



Advanced Query

Know-It-All Education™

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Defining Results Fields

This operation is one of the most powerful functions of Query. It allows the user to create new fields for use in the query or for use in performing calculations. These fields are created from information already existing in the files selected. We will discuss expressions that use the three types of fields described below:

- **Numeric fields** - Numeric fields are used in mathematical or algebraic expressions, and are designated by any numeric figure (including zero) in the *decimal* position in the file layout.
- **Character fields** - Character fields are used in expressions incorporating operands such as *substring* and *concatenation*, and can be combined with *constants* to achieve desired results. When viewing a file layout, the *decimal* position of a Character field will always be blank.
- **Date Data Type fields** - Date Data Type fields are fields that the system recognizes as date-formatted fields. Conventional 6-digit date fields and Julian date fields existing in JHA Master Files are not Date Data Type fields, they are Numeric fields. Date Data Type fields are designated by an **L** in the *Decimal* position in a file layout.

The following will give examples of using these types of fields in the **Define Results Field** option.

Numeric Expressions

This includes using any of the mathematical operators + (addition), - (subtraction), *(multiplication), and / (division), to perform a calculation. Numeric field names may be used as well as numeric constants.

Subtraction

FIELD	EXPRESSION	COLUMN HEADING	LEN	DEC
AVAILBAL	ORGAMT-CBAL	Available Credit	11	2

In this example, two numeric fields were used to create a new field named AVAILBAL. Query will take the original loan amount for each account selected and subtract the current balance. For example, if the original loan amount was 50,000 and the current balance is 10,000, the available credit field would be 40,000 (50000-10000=40000).

Division

FIELD	EXPRESSION	COLUMN HEADING	LEN	DEC
LNTOTAL	CBAL/APRAMT	Loan to Value Ratio	11	2

In this example, two numeric fields were used with the division operator to create a “loan to value” field. Query will take the current balance for each account selected and divide that amount by the appraisal amount field. For example, if the current balance is 40,000 and the appraisal amount was 80,000, the loan to value is 50% ($40000/80000=.50$).

Multiplication

A Numeric field can be multiplied by a constant value to create a new field:

FIELD	EXPRESSION	COLUMN HEADING	LEN	DEC
NEWRATE	RATE*100	Loan Rate	4	2

This example changes the rate field from a decimal field to a conventional rate field.

Addition

Numeric fields may also be combined with a numeric expression to create a new field:

FIELD	EXPRESSION	COLUMN HEADING	LEN	DEC
NEWRATE	RATE+.050	New Loan Rate	9	8

In this example a numeric field (RATE) will have .050 added to the current value to determine a new value. Query will take the current loan rate for each account selected and add .050 to that value. For example, if the current rate is $9\frac{1}{2}$ and we want to add $\frac{1}{2}$ to that rate, the result would be 10 ($.095000+.050=.1000000$). Since the loan rate is carried in the field with eight decimal places, the expression must be entered in the same format.

If more than one calculation is performed in an expression, parentheses are used to tell Query the order to perform the calculations. For example, to create an average monthly balance field for deposits, the following expression could be used:

$(ALEDQ1+ALEDQ2+ALEDQ3+ALEDQ4)/4$.

The parentheses are very important in this calculation. Assuming the values in the fields are: ALEDQ1=1,000, ALEDQ2=500, ALEDQ3=2,000, and ALDEQ4=250, the following examples show what the result of each calculation would be.

Example A (CORRECT) - (ALEDQ1+ALEDQ2+ALEDQ3+ALEDQ4)/4

1,000+500+2,000+250=3750
3750/4= **937.50**

Example B (INCORRECT) - ALEDQ1+ALEDQ2+ALEDQ3+ALEDQ4/4

1,000+500+2,000=3500
250/4=62.50
3500 + 62.50 = **3562.50**

Character Expressions

Using character expressions involves using fields or constants that are *non-numeric* in nature. A good example of a character value in the SilverLake system is short name. If in doubt as to the nature of a field (numeric vs. character), Query provides the Len and Dec fields on each display. The Dec field will be blank if the field is a character field. The operators substring (SUBSTR) and concatenation (||) are used in many character expressions. The following examples demonstrate a few of their uses. Numeric fields must be changed to character fields before *substring* or *concatenation* can be performed. *If a numeric field needs to be used in an expression requiring substring or concatenation operations, the field must first be changed to a character field. This is done using the digits (DIGITS) function.*

Substring

Substringing is the act of taking a field and breaking it apart to create other fields. If you *substring* a numeric field, that field must be converted to a character field by use of the DIGITS function, as shown below.

FIELD	EXPRESSION	COLUMN HEADING	LEN	DEC
PHONE	DIGITS(CFHPHO)			
AREACODE	SUBSTR(PHONE,1,3)	Area Code		

In this example, *substring* was used to create a new field, Area Code, from the existing Home Telephone Number field (CFHPHO). In order to do this, the field CFHPHO (which is a numeric field) had to be defined as a character field. The DIGITS operation converts a numeric field to a character field. After the field is converted to a Character field named PHONE, a field named AREACODE is created using the substring operation, isolating the area code portion of the telephone number (the first three digits) by taking the new PHONE field, starting at the first position, and counting three. For example, assume a customer has an entry of 4172356652 in the **Home Telephone Number** field on his CIF record. The resulting fields after the substring operations are performed would be an AREACODE field with a value of 417.

Concatenation

Concatenation is used to join two or more fields together to make one field. Character fields (including constants) and numeric fields cannot be joined together. A numeric field must be converted to a character field before concatenation with a character field may take place.

