RELÁCIÓS SÉMADIAGRAMM



LISTÁZZUK KI AZ ÖSSZES ÜGYFELET

Oszlopok: title, firstname, lastname

Táblák: customer

Kapcsolat: -

```
SELECT  
    title&' '&firstname&' '&lastname  
FROM  
    customer;
```

The screenshot shows the Microsoft Access interface. On the left, the 'All Access Objects' pane is visible with a search bar and a list of tables: account, accounttype, currency, currencyrate, and customer. The main window displays a query named 'Query9' with a single column header 'Expr1000'. The data is presented as a list of customer names, concatenated from title, first name, and last name.

Expr1000
Mr. Brent Moreno
Mrs. Stella Lewis
Mrs. Rachael Maglio
Mr. Jeffrey Bowen
Mr. Danny Jones
Mrs. Deborah Morgan
Mr. Anthony Davis

efűzve, egy cellában!

LISTÁZZUK KI AZ ÖSSZES ÜGYFELET, SZŰRJÜK KI A MR. TITULUSUAKAT

Oszlopok: title, firstname, lastname

The screenshot shows the Microsoft Access interface. On the left, the 'Tables' list is visible, containing the following tables: account, accounttype, currency, currencyrate, and customer. On the right, a query result grid is displayed, titled 'Expr1000'. The grid contains the following data:

Expr1000
Mrs. Stella Lewis
Mrs. Rachael Maglio
Mrs. Deborah Morgan
Mrs. Vickie Gannon
Ms. Patricia Cook
Ms. Kristin Small
Ms. Heather Nixon

```
SELECT title&' '&firstname&' '&lastname
FROM customer
WHERE title<>'Mr.';
```

Összefűzve, egy cellában!

SORDA rendezés: -

Sorok: -

LISTÁZZUK KI AZ ÖSSZES ÜGYFELET ÉS RENDEZZÜK NÉV SZERINT SORRENDBE

Oszlopok: title, firstname, lastname

Táblák: customer

Kapcsolat: -

Szűrés: title<>'Mr.'

Csoportosítás: -

Csoport szűrés: -

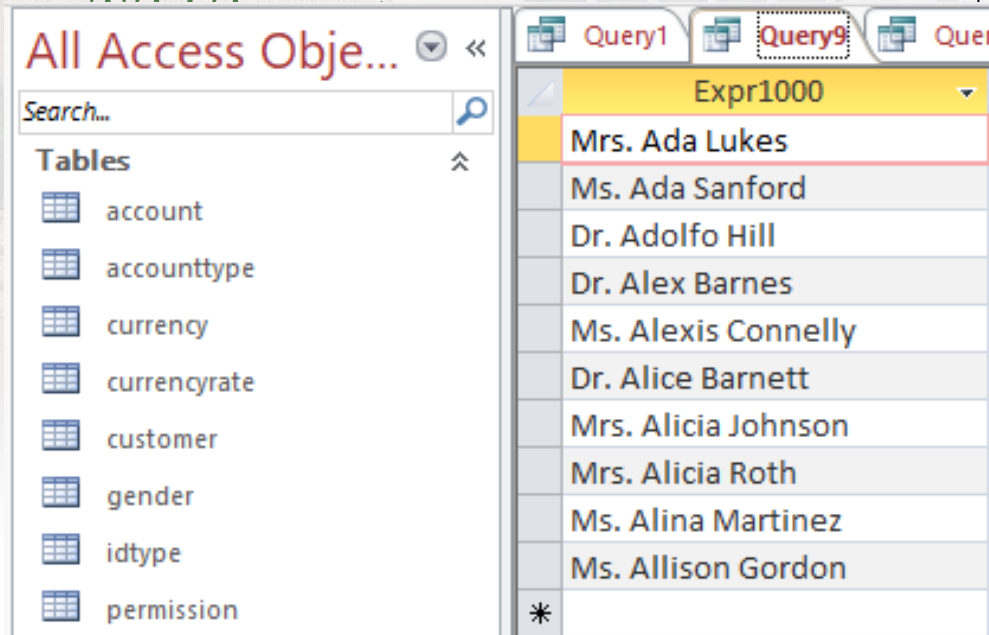
Sorba rendezés: firstname, lastname

Sorok: -

```
SELECT
    title&' '&firstname&' '&lastname
FROM
    customer
WHERE
    title<>'Mr.'
ORDER BY
    firstname, lastname;
```

LISTÁZZUK KI AZ ÖSSZES ÜGYFELET ÉS RENDEZZÜK NÉV SZERINT SORRENDBE, CSAK AZ ELSŐ 10 SOR!

