# Access practice exercises: Child-support in Illinois

(Adapted from an original NICAR exercise by Jim Mosely, of the St. Louis Post-Dispatch. All of the data sets in this version have been abbreviated from previous versions of this exercise.)

## Data and record layout

When Tim Novak worked for the Post-Dispatch, he knew that Illinois had been lax in collecting child support. He wanted to know how lax. He wondered: If Illinois is not aggressive in collecting child-support from parents who work at private companies, could it possibly be letting state employees get away without paying? To test the idea, he acquired two databases: A list of judicial orders against delinquent parents, and a list of state employees. These are your data tables.

*Orders*

| Field Name | Type | Description |
|---|---|---|
| NAME | Text | Name of debtor, in the form LNAME SUFFIX FNAME MNAME |
| STREET | Text | Street address |
| CITY | Text | City of residence at the time of the order |
| STATE | Text | State of residence at the time of the order |
| ZIP | Text | Zip of residence at the time of the order |
| DOB | Date/Time | Date of Birth |
| ORD_DAT | Date/Time | Date of the order |
| DEBT | Number | Amount of the debt |
| NUM_KIDS | Number | Number of children it applies to |

Note that each record refers to a judicial order, not a person. It's quite possible that one parent has been slapped with more than one judgment. You should also note the format of the name, along with any useful fields for identifying people.

*Payroll*

| Field name | Type | Description |
|---|---|---|
| NAME | Text | Name of the employee in the form LNAME SUFFIX FNAME MNAME |
| STREET | Text | |
| CITY | Text | |
| STATE | Text | |
| ZIP | Text | |
| JOB_TITLE | Text | |
| AGENCY | Text | |
| RATE | Number | Pay rate (hourly, weekly or monthly) |
| YTD_GROSS | Number | Year-to-date actual pay |

Note that the pay rate isn't comparable from one employee to another. Sometimes it's expressed as an hourly rate, other times it's expressed as a monthly rate. So if you want to know about pay, you'll have to use the YTD_GROSS field. You should also note the format of the name, along with any useful fields for identifying people. In particular, pay attention to what's missing: Some employees' zip codes and addresses.

## Basic questions

1. Who has the most orders against him? Who owes the most? How much? What problems did you have?
2. From which city is the most child-support owed? What else would you need to know for this to be newsworthy?
3. Who owes the most in Peoria?

## Creating new data from old

4. Who has the largest per-child order? (In other words, what's the highest amount per kid listed in the database?) What happened to the orders for parents with no kids?
5. Create a table with all of the information you need about a person rather than an order. (HINT: Check to see which fields you'll want to see once you join it to the ILPAY table.)

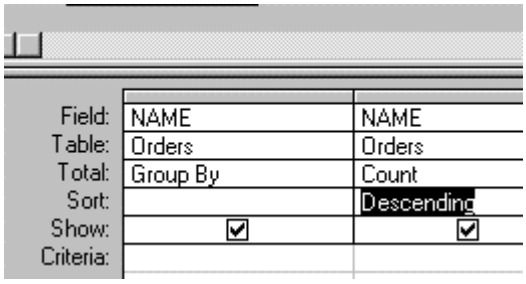
## Joining

6. Joining solely on name, how many parents who work for the state of Illinois owe delinquent child-support payments?
7. How does this change if you make your join more selective, by joining on Name and Zip code?
8. How does it change if you make it even more selective, by joining on Name, Zip code, and Street Address?
9. What kinds of mistakes do you know exist in your match in joining only on name? What kind of mistakes happen when you make it more selective? What can you do about them?

## Answers: Child-support in illinois

1. *Finding the person with the most orders, and the person who owes the most:*

   There are many possible ways to find out who owes the most. The most common way is also the worst:



| Field: | NAME | NAME |
|---|---|---|
| Table: | Orders | Orders |
| Total: | Group By | Count |
| Sort: | | Descending |
| Show: | ☑ | ☑ |
| Criteria: | | |