FIELD	EXPRESSION	COLUMN HEADING	LEN	DEC
JOINTGREET	'DEAR' ' T01.CFNA1 ' 'AND' ' T02.CFAAL1			

In this example, a joint greeting field is created by joining together two individual fields - the Customer Name Line 1 in the CFMAST file and the Additional Name Line 1 in the CFALTN file. The concatenation operation is performed to take the **Customer Name** field and the **Additional Name** field, and create one field from the two. The constants 'DEAR' and 'AND' will be inserted in each record (single quotation marks must be used around constant fields). The ' ' in the expression will provide a blank space between each field in the output. Posts (||) are used to concatenate, or join, the fields together. As an example, assume that the **Customer Name** field has a value of **John Doe**, and the **Additional Name** field has a value of **Mary Doe**. The resulting field based on the above example will be **Dear John Doe and Mary Doe**.

DATE, CHAR

The date function returns a date from a defined field value. For example, the date January 15, 2010, is represented as a Julian date (the date with the 7 at the end of the field name) in the JHA files as 2010015. The date function returns this field as 01/15/10.

FIELD	EXPRESSION	COLUMN HEADING	LEN	DEC
NEWDATE	DATE(DIGITS(MATDT))			
DATE1	CHAR(NEWDATE,USA)			

In the above example, a field called NEWDATE has been created by taking the Julian maturity date and using the DIGITS function to return a character value, and then telling the system this expression is a date.

In this example, the second step is to take the new date field and turn it into a character value that is a representation of a date (USA specifies the format for the date). Assuming a Julian maturity date of 2010015, the first operation returns a value of 01/15/10, and the second operation returns a value of 01/15/2010.

When the CHAR field is used, it is still necessary to use the date function due to the fact that the CHAR function will only relate to a date, time, or time stamp field (see below).

IMPORTANT NOTE: If you are in the habit of using the DATE function, it is important to know that if a date is not in the year range of 1940-2039, the date function will not produce the desired results. This is the reason for the use of the CHAR function shown above. This function may be used because a four digit year is created. This will become increasingly important as we move closer to 2039. In fact, we deal with this now when we incorporate fields like birthdays in queries. If there are existing queries in your institution using the DATE function, you may notice ++++++ printed in place of a date on some reports. These queries need to be changed to use the CHAR function in addition to the DATE function.

The following example shows how the different maturity date fields will be printed on a report.

NEWDATE(DATE)	DATE1(CHAR)	MATDT (Julian)	MATDT6 (mmddy)
02/04/20	02/04/2020	2020035	020420
04/25/38	04/25/2038	2038115	042538
+++++++	09/16/2040	2040260	091640
+++++++	03/29/2049	2049088	032949

Notice that the DATE function does not return a valid date for the 2040 or 2049 date.

Besides the United States format (USA), Query also formats dates in the following formats:

- International Standards Organization (ISO) - formats a date as 2010-12-31
- European Format (EUR) - formats a date as 31.12.2010
- Japanese Industrial Standard (JIS) - formats a date as 2010-12-31

Day, Hour, Minute Functions, Etc.

The functions Day, Time, Hour, Minute, Second, and Millisecond can be used to extract a particular portion of a date or time field.

FIELD	EXPRESSION	COLUMN HEADING	LEN	DEC
CDATE	CURRENT(DATE)			
CDATE2	DAY(CDATE)			

In the example above, if the current system date is 01/15/05, the DAY function will return the value of 15. Notice that the date field must be converted to a character field (DATE function) before the DAY feature may be used.

Days Function

The DAYS function will return a representation of a number of days from a date. An example of the use of this function would be changing two date fields to days in order to compare the two. The Query described below reports all loans maturing in the next 180 days (roughly 6 months). The steps shown eliminate the need for a user to change the Julian date in the **Select Records** option every time the Query is processed.

FIELD	EXPRESSION	COLUMN HEADING	LEN	DEC
CURRDAYS	DAYS(CURRENT(DATE)) + 180			
MATDATE	DIGITS(MATDT)			
MATDATE2	DATE(MATDATE)			
MATDATE3	CHAR(MATDATE2,USA)			
MATDAYS	DAYS(MATDATE3)			

In the example shown above, the current date is translated into days, and then 180 days is added to the result. The maturity date is also translated into days. When the current date days and the maturity date days are compared (in the **Select Records** option), the report will show all accounts maturing in the next 180 days.

The following is a description of each step of the **Define Results Field** option (shown above) for this Query:

- Step 1** - A current date field is created. That date is changed to a sequential numeric representation using the *DAYS* operator. 180 days are added to this numeric representation, resulting in a numeric representation of 180 days from the current day's numeric representation. This field is named CURRDAYS.
- Step 2** - The Julian Maturity Date field existing in the LNMAST file is changed from a Numeric field to a Character field using the DIGITS operator. This step is necessary because a Numeric field can't be changed to a Date Data Type field (next step). It must be changed to a Character field first. Character fields can be changed to Date Data Type fields. The new field created in this step is named MATDATE.
- Step 3** - The MATDATE field created above is changed to a Date Data Type field by use of the DATE operator. This step is necessary in order to format the field in the USA date format, which can only be performed on Date Data Type fields (not Numeric or Character fields). The new field created in this step is named MATDATE2.
- Step 4** - This step takes the MATDATE2 field (created above) and formats it in the USA date format. The field is then changed back to a Character field to prevent the +++++ from displaying on dates outside of the 1940-2039 year range. This new field (MATDATE3) will be displayed on the report.
- Step 5** - This step takes the MATDATE3 field created in Step 4 and changes it to a sequential Numeric representation (loan maturity date) using the DAYS operator.