Oszlopok: title, firstname, lastname



All Access Objects

Search...

Tables

- account
- accounttype
- currency
- currencyrate
- customer
- gender
- idtype
- permission

Query1 Query9 Query10

Expr1000
Mrs. Ada Lukes
Ms. Ada Sanford
Dr. Adolfo Hill
Dr. Alex Barnes
Ms. Alexis Connolly
Dr. Alice Barnett
Mrs. Alicia Johnson
Mrs. Alicia Roth
Ms. Alina Martinez
Ms. Allison Gordon
*

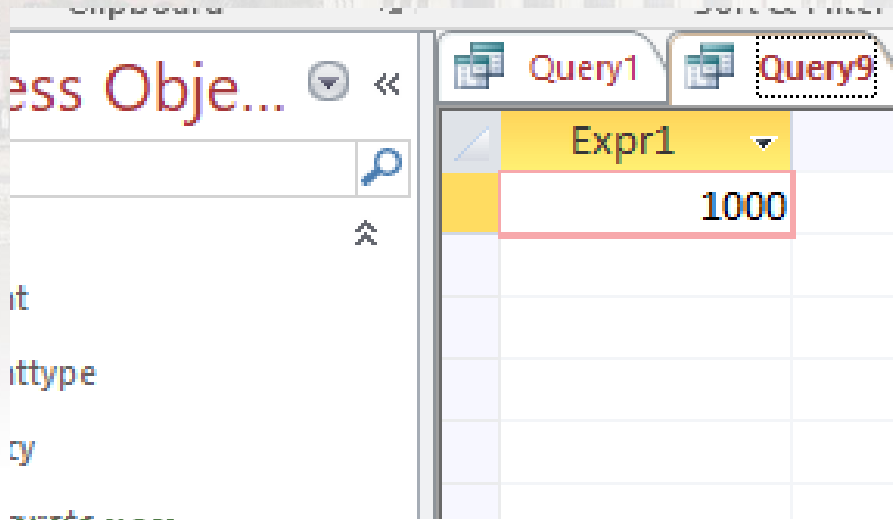
```
SELECT TOP 10
    title & ' ' & firstname & ' ' & lastname
FROM
    customer
WHERE
    title <> 'Mr.'
ORDER BY
    firstname, lastname;
```

ÜGYFELEK SZÁMA

Oszlopok: COUNT(*)

Táblák: customer

```
SELECT  
    COUNT(*)  
FROM  
    customer;
```



The screenshot shows the Microsoft Access interface. On the left, the 'Object Explorer' pane is partially visible. The main window displays a query named 'Query9' with a single result row. The column header is 'Expr1' and the value is '1000'.

Expr1
1000

ÜGYFELEK SZÁMA, AKIK NEM FÉRFIAK

Oszlopok: COUNT(*)

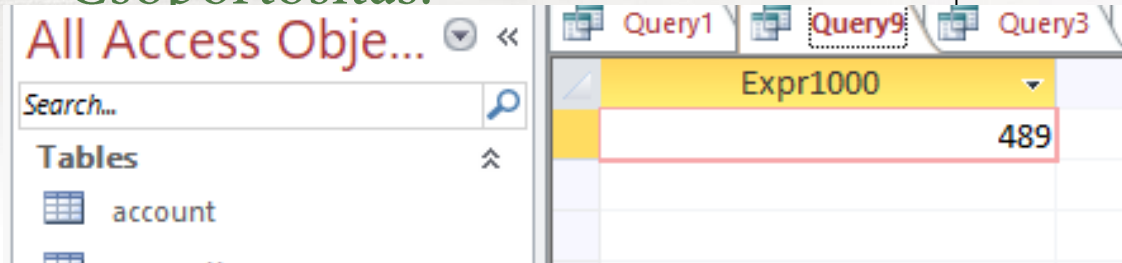
Táblák: customer

Kapcsolat: -

Szűrés: gid<>'male'.