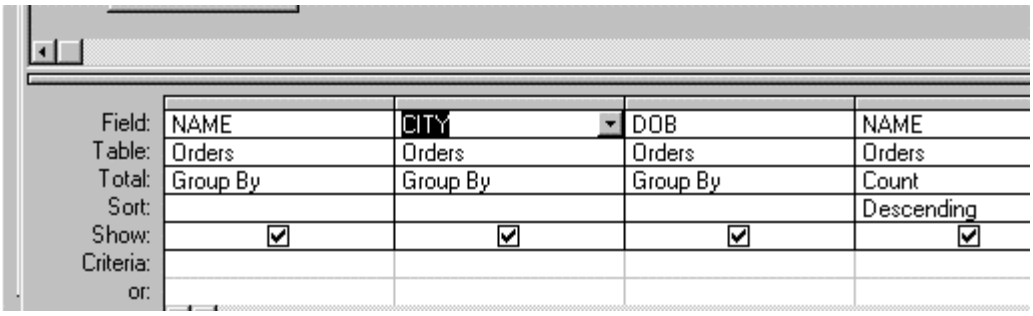
Query1 : Select Query

| NAME | CountOfNAME | Su |
|---|---|---|
| WILLIAMS MICHAEL | 12 | |
| JONES RODNEY | 7 | |
| DAVIS COOPER | 7 | |
| DAVIS MICHAEL | 6 | |

   In this view, Michael Williams had 12 orders against him, out of a database of 9,735 names. Problem is, there could be many Michael Williams' in Illinois who owe delinquent child-support payments.

   If you look in your answer, you'll find five separate entries for Michael Williams, each with a different date of birth.

   That's why good reporters never, ever use a name as the only way to distinguish one person from another. The only reasonably reliable way we have is to identify people by their Social Security numbers. However, because we can rarely get those from public records, we have to use alternatives. Try repeating this, making it more distinct by adding the date of birth, city, or both.



| Field: | NAME | CITY | DOB | NAME |
|---|---|---|---|---|
| Table: | Orders | Orders | Orders | Orders |
| Total: | Group By | Group By | Group By | Count |
| Sort: | | | | Descending |
| Show: | ☑ | ☑ | ☑ | ☑ |
| Criteria: | | | | |
| or: | | | | |

Query1 : Select Query

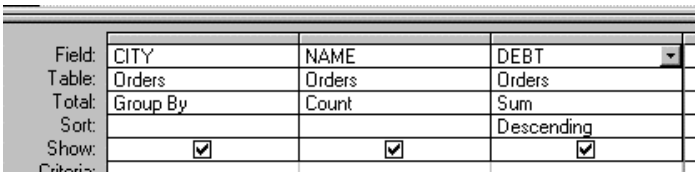
| NAME | CITY | DOB | CountOfNAME |
|---|---|---|---|
| DAVIS COOPER | CHICAGO | 10/13/51 | 7 |
| LOVELACE WILLIE | WAUKEGAN | | 3 |
| SMITH HENRY | DOLTON | 11/28/48 | 3 |
| DUNCAN DANNY | CHICAGO | 3/27/46 | 3 |

2. *The debtor who owed the most was:*

| NAME | CITY | DOB | CountOfNAME | SumOfDEBT |
|---|---|---|---|---|
| MEEKS MELVIN | CHICAGO | 4/16/46 | 1 | 100814.5 |
| TUCKER DAVID | PARIS | | 1 | 71125 |
| JAMES JR CHARLES | CHICAGO | 7/8/49 | 1 | 70973.03 |
| ALEXANDER WILLIAM | CHICAGO | 4/12/51 | 1 | 67600 |

3. *Chicago has the most due in child-support payments.*

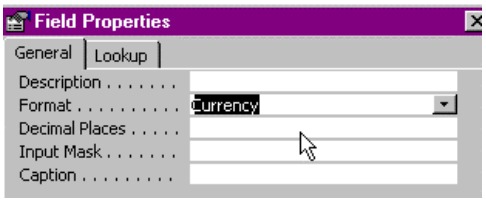
   This shouldn't be surprising. It's by far the biggest city. You'd need per capita debts to make it newsworthy.



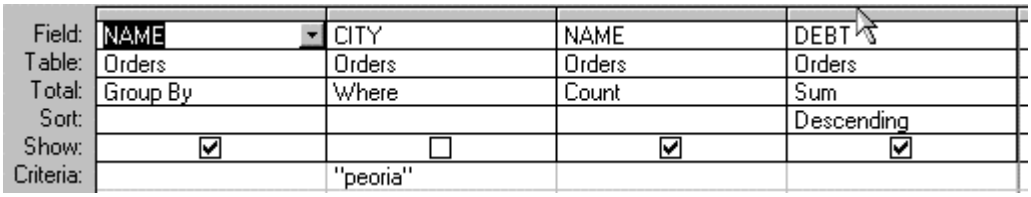

| CITY | CountOfNAME | SumOfDEBT |
|---|---|---|
| CHICAGO | 1532 | $6,490,501.86 |
| CHGO | 63 | $389,996.54 |
| PEORIA | 112 | $381,719.57 |
| ROCKFORD | 79 | $377,523.28 |
| EAST ST LOUIS | 74 | $359,059.45 |

   Note that the second-biggest city is "CHGO," perhaps a misspelling of Chicago?