In the **Select Records** option, the sequential numeric representations of maturity dates (created in Step 5) and the field that represents 180 days from today (created in Step 1) will be used

along with the **RANGE** test to identify the correct loans. If the maturity date of any loan falls between the ranges represented by these two fields, the loan is maturing within the next 180 days and will be on the report. An example of the *Select Records* screen appears below:

PRINT FORM | PRINT iSERIES FORM | VIEW MESSAGES

Select Records

PREVIOUS < | SUBMIT > | EXIT X

Type comparisons, press SUBMIT. Specify OR to start each new group.
Tests: EQ, NE, LE, GE, LT, GT, RANGE, LIST, LIKE, IS, ISNOT...

AND / OR	Field	Test	Value (Field, Number, 'Characters', or ...)
	MATDAYS	LE	currdays
AND	STATUS	NE	2

Previous | More

Field	Text	Len	Dec
BR#	Branch Number	3	0
ACCTNO	Account Number	16	0
ACTYPE	Account Type	1	
SNAME	Short Name	20	
CIFNO	CIF Number	7	

Previous | More

PREVIOUS < | SUBMIT > | EXIT X

On the Select Records display you specify the conditions that extract the records you want for this query. For example, you might want all the records for every person whose age is 21. Therefore, on this display, you could specify a condition where age is equal to 21, or birthdate is equal to the current date if you had created a result field set to CURRENT(DATE). Then, the records that meet the condition are selected from the file or files used in this query.

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Joining Files

Learning to join files correctly is important in creating Queries with correct information. In the following discussion, remember that the primary file is the first file listed on the *Specify File Selection* display. All other files selected are secondary files. The records from the primary file are compared with records from the other file(s) when determining how to select records for the Query. The primary file is used when determining the "type of join" used for selecting the records for your Query.

There are three types of joins, and the choice is made on the *Specify Type of Join* display. This screen is not shown unless more than one file has been selected on the *Specify File Selection* display. The three types of joins are as follows.

1=Matched Records - Select only records that match in ALL the specified files.

2=Matched Records With Primary File - Select ALL records from primary file and include all records that match from the secondary files. Use this type of join if you want to use every record in the primary file, whether or not it has a matching record in the secondary file(s).

3=Unmatched Records With Primary File - Select only records from primary file that have no match in at least one of the secondary files. This option will seldom be used. Every primary record is selected that does not have a matching record in all secondary files.

For the most part, if your primary file is one of the application master files, and the CIF is the secondary file, you can use either option 1 or option 2, since the application master file will always contain the CIF number (by which we will link the files), and the customer's CIF master record will always contain that same CIF number. However, if you are accessing an application master file, the CIF master file, and the alternate name file or the message file, for example, using option 1 could cause inconsistent selection of records if the account had no alternate name (or no message). Remember that the wording of option 1 specifies that the system selects only matching records in ALL the specified files.

The following examples will show records that would be selected using each of the join tests. The files in the example will be the Loan master file (LNMAST), and CIF message file (CFMMSG).

1=Matched Records - Select only records that match in ALL the specified files.

LOAN MASTER FILE (File A--Primary)			MESSAGE FILE (File B--Secondary)	
No.	Short Name	Current Bal.	No.	Message
1	ADAMS JOH	6,123.78	1	1991 OLDS CUTLASS.....
2	WASHINGTON GEO	2,574.25	3	UNSECURED.....
3	KENNEDY JOH	1,123.98	4	1992 SAAB 900S TURBO.....
4	FILLMORE MIL	7,253.25	4	BALLOON LOAN.....
5	BUCHANAN JAM	5,876.32	5	ASSIGNMENT OF SAVINGS ACCT..
6	BUSH GEO	1,788.37		

QUERY OUTPUT				
No.	Short Name	Current Bal.	Message	
1	ADAMS JOH	6,123.78	1991 OLDS CUTLASS.....	
3	KENNEDY JOH	1,123.98	UNSECURED.....	
4	FILLMORE MIL	7,253.25	1992 SAAB 900S TURBO.....	
4	FILLMORE MIL	7,253.25	BALLOON LOAN.....	
5	BUCHANAN JAM	5,876.32	ASSIGNMENT OF SAVINGS ACCT..	

2=Matched Records With Primary File - Select ALL records from primary file and include all records that match from the secondary files.

LOAN MASTER FILE (File A--Primary)			MESSAGE FILE (File B--Secondary)	
No.	Short Name	Current Bal.	No.	Message
1	ADAMS JOH	6,123.78	1	1991 OLDS CUTLASS.....
2	WASHINGTON GEO	2,574.25	3	UNSECURED.....
3	KENNEDY JOH	1,123.98	4	1992 SAAB 900S TURBO.....
4	FILLMORE MIL	7,253.25	4	BALLOON LOAN.....
5	BUCHANAN JAM	5,876.32	5	ASSIGNMENT OF SAVINGS ACCT..
6	BUSH GEO	1,788.37		

QUERY OUTPUT			
No.	Short Name	Current Bal.	Message
1	ADAMS JOH	6,123.78	1991 OLDS CUTLASS.....
2	WASHINGTON GEO	2,574.25	
3	KENNEDY JOH	1,123.98	UNSECURED.....
4	FILLMORE MIL	7,253.25	1992 SAAB 900S TURBO.....
4	FILLMORE MIL	7,253.25	BALLOON LOAN.....
5	BUCHANAN JAM	5,876.32	ASSIGNMENT OF SAVING ACCT..
6	BUSH GEO	1,788.37	

3=Unmatched Records With Primary File - Select only records from primary file that have one or more UNMATCHED records from secondary files.