Csoportosítás: -

```
SELECT
    COUNT(*)
FROM
    customer
WHERE
    gid<>'male';
```



Expr1000
489

ÖSSZES PÉNZFORGALOM

Oszlopok: SUM(amount)

Táblák: transaction

Kapcsolat: -

Szűrés: -

Csoportosítás: -

Csoport szűrés: -

Sorba rendezés: -

Sorok: -

```
SELECT
    SUM(amount)
FROM
    transaction;
```

HUF-EUR ÁRFOLYAM MAXIMUM

Oszlopok: MAX(ratetohuf)

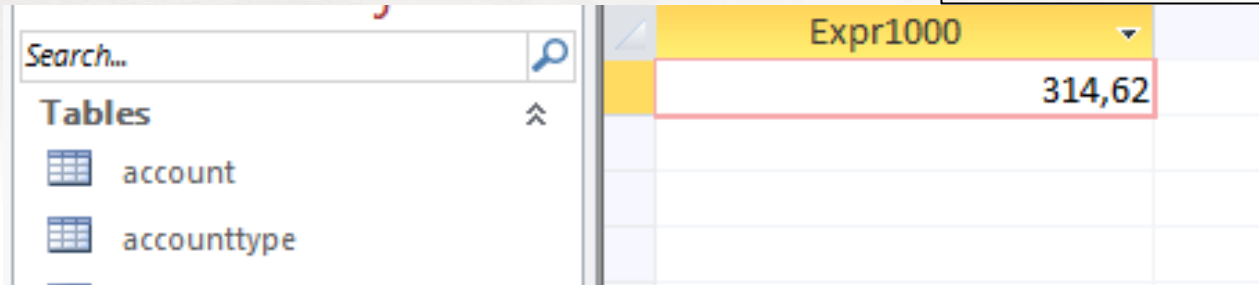
Táblák: currencyrate

Kapcsolat: -

Szűrés: currency='EUR'

Csoportosítás: -

```
SELECT
    MAX(ratetohuf)
FROM
    currencyrate
WHERE
    currency='EUR';
```



The screenshot shows a database query result in a software interface. On the left, there is a 'Search...' bar and a 'Tables' list containing 'account' and 'accounttype'. The main area displays a table with a yellow header row labeled 'Expr1000'. The first data row shows the value '314,62'.

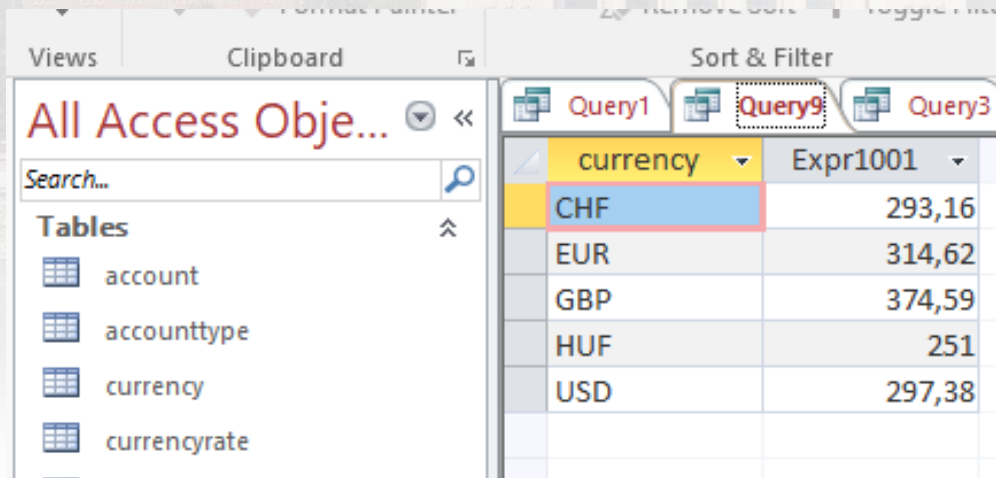
Expr1000
314,62

ÁRFOLYAM MAXIMUM

Oszlopok: currency, MAX(ratetohuf)