   HINT: To get the values formatted as currency, use the menu item View, Properties while your cursor is anywhere in the column holding the Sum. Change the Format to Currency:

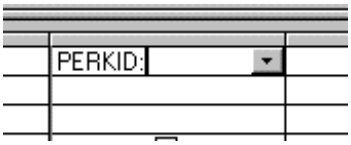



4. *Thomas Levi owes the most from Peoria, with $34,359 in debts.*

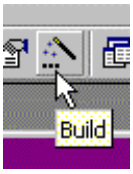


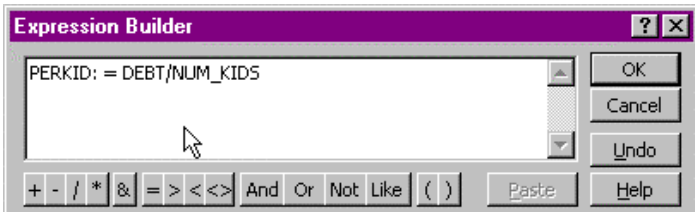

## Creating new data from old

5. *Largest per-child order.*




To get a bigger form on which you can type your formula, press the "Expression Builder" button after typing PERKID:= into a blank Field column.



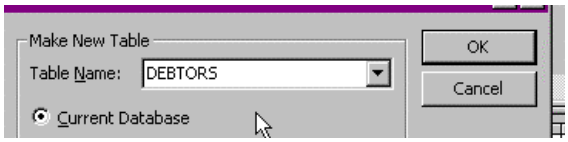
You have one other step: You have to filter for only parents with kids. In other words, Access (like every other program) can't compute anything divided by zero. It's infinity. So you need a criteria to tell it to only try on records that meet that criteria:

| Field: | CITY | NAME | DEBT | NUM_KIDS | PERKID: [DEBT]/[N |
|---|---|---|---|---|---|
| Table: | ILDEBTOR | ILDEBTOR | ILDEBTOR | ILDEBTOR | |
| Sort: | | | | | Descending |
| Show: | ☑ | ☑ | ☑ | ☑ | ☑ |
| Criteria: | | | | <>0 | |

| | NAME | DOB | PERKID |
|---|---|---|---|
| ▶ | BARNES NICKOLAS | 9/10/54 | 46405.02 |
| | ORR ROY | | 46140 |
| | SMITH RICHARD | 6/3/39 | 45606 |
| | RICE LUTHER | 12/29/50 | 44818 |
| | POLING MICHAEL | | 41037 |
| | DEESE DWIGHT | 11/26/53 | 38410.28 |

6. *Create a table for further work:*

To create a table instead of seeing your answers, choose Make-Table under the Query menu item. Remember, this means you won't see your answer.

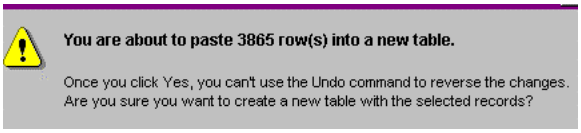



Call the table DEBTORS if you want to be able to follow along in the next step.

Now decide which fields you'll use to distinguish one person from another. I chose Name, DOB, City and Zip. Note that under STREET, I've chosen to use the last address that Access finds for this person, assuming that it's compiled chronologically. This means that if everything else is equal, I'm picking up only one record. Otherwise, an address like 101 E. 23rd Place will create a different record from 101 East 23rd Pl.

| Field: | NAME | DOB | STREET | CITY | ZIP | DEBT | NUM_KIDS |
|---|---|---|---|---|---|---|---|
| Table: | ILDEBTOR | ILDEBTOR | ILDEBTOR | ILDEBTOR | ILDEBTOR | ILDEBTOR | ILDEBTOR |
| Total: | Group By | Group By | Last | Group By | Group By | Sum | Sum |
| Sort: | | | | | | | |
| Show: | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |
| Criteria: | | | | | | | |

Using my method, you'll get a message saying that 3,865 rows will be pasted into a new table. You won't see your anwer until you switch to the Table section of the database (behind the query) and double-click on the new DEBTOR table.