LOAN MASTER FILE (File A--Primary)			MESSAGE FILE (File B--Secondary)	
No.	Short Name	Current Bal.	No.	Message
1	ADAMS JOH	6,123.78	1	1991 OLDS CUTLASS.....
2	WASHINGTON GEO	2,574.25	3	UNSECURED.....
3	KENNEDY JOH	1,123.98	4	1992 SAAB 900S TURBO.....
4	FILLMORE MIL	7,253.25	4	BALLOON LOAN.....
5	BUCHANAN JAM	5,876.32	5	ASSIGNMENT OF SAVINGS ACCT..
6	BUSH GEO	1,788.37		

QUERY OUTPUT

No.	Short Name	Current Bal.	Message
2	WASHINGTON GEO	2,574.25	
6	BUSH GEO	1,788.37	

However, if you are accessing an application master file, the CIF master file, and the alternate name file or the message file, using option 1 could cause inconsistent selection of records. Remember that the wording of option 1 specifies that the system selects only matching records in ALL the specified files.

The file chosen as primary (by entry of its name first) should contain the fields necessary to join all files. In the JHA system, you will normally choose one of the application master files as the primary file. Use a join test to connect the second file to the first, and then another test to join the third file to the first or second. If a fourth file is used, it can be connected to any of the other files.

Once the type of join has been established and you press **Enter**, the *Specify How to Join Files* display is shown. The fields to be tested for the file join(s) are entered in the **Field** and **Test** areas at the top of the screen. The screen initially shows five lines; however the roll keys may be used to access more lines if needed.

The results of *every test* in the join specifications *must be true* before the matching records in each of the files are joined as one record for the record selection tests. For each test, specify two fields to be tested and the test value to be used. Look for a field in one file that contains information that can be found in a field of the other file. For example: CIF number, short name, Social Security number, account number/type, etc. These are probably the most commonly used fields for linking files in the JHA system.

Entries on the screen include:

- **Field (14a)** - Enter the name of the field to be tested from the primary file.
- **Test (5a)** - Test criteria which can be entered are:
 - EQ – Field one is EQUAL to Field two. The EQ value is almost always used.
 - NE – Field one is NOT EQUAL to field two.
 - LE – Field one is LESS THAN or EQUAL to field two.
 - GE – Field one is GREATER THAN or EQUAL to field two.
 - LT – Field one is LESS THAN field two.
 - GT – Field one is GREATER THAN field two.
- **Field (14a)** - Enter the name of the field to be tested in the secondary file.

AS/400 Query Definition Choices

- 1. Specify File Selection** Use this option to designate file(s) from which you want to extract information.
- 2. Define Result Fields** Use this feature if you need to create a new field, or if you need to extract information from characters of an existing field.
- 3. Select & Sequence Fields** Use this option to specify which fields you would like to print on the report, as well as what order across the page they should print. You also need to select a field in this option if you would like to sort by it, but do not actually wish to print it on the report.
- 4. Select Records** Use this option to establish criteria used to determine which accounts will be on the report.
- 5. Select Sort Fields** In this option, fields that were chosen in the **Select & Sequence Fields** option are presented to define in what order you would like the report sorted.
- 6. Select Collating Sequence** *Use of this feature is not normally necessary when using JHA files, but if you would like to specify a different collating (sorting) sequence, this option could be used.*
- 7. Report Column Formatting** This option can be used to make various cosmetic changes to the query report, including modifying column headings, changing the spacing between columns, truncating fields, numeric editing, date editing, and using edit words or edit codes to format how fields will print.
- 8. Report Summary Functions** In this option you can specify what totals you would like to see on your report. (Remember, if the field you are totaling is a non-numeric one, you probably will want to use the **Count** feature, rather than the **Total** option.)
- 9. Define Report Breaks** Use of this option will enable you to designate either where you want subtotals or where you would like breaks in your report.
- 10. Output Type & Output Form** This option can be used to specify several things regarding the output, including whether the report will be detail (show each account) or summary (only show total information), and whether the output should be a report or a file.
- 11. Specify Processing Options** *Use of this option is not normally necessary when using JHA files, but if you would like to specify alternate processing options, you could do so using this option.*

At any time while using Query, the following function keys are available:

- F5** – Report - use this key to see what your query looks like at this point.
- F13** – Layout - use this key to see what the layout of the report looks like.
- F18** – Files - use this key to see which file(s) you have selected to work with.

Editing Features of Query

Through the **Specify report column formatting** option there are many editing features which may be used to improve the appearance or presentation of a report.

Column Spacing

Changing the value in this field allows the user to determine how many spaces will be placed between each column selected to print on the report. This field defaults to **2**. If a report is too wide to print on a standard sheet of paper (normally 132 characters) without line wrapping, column spacing may be adjusted to “save” a few spaces. On the other hand, if the report is only 80 characters wide and we are using standard size paper, we might wish to add to the column spacing so the information would fill the entire page instead of just the first 80 spaces from the left margin. Even if this value is set to **0**, a one space tolerance is assumed by Query.

Column Heading

This field will display the heading that is to be printed for each field selected to print on the report. If you wish to change this heading in any way you may do so. Three lines are available for heading information. This field is case-sensitive, so if mixed case entry is made in this field it will print accordingly on the report. Another thing to keep in mind when designing a report is that if a field contains fewer spaces than the heading, the column will take up the amount of space needed to print the heading. For example: The loan collateral code field is a 3-positional field; however, if the column heading was entered to read “Collateral Code”, 15 spaces would be used to print the collateral code column. If the heading was entered on two separate lines, the first reading “Coll” and the second reading “Code”, the field would use four spaces to print.