Táblák: currencyrate

```
SELECT
    currency, MAX(ratetohuf)
FROM
    currencyrate
GROUP BY
    currency;
```



The screenshot shows the Microsoft Access interface. On the left, the 'All Access Objects' pane lists tables: account, accounttype, currency, and currencyrate. The main window displays a query named 'Query9' with two columns: 'currency' and 'Expr1001'. The data is as follows:

currency	Expr1001
CHF	293,16
EUR	314,62
GBP	374,59
HUF	251
USD	297,38

Sorok: -

Nemsokára mellé tesszük a dátumot is!

MELYIK BANKSZÁMLÁHOZ FÉR HOZZÁ A LEGTÖBB EMBER?

Emlékeztetőül a permission tábla szerkezete

Oszlopok: aid, COUNT(*)

Táblák: permission

Kapcsolat: -

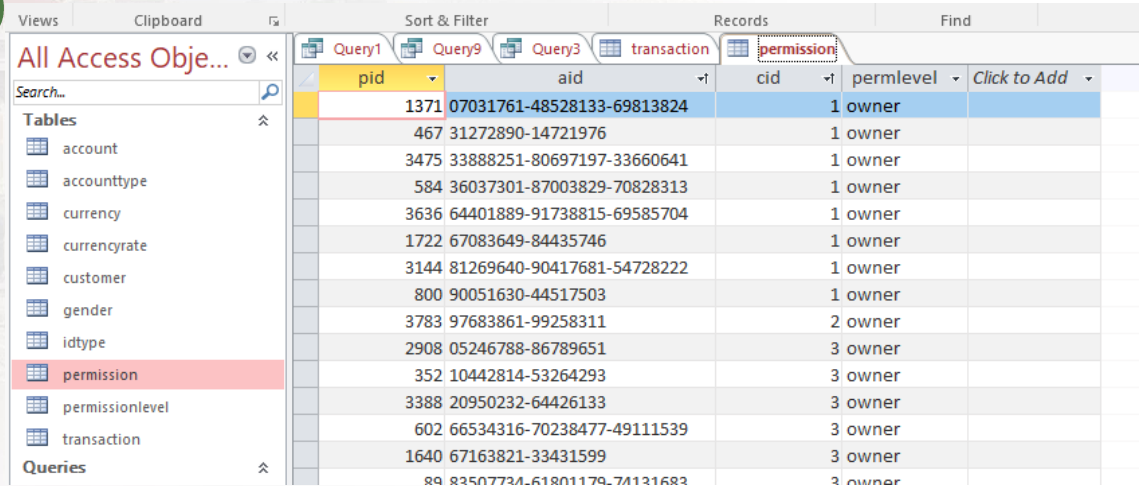
Szűrés: -

Csoportosítás: aid

Csoport szűrés: -

Sorba rendezés: COUNT(*)

Sorok: -



The screenshot displays a database management tool interface. On the left, a sidebar titled 'All Access Objects' lists various database tables, with 'permission' highlighted in red. The main area shows a table view of the 'permission' table. The table has columns: 'pid', 'aid', 'cid', and 'permlevel'. The first row is highlighted in blue. The table contains 13 rows of data.

pid	aid	cid	permlevel
1371	07031761-48528133-69813824	1	owner
467	31272890-14721976	1	owner
3475	33888251-80697197-33660641	1	owner
584	36037301-87003829-70828313	1	owner
3636	64401889-91738815-69585704	1	owner
1722	67083649-84435746	1	owner
3144	81269640-90417681-54728222	1	owner
800	90051630-44517503	1	owner
3783	97683861-99258311	2	owner
2908	05246788-86789651	3	owner
352	10442814-53264293	3	owner
3388	20950232-64426133	3	owner
602	66534316-70238477-49111539	3	owner
1640	67163821-33431599	3	owner

MELYIK BANKSZÁMLÁHOZ FÉR HOZZÁ A LEGTÖBB EMBER?