As a last step, check the kinds of records you got. Remember, Access looks for exact matches. So Charles Abron of 317 W 101St Pl. shows up twice, because there are two dates of birth two days apart. This may be a mistake, or it may be two people. You don't know.

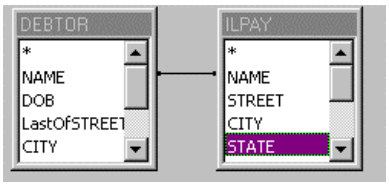
| | | | | | |
|---|---|---|---|---|---|
| | ABRON CHARLES | 6/24/54 | 317 W 101ST P | CHICAGO | 60628 |
| | ABRON CHARLES | 6/26/54 | 317 W 101ST P | CHICAGO | 60628 |

## JOINING

1. Parents working for the state (joining on name only)

Join by two fields by adding a line between the tables in your main query area.

Now decide which fields to use. I choose anything that will help me determine whether or not I have the same people in both tables: Date of birth, both of the addresses, and job titles. (For instance, if I have a 16-year-old official with a big-sounding title, I probably have a mistake.)




Now choose the fields you want to see. I choose anything that might help me identify whether or not there is more than one person in either file, and whether the match is close, or far away.

| NAME | DOB | JOB_TITLE | STREET | ADDRESS |
|---|---|---|---|---|
| ABRON CHARLES | 6/24/54 | EXECUTIVE I | 317 W 101ST PLACE | 317 W 101ST PL |
| ABRON CHARLES | 6/26/54 | EXECUTIVE I | 317 W 101ST PLACE | 317 W 101ST PLACE |
| ADAMS FRED | 8/28/53 | PA INCOME MAINTENANCE SPEC I | 5628 S HOYNE AVE | 5628 S HOYNE AVE |
| ADAMS MICHAEL | 3/13/56 | CHILD WELFARE SUPERVISOR | ADDRESS SUPPRESSED PER | 1 SCARLETTE DR |
| ADAMS MICHAEL | 7/1/54 | CHILD WELFARE SUPERVISOR | ADDRESS SUPPRESSED PER | 3001 S KING DR |
| ADAMS MICHAEL | 3/2/63 | CHILD WELFARE SUPERVISOR | ADDRESS SUPPRESSED PER | TAYLORVILLE CORR. CENTER |

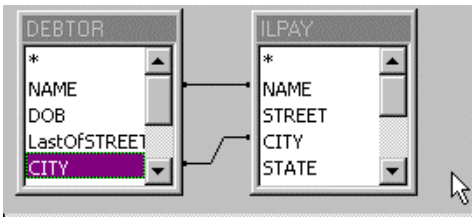
You get 354 names to check.

Pay attention to what happens here. Charles Abron and Michael Adams each appear once in the Payroll table. But the names appear more than once in the Debtor table. Access has linked each of the Debtor entries to the corresponding Payroll entry. This can have a big effect on your counts. For instance, if you have 4 David Smiths in one table, and 15 in another table, you'll get 4 x 15, or 60, matching records.

Make the match more selective by adding CITY as a join condition:

Add a line connecting the two CITY fields. (Note that they don't have to have the same names. One could be called CITY, they other PAYCITY.)

This time, you get 224 matches, with the main difference being that all of the employees without addresses (the ADDRESS SUPRESSED records) are missing.




| | | | | |
|---|---|---|---|---|
| ALBARRAN ALBERTICO | 9/19/65 | MENTAL HEALTH TECH III | 144 WASHINGTON PK | 144 WASHINGT |
| ALVERIO SALVADOR | 1/11/50 | WORKER BLDG SERV | 3044 N KEDZIE | 3044 N KEDZIE |
| ANDERSON DORIS | 2/8/38 | OFFICE ASSOCIATE | 1326 E WASHINGTON ST | 1326 E WASHIN |
| ASBURY IRA | 3/6/61 | MENTAL HEALTH TECH II | 3021 EZEKIEL AVE | 3021 EZEKIEL A |
| ASH JOSEPH | 4/10/57 | OFFICE ADMINISTRATOR II | 801 S KEDVALE AVE | 801 S KEDVALE |
| AUTMAN JERMEL | 6/28/72 | MENTAL HEALTH TECH II | 1825 GREENVIEW | 1825 GREENVIE |

Record: 1 of 224

Michael Adams is missing this time from the match, and Charles Abron still shows up twice.

Try it matching on Zip code, also.

This time you get 211 records. In other words, only 13 people had the same name in the same city, but not the same zip code.