Len/Dec

The length and decimal position fields may also be used to change the appearance of the report. For example, if the **Customer Name** field is selected to print on a report, it is a 35 positional field. Most customers don't have names that long, so if space is a concern on the report, this field may be changed to be as short as necessary (perhaps 30 or 25). If the field is shortened too much, asterisks will print on the report in place of data in the field. This will alert the user that more spaces are needed to print this field. The decimal field may be used to include or exclude decimal positions when printing. For example, if a current balance field is selected to print and it is an 11.2 field, the **Dec** field will have an entry of **2**. If this is changed to **0**, whole dollar amounts will print on the report.

Edit

This column shows if a field has been edited. To perform an edit function, the cursor may be anywhere in the input area for the field you wish to edit. The **F16** key is used to access editing. The following features are available with the **Edit** option:

- Numeric editing
- Date or time editing
- Edit code
- Edit word

The following examples will illustrate some of the benefits of these options.

Numeric editing

This option is used to edit a field so that thousand separators and decimal points will not print within a field. Query assumes that all numeric fields should contain thousands separators, so in the case of some fields, account number for example, the account number 123456 would print 123,456 on a report without editing. Other features available through numeric editing are the ability to show a negative sign, print a symbol such as a currency symbol on the left or right of a field, include or exclude leading zeros, or replace leading zeros with a symbol.

Date or time editing

As mentioned in the numeric editing section, Query will treat each numeric field as an amount which has thousands separators. In the case of a date or time field, this option is provided to allow the user to select what type of separator should be used. Valid options are:

1=(.),2=(/),3=(:), 4=(-), and 5=(,). Before using date editing, a date field such as October 31, 2005 would print as 103,105. After using date editing option 2, it would print as 10/31/05.

Edit code

This feature can be especially helpful in editing certain fields which have been formatted by Jack Henry to print in a certain way. Using these edit codes will cause the field to format in a predetermined manner.

Valid JHA edit codes are:

- 5 - Blank leading zeros (edits blanks when fields are zero),
- 6 - Business tax ID (formats in xx-xxxxxxx style)
- 7 - Individual tax ID (formats in xxx-xx-xxxx style)
- 8 - Telephone number (formats for telephone number plus code)
- 9 - Normal balance (edits for credit balances).

Edit word

This option allows the user to determine how a field should be printed by defining the number of spaces in the field and entering the appropriate separators, blanks, etc. For example, an account number field will print with thousands separators if no editing is done (i.e. 12345678901 will print 12,345,678,901). The option for numeric editing can be used to simply remove the thousands separator, but assume that we want the account number to print in the following format: 12345-678901.

Using edit word we would make the following entry: ' - '.

This tells Query that the field is eleven positional and that we want to print the first five characters, then a dash, then the remaining six characters. Each space entered is replaced by a digit. If a blank space is desired in the middle of a field an "&" is used.

In addition to the features discussed above, it also possible to prevent a column from printing on a report through the **Report Column Formatting** feature. This would be necessary if the report needed to be sorted by a certain field but the user did not want that field to be printed on the report. To accomplish this, the Length and Decimal places need to be changed to a 0 (zero). If the field is an alpha field and the decimal field is already blank, leave it as a blank.

Print File List

To print a list of the bank's files, the following AS400 command will need to be entered on an active command line. This may take a few minutes to run after it has been submitted. The report will go to the person's spool file or printer depending on how the user's ID is set up. The report will more than likely be over 100 pages long, so make the necessary plans when sending the report to a printer.

This is a list of files found in the specified library and can be printed at any time from any AS400 system.

Then command to print the list is:

DSPLIB LIB(XXXDAT) OUTPUT(*PRINT)

To list the fields in a specific file, enter the following on an active command line:

DSPFLD LNMAST (Use the field name you want: DDMAST, CDMAST, CFMAST, etc.)

Helpful Hints

Accessing Query

- You can create a menu option to print a query that you have developed. The command to enter on the command line when creating the option is:

RUNQRY XXXXXX/YYYYYY

XXXXXX = name of the library in which the query resides
YYYYYY= query name

- You can create a menu option for a query that you have developed which, when taken, will present the **Select Records** screen from the query, allowing you to enter information (name, date, etc.) to initiate an inquiry. The command to put on the command line when creating this option is:

RUNQRY XXXXXX/YYYYYY RCDSL(*YES)

XXXXXX = name of the library in which the query resides

YYYYYY = query name

RCDSL = record select

Example: If a bank is a member of a holding company along with two other banks, database queries can be written for each bank, pulling in loan information for each bank's customers. These queries should be written to a common file. The common file is then queried, breaking by short name and then by bank, totaled by bank and customer, and flagged to *display*. The final query is then set up as a menu option using the command above.

When this option is taken, the loan customers of all of the banks in the holding company can be inquired on at any one of the institutions. The **Select Records** screen (from the query) will be presented, allowing a short name to be entered for inquiry purposes. The only restriction is that the user must be familiar with the **Select Records** screen (using single quotation marks in front and behind the short name). Also, when creating the queries for the individual banks, the fields selected for the database files must be consistent as far as order is concerned (if short name is the first field selected on the initial bank's query, it must also be the first field selected on all subsequent queries).

- When saving your queries, be sure to save with the proper authority:

***LIBCRTAUT** - the owner is the only person who can run or change the query (do not use if query will run in nightly update)

***CHANGE** - any user can run or change the query, but only owner can copy, delete, or save with changes

***ALL** - any user can perform all functions except transferring to new owner or changing the authority value

***EXCLUDE** - no user except owner may use the query (do not use if query will run in nightly update)

***USE** - any user can run, print, or display the query definition. Only the owner can copy the query definition or save the query with changes.