Sort & Filter		Rec
Query1	Query9	Query3
transaction		
aid	Expr1001	
78171884-91227545	10	
06684326-26300089	10	
99758242-76257656-19141475	9	
19726924-29805121	9	
29427998-90346996	9	
82351621-04186569	9	
93807336-38250753-10254098	9	
06781933-91757694	9	
74640375-80815842	8	
37291243-18615380	8	
71285733-64801647-47652007	8	
50275028-98726239	8	

```
SELECT
    aid, COUNT(*)
FROM
    permission
GROUP BY
    aid
ORDER BY
    COUNT(*) DESC;
```

MELYIK BANKSZÁMLÁHOZ FÉR HOZZÁ A LEGTÖBB EMBER?

Oszlopok: aid, COUNT(*)

Táblák: permission

Kapcsolat: -

Szűrés:

permlevel='owner' OR

Permlevel='partner'

Csoportosítás: aid

Csoport szűrés: -

Sorba rendezés: COUNT(*)

Sorok: -

```
SELECT
    aid, COUNT(*)
FROM
    permission
WHERE
    permlevel='owner' OR
    permlevel='partner'
GROUP BY
    aid
ORDER BY
    COUNT(*) DESC;
```

LEGTÖBB BANKSZÁMLÁVAL RENDELKEZŐ ÜGYFÉL

Oszlopok: title, firstname, lastname, COUNT(*)

Táblák: customer, permission

title	firstname	lastname	Expr1003
Mr.	Timothy	Lopez	11
Ms.	Larissa	Cardwell	11
Mr.	Michael	Dawson	11
Mr.	Clark	Hook	10
Mr.	Jeremy	Garcia	10
Mr.	Jeffrey	Perry	10
Mrs.	Mary	Keck	10
Mr.	Thomas	Fox	10
Mr.	Bryan	Schumacher	10
Mrs.	Ida	Ash	9
Mr.	Daniel	Green	9
Dr.	Adolfo	Hill	9
Mr	Eric	Riv	9

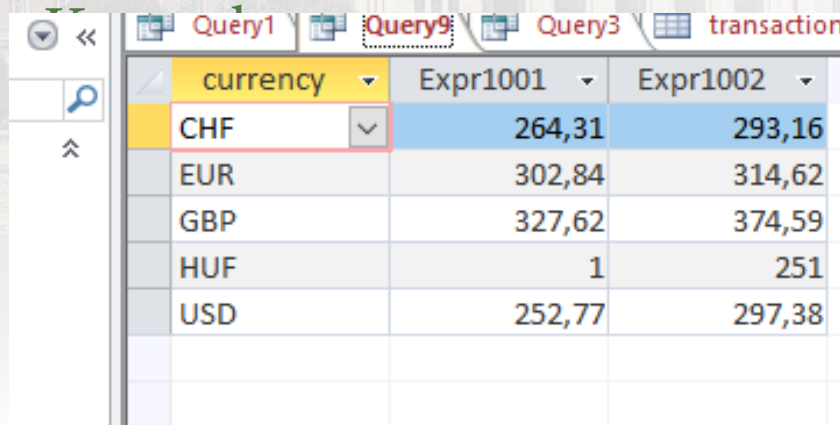
```
SELECT
    title, firstname, lastname, COUNT(*)
FROM
    customer
INNER JOIN
    permission
ON
    customer.cid=permission.cid
GROUP BY
    title, firstname, lastname
ORDER BY
    COUNT(*) DESC;
```

ÁRFOLYAM MIN ÉS MAX

Hiába van meg a maximum érték, a sorát nem azonosítottuk!!!

Oszlopok: currency, MAX(ratetohuf), MIN(ratetohuf)

Táblák: currencyrate



currency	Expr1001	Expr1002
CHF	264,31	293,16
EUR	302,84	314,62
GBP	327,62	374,59
HUF	1	251
USD	252,77	297,38

SELECT

currency,
MIN(ratetohuf),
MAX(ratetohuf)

FROM

currencyrate

GROUP BY

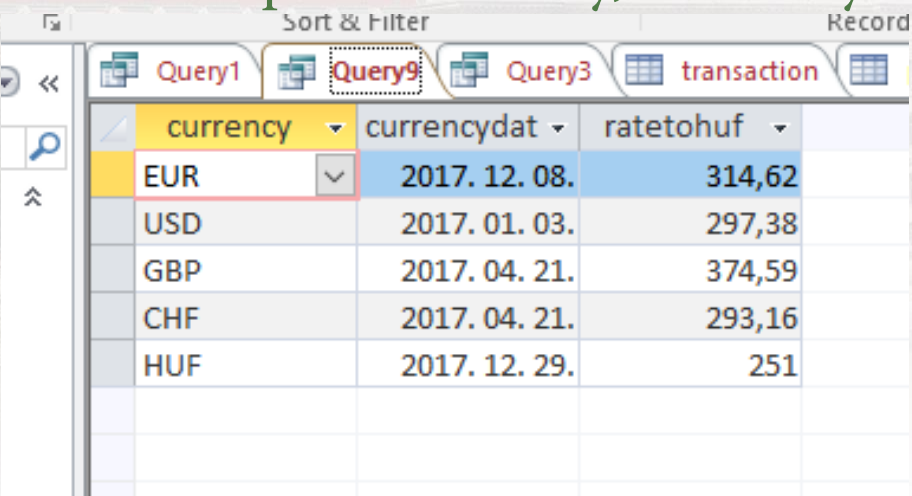
currency;

Sorok: -

ÁRFOLYAM MAXIMUM DÁTUMMAL

Hiába van meg a maximum érték, a sorát nem azonosítottuk!!!

Oszlopok: currency, currencydate, ratetohuf



currency	currencydate	ratetohuf
EUR	2017. 12. 08.	314,62
USD	2017. 01. 03.	297,38
GBP	2017. 04. 21.	374,59
CHF	2017. 04. 21.	293,16
HUF	2017. 12. 29.	251

Sorba rendezés: -

Sorok: -

```
SELECT
    currencyrate.currency,
    currencyrate.currencydate,
    currencyrate.ratetohuf
FROM
    currencyrate
INNER JOIN
    (SELECT currency, MAX(ratetohuf) AS m
     FROM currencyrate GROUP BY currency) AS maxs
ON
    currencyrate.currency=maxs.currency
AND currencyrate.ratetohuf=maxs.m;
```

ÁRFOLYAM MAXIMUM DÁTUMMAL, EGYEZŐNÉL CSAK AZ UTOLSÓT LISTÁZVA

Oszlopok: currency, LAST(currencydate), ratetohuf

Táblák: currencyrate

Kapcsolat: (Előző lekérdezés)

Szűrés: -

Csoportosítás: currency, ratetohuf

Csoport szűrés: -

Sorba rendezés: -

Sorok: -

```
SELECT
currencyrate.currency,
LAST(currencyrate.currencydate),
currencyrate.ratetohuf
FROM
currencyrate
INNER JOIN
(SELECT currency, MAX(ratetohuf) AS m FROM
currencyrate GROUP BY currency) AS maxs
ON
currencyrate.currency=maxs.currency AND
currencyrate.ratetohuf=maxs.m
GROUP BY
currencyrate.currency, currencyrate.ratetohuf;
```