NOTE: If a query is saved under the *LIBCRTAUT authority and the author is no longer employed, the author's IBM profile can't be deleted until the query is deleted (only QSECOFR can perform this kind of maintenance).

- In *Report Column Formatting*, there are several valid **Edit Codes** (option 3) available for formatting purposes, including:

- 5 - Blank out leading zeros
- 6 - Business Tax ID
- 7- Personal Social Security number
- 8 - Telephone number
- 9 - Normal balance

- The two options in query that you will *rarely*, if ever, need to maintain are:

Select Collating Sequence
Select Processing Options

SilverLake has embedded defaults that perform the functions of both of these options.

- When you are finished defining your query, it is a good idea to run the report (**F5**) to see how it looks before actually processing the query. This will save considerable time if, for instance, you have forgotten to edit a field properly or if the query width is too big.
- When using the **Specify Report Summary Functions** option, any field can be counted on but only numeric fields should be totaled.
- Wherever you want to see totals on your query, you must specify a break.

Interactive vs. Batch

Interactive - Puts a high priority on your job, uses more system resources, may tie up your terminal, and bumps all other jobs down in the processing stream. Depending upon the query, it may also tie up or slow down the response time for other users on the system.

Batch - Your query gets submitted in the job stream (gets in line in the processing stream), doesn't tie up your terminal, and doesn't take authority over jobs ahead in the processing stream.

Perpetual Julian Date Calendar

Note: For leap year, after February, add 1 to the day's number

Julian Date Calendar

(perpetual)

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Day
1	001	032	060	091	121	152	182	213	244	274	305	335	1
2	002	033	061	092	122	153	183	214	245	275	306	336	2
3	003	034	062	093	123	154	184	215	246	276	307	337	3
4	004	035	063	094	124	155	185	216	247	277	308	338	4
5	005	036	064	095	125	156	186	217	248	278	309	339	5
6	006	037	065	096	126	157	187	218	249	279	310	340	6
7	007	038	066	097	127	158	188	219	250	280	311	341	7
8	008	039	067	098	128	159	189	220	251	281	312	342	8
9	009	040	068	099	129	160	190	221	252	282	313	343	9
10	010	041	069	100	130	161	191	222	253	283	314	344	10
11	011	042	070	101	131	162	192	223	254	284	315	345	11
12	012	043	071	102	132	163	193	224	255	285	316	346	12
13	013	044	072	103	133	164	194	225	256	286	317	347	13
14	014	045	073	104	134	165	195	226	257	287	318	348	14
15	015	046	074	105	135	166	196	227	258	288	319	349	15
16	016	047	075	106	136	167	197	228	259	289	320	350	16
17	017	048	076	107	137	168	198	229	260	290	321	351	17
18	018	049	077	108	138	169	199	230	261	291	322	352	18
19	019	050	078	109	139	170	200	231	262	292	323	353	19
20	020	051	079	110	140	171	201	232	263	293	324	354	20
21	021	052	080	111	141	172	202	233	264	294	325	355	21
22	022	053	081	112	142	173	203	234	265	295	326	356	22
23	023	054	082	113	143	174	204	235	266	296	327	357	23
24	024	055	083	114	144	175	205	236	267	297	328	358	24
25	025	056	084	115	145	176	206	237	268	298	329	359	25
26	026	057	085	116	146	177	207	238	269	299	330	360	26
27	027	058	086	117	147	178	208	239	270	300	331	361	27
28	028	059	087	118	148	179	209	240	271	301	332	362	28
29	029		088	119	149	180	210	241	272	302	333	363	29
30	030		089	120	150	181	211	242	273	303	334	364	30
31	031		090		151		212	243		304		365	31



Advanced Query Exercises

Know-It-All Education™

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CIF 20/20® Teller™; Co-Mingle™; Collateral and Document Tracking™; Commercial Lending Center™; Compliance Access™; Core Director®; Core Director® Teller™; Core Director® Teller Capture™; Cruise®; CruiseNet®; CruiseNet® Mobile CU™; CruiseNet® Mortgage Statement Extract™; CruiseNet® Relationship Pricing™; CTRMaster™; CUPRO® ALM™; CUPRO® ALM Express™; Customer Payment Portal™; Database Cleansing Package™; DataLink CU™; Demand Account Reconciliation™; DIME™ (Document Image Management Engagement); DirectLine International™; DirectLine™ OFX; DirectLine Wires™; Dynamic Content Modules™; ECS Capture Solutions™; ECS Digital Data Conversion™; ECS OneLook™; ECS Paper-to-Digital Conversion™; ECS RDC Conversion™; ECS Web™; eCTR™; Electronic Statements™; Electronic Statements – Interactive™; Enhanced Account Analysis™; Enhanced Loan Application™ (ELA); Enhanced Loan Collections™; Enhanced Member Application™ (EMA); Enterprise Backup and Tape Encryption™; Enterprise Capture Solutions™; Enterprise Conversion Solutions™; Enterprise Payment Solutions™; Episys®; Episys® Anywhere™; Episys® Collateral and Document Tracking™; Episys® Collection Toolkit™; Episys® Contact Event Manager™; Episys® Continuity Plan™ (ECP); Episys® Continuity Services™; Episys® Continuity Services Plus™; Episys® Data Store™; Episys® Dealer Reserve Accounting™; Episys® Escrow Module™; Episys® External Loan Processing Interface™; Episys® Failover Certification™; Episys® Failover Self-Certification™; Episys® ID Scanner Interface™; Episys® ID Scoring Integration™; Episys® Management Server™; Episys® Multihost™; Episys® OFAC Integration™; Episys® Overdraw Tolerance™; Episys® PowerCheckUp™; Episys® Quest™; Episys® Real Time External Loan Interface™; Episys® Replication Failover™; Episys® Skip Payment™; Episys® University™; Episys® Vaulting™; Episys® Virtualization™; EPS Remote Deposit Capture™; Extra Awards®; Failover™; Fed-File Pro™; FlexPass™; First PIN™; FormSmart™; Genesys Check Imaging Suite™; Gladiator®; Gladiator® Advanced Malware Protection™; Gladiator® Consulting Services™; Gladiator® CoreDEFENSE Managed Security Services™; Gladiator® eBanking Compliance Services™; Gladiator® eCommercial SAT™; Gladiator® Enterprise Network Design, Implementation & Support Services™; Gladiator® Enterprise Security Monitoring™; Gladiator® Enterprise Virtualization Services™; Gladiator® eSAT™; Gladiator® eShield™; Gladiator® Help Desk Service™; Gladiator® Hosted Network Solutions™; Gladiator® IT Regulatory Compliance/Policy Products™; Gladiator® Managed IT Services™; Gladiator® Managed Unified Communications Services™; Gladiator® NetTeller® Enterprise Security Monitoring™; Gladiator® Network Services™; Gladiator® Phishing Defense and Response Service™; Gladiator® Social Media Compliance Services™; Gladiator Technology®; Gladiator® Unified Communications Services™; Gladiator® Website Compliance Review™; goDough®; GoldPass™; Hosted Pay Page™; iBizManager™; Image ATM™; Image ATM Capture and Reconciliation™; ImageCenter™; ImageCenter ATM Deposit Management™; ImageCenter Image Capture™; ImageCenter Interactive Teller Capture™; Intellix CIF 20/20® OutLink Renewal Engagement™; Intellix Consulting™; InTouch Voice Response®; Investor Servicing™; iPay Business Bill Pay™; iPay Consumer Bill Pay™; iPay QuickPay™; iPay Solutions™; Isosceles™; iTalk™; Jack Henry & Associates, Inc.®; Jack Henry Banking®; JHA Client Services™; JHA Commercial Cash Management™; JHA Consumer Pieces™; JHA EMV™; JHA EPS SmartPay Biller Direct™; JHA EPS SmartPay Business™; JHA EPS SmartPay Express™; JHA Get Smart™; JHA Hosted ATM Driving™; JHA Merchant Services™; JHA Money Center™; JHA mRDC™; JHA OutLink Processing Services™; JHA Payment Solutions™; JHA Payment Processing Solutions®; JHA Program Management Services™; JHA Small Business Cash Management™; JHA Treasury Management™; jhaAddress Verify™; jhaCall Center™; jhaCall Center In-House™; jhaCall Center Outsourced Services™; jhaCall Center Outsourced Services After Hours™; jhaCall Center Outsourced Full Business Services™; jhaCall Center Outsourced Select Services™; jhaDirect®; jhaEnterprise Workflow™; jhaID Scan™; jhaKnow™; jhaKnow Express™; jhaPassPort Debit Optimizer™; jhaPassPort™; jhaPassPort.pro™; jhaPassPort Direct™; jhaPassPort Extra Awards™; jhaPassPort Fraud Center™; jhaPassPort Hot Card Center™; jhaPassPort Promotions and Consulting Services™; jhaPassPort Switch™; jhArchive™; jVault®; jXchange™; Know-It-All Credit Programs™; Know-It-All Education™; Know-It-All Learning Management Portal™; Know-It-All Now™; Landlord/Tenant Security Deposit Tracking™; LendingNetwork®; Loan Collateral Tracking™; Margin Maximiser Interactive™; Margin Maximiser Interactive™; Margin Maximiser MaxConnect™; Margin Maximiser MaxConnect™; Margin Maximiser Pronto™; Margin Maximiser Pronto™; Margin Maximiser Suite®; Margin Maximiser Suite®; Masterlink™; MaxConnect Interactive™; MedCashManager®; Member Business Services™; Member Privilege™; Mobile Website™; Multifactor Authentication™; Mutual Fund Sweep™; Net.Check™; NetTeller®; NetTeller® Bill Pay™; NetTeller® Cash Management™; NetTeller® MemberConnect™; NetTeller® Online Banking™; NetTeller® Security Manager™; NetTeller® Text Alerts™; NetTeller® Vanity URL™; OFX Gateway™; OnBoard Deposits™; OnBoard Loans™; OnNet™; OnTarget™; OnX™; OpCon™; Opening Act™; Opening Act Express™; Optimizer™; Optimus Credit Union™; Participation Lending™; PassBook™; PIN Change Services™; Point™; PointMobility™; PowerOn®; PowerOn2™; PowerOn Marketplace®; PowerOn Studio™; Prepaid Cards™; Professional Consulting Services™; PROFITability®; Organizational PROFITability® Analysis System™; Product PROFITability® Analysis System™; PROFITability® Budget™; PROFITability® Reporting Service™; PROFITstar®; PROFITstar® ALM Budgeting™; PROFITstar® Budget™; PROFITstar® Classic™; PROFITstar® Reporting Service™; ProfitStars®; ProfitStars® Direct™; ProfitStars® Financial Performance Suite™; ProfitStars Synergy®; Real Time™; Refi Analyzer™; Regulatory Reporting Solutions™; Relationship 360™; Relationship Profitability Management™ (RPM); RemitCentral™; RemitPlus®; RemitPlus® Express™; RemitPlus® HRCM™; RemitPlus® Remittance/Lockbox™; RemitWeb™; Remote Deposit Anywhere™; Remote Deposit Complete™; Remote Deposit Express™; Remote Deposit Now™; Remote Deposit Scan™; ReportHub™; RPM Reporting Service™; Shared Branch™; SigMaster™; Silhouette Document Imaging®; SilverLake Real Time™; SilverLake System®; SilverLake Teller™; Smart EIP™; Smart GL™; SmartSight®; smsGuardian™; Store & Forward™; StreamLine Platform Automation®; StreamLine Platform Automation® – Deposits™; StreamLine Platform Automation® – Loans™; Summit Support®; Sweep Account Processing™; SymAdvisor™; SymApp™; SymChoice Loan™; SymConnect™; SymForm™; SymForm PDF™; Symitar®; Symitar® ATM Services™; Symitar® eNotifications™; Symitar® Fraud Management™; Symitar® EASE™; SymX™; SymXchange™; Synapsys®; Synapsys® Lobby Tracking™; Synapsys® Member Relationship Management™; Synergy AdvancedPDF™; Synergy API Integration Toolkit™; Synergy AutoImport™; Synergy Automated Document Recognition™ (ADR); Synergy Batch Document Recognition™ (BDR); Synergy Check Archive™; Synergy DataMart™; Synergy Document Management™; Synergy Document Recognition™; Synergy Document Tracking™; Synergy eDistribution™; Synergy eMailAssist™; Synergy Enterprise Content Management™ (ECM); Synergy eSign™; Synergy eSignWeb™; Synergy eStorage™; Synergy Express™; Synergy ID Scan™; Synergy iSign™; Synergy Kofax Capture™; Synergy PowerSearch™; Synergy Reports™; Synergy Workflow Management™; TellerMaster™; TheWayiPay®; TimeTrack Human Resources™; TimeTrack Payroll System™; TimeTrack Time and Attendance™; Tokenization™; Transaction Logging and Vaulting Server™; Transaction Logging Server™; ValuePass™; Vehicle Pricing Interface™; Vertex Teller Automation System™; Vertex Teller Capture™; Virtual Transaction Logging Server™; WebEpisys™; Website Design & Hosting™; Website Security Services™; Wire Management™; Yellow Hammer™; Yellow Hammer ACH Origination™; Yellow Hammer BSA™; Yellow Hammer BSA Regulatory Consulting Service™; Yellow Hammer EFT Fraud Detective™; Yellow Hammer Fraud Detective™; Yellow Hammer SAR Center™; Yellow Hammer Wire Origination™; Xperience™