BONYOLULT SQL LEKÉRDEZÉS A HÁZI RENDSZERBEN

```
SELECT users.fullname, users.username, users.mail, gname, users.crid, SUBSTR(u6.fullname, 5, 1), DATE_FORMAT(users.last, '%m/%d %k:%i:%s'),
users.p1, DATE_FORMAT(p1.date, '%m/%d %k:%i:%s'), DATE_FORMAT(p1_d.date, '%m/%d %k:%i:%s'), users.p1_fee, users.p1_spec, users.p1_cor<p1.date, mn1,
users.p2, DATE_FORMAT(p2.date, '%m/%d %k:%i:%s'), DATE_FORMAT(p2_d.date, '%m/%d %k:%i:%s'), users.p2_fee, users.p2_spec, users.p2_cor<p2.date, mn2,
users.p3, DATE_FORMAT(p3.date, '%m/%d %k:%i:%s'), DATE_FORMAT(p3_d.date, '%m/%d %k:%i:%s'), users.p3_fee, users.p3_spec, users.p3_cor<p3.date, mn3,
users.t1, users.t1_group, users.t2, users.t3, grade, u1.p3 u1, u2.p3 u2, u4.p3 u4, u5.p3 u5
FROM users
JOIN groups USING(gid)
JOIN users_grade USING (uid)
LEFT JOIN (SELECT uid, MAX(date) AS date FROM part1 GROUP BY uid) AS p1 USING(uid)
LEFT JOIN (SELECT uid, MAX(date) AS date FROM part1 WHERE date <= '2021-10-01 11:59:59' GROUP BY uid) AS p1_d USING(uid)
LEFT JOIN chain AS c1 ON c1.uid1=uid
LEFT JOIN (SELECT cid AS cid1, COUNT(1) AS mn1 FROM msg AS m1 GROUP BY cid1) AS msg1 ON c1.cid=cid1
LEFT JOIN (SELECT uid, MAX(date) AS date FROM part2 GROUP BY uid) AS p2 USING(uid)
LEFT JOIN (SELECT uid, MAX(date) AS date FROM part2 WHERE date <= '2021-11-05 11:59:59' GROUP BY uid) AS p2_d USING(uid)
LEFT JOIN chain AS c2 ON c2.uid2=uid
LEFT JOIN (SELECT cid AS cid2, COUNT(1) AS mn2 FROM msg AS m2 GROUP BY cid2) AS msg2 ON c2.cid=cid2
LEFT JOIN (SELECT uid, MAX(date) AS date FROM part3 GROUP BY uid) AS p3 USING(uid)
LEFT JOIN (SELECT uid, MAX(date) AS date FROM part3 WHERE date <= '2021-12-10 11:59:59' GROUP BY uid) AS p3_d USING(uid)
LEFT JOIN chain AS c3 ON c3.uid3=uid
LEFT JOIN (SELECT cid AS cid3, COUNT(1) AS mn3 FROM msg AS m3 GROUP BY cid3) AS msg3 ON c3.cid=cid3
LEFT JOIN users u1 ON c3.uid1=u1.uid
LEFT JOIN users u2 ON c3.uid2=u2.uid
LEFT JOIN users u4 ON c1.uid3=u4.uid
LEFT JOIN users u5 ON c2.uid3=u5.uid
LEFT JOIN course ON users.crid=course.crid
LEFT JOIN users u6 ON course.uid=u6.uid
WHERE users.permission=2
ORDER BY users.fullname;
```

BONYOLULT LEKÉRDEZÉS A NEPTUNBÓL

```
SELECT DISTINCT
t100.C_CODE AS "F0",
t100.C_DESCRIPTION AS "F1",
t120.C_CODE AS "F2",
t120.C_NAME AS "F3",
t120.C_NAME_1 AS "F4",
t131.C_NEPTUNCODE AS "F5",
t130.C_TITLE AS "F6",
t130.C_LASTNAME AS "F7",
t130.C_FIRSTNAME AS "F8"
FROM
T_SUBJECT t120,
T_ORGANIZATION t100, T_INTERIORORGANIZATION t101,
T_ORGANIZATION t110, T_INTERIORORGANIZATION t111,
T_COURSE t140
RIGHT JOIN T_CourseTutor t18 ON t140.ID=t18.C_COURSEID
RIGHT JOIN T_Employee t132 ON t18.C_EMPLOYEEID=t132.ID
RIGHT JOIN T_PARTNER t130 ON t132.ID = t130.ID
RIGHT JOIN T_USER t131 ON t132.ID = t131.ID
WHERE t100.ID=t101.ID AND
t100.C_BOSSID = t110.ID AND
t110.ID=t111.ID AND
t120.ID = t140.C_SUBJECTID AND
t120.C_INTERIORORGANIZATIONID = t101.ID AND
(t100.C_CODE LIKE 'EO%')
AND
(t140.C_TERM = 70610) AND
(t140.C_LANGUAGE = 137001) AND
(t140.C_CODE <> 'VK')

ORDER BY
3,
9,
8,
6
```

ÖSSZEFOGLALÁS

Lekérdezések megfogalmazása SQL-ben

- Vetítés
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- Szűrés
- Csoportosítás
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Köszönöm a figyelmet!

Kérdések?



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