Slogans

Cutting-Edge IT Solutions for the Future of Credit Unions™; Know-It-All – Empowering Users Through Knowledge™; Leading through technology ... guiding through support™; Powering Actionable Insight™; Snap it Send it Spend it®; The Depth of Financial Intelligence™; We Are Looking Out For You™; Where Tradition Meets Technology™

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1. Loans with LTV < 80%

Mathematics using define results field.

Create a listing of loans that have a loan-to-value ratio of less than 80%.

For the report, create result fields for "Amount Paid Down" and "Loan-to-Value Ratio". The ratio field must be multiplied by 100 to print as a percent and should be edited to show a right side % symbol.

The listing should include:

- Full Customer Name
- Account Number
- Current Balance
- Appraised Value
- Amount Paid Down (field you created)
- Loan-to-Value Ratio (field you created)
- Next Payment Date
- Maturity Date
- Short Name for sorting only (see below)

Sort the report by short name, but do not print short names on the report.

There are no breaks for this query.

Total the Balance and Amount Paid Down fields, and average the Loan-to-Value ratio.

Print a floating dollar signs (\$) next to the amount fields.

NOTE: The current balance (CBAL) field is the customer's gross loan balance and query balance (QRYBAL) is the net balance of participation or only the bank's ownership (amount funded by bank) if the loan is a participation loan. If the loan is not a participation loan then both balances will be the same.

SL ADV QRY EXERCISE 1 - LTV RATIO LESS THAN 80%							
LTV LESS THAN 80%							PAGE 1
04/30/14 10:21:54	Customer name	Account Number	Loan Balance	Appraised Value	AMOUNT PAID DOWN	LTV Ratio	Next Pmt Due Date Maturity Date
	Airopark, LLC	9744	\$1,311,167.15	\$2,500,000	\$1,188,832.85	52.447%	11/01/08 4/01/10
	Airopark, LLC	909744	\$0.00	\$2,500,000	\$300,056.69	0.000%	12/01/08 7/10/10
	All Day Court, LLC	361999148	\$4,845,855.83	\$6,700,000	\$344,144.17	72.326%	5/04/09 7/04/14
	All Day Court, LLC	62001000091	\$1,172,728.14	\$1,800,000	\$27,271.86	65.152%	9/04/08 9/04/12
	Jack A Anderson	105731039	\$190,144.00	\$391,000	\$98,606.00	48.630%	8/15/08 7/15/10
	Jimmy K Banker	565601	\$16,002.00	\$275,000	\$233,998.00	5.819%	5/27/09 4/27/10

2. CD's with Balance Greater than \$80,000

Mathematics using define results field.

Produce a report of all CD accounts with a balance greater than \$80,000.00. Create an interest rate field that adds 1/2 percent to each current rate.

Include the existing rate field in the report, but multiply both the existing and new rate fields by 100 so they look better when printed.

The list should include:

- Full customer name
- Account number
- CD type
- Current balance
- Maturity date
- Both rate fields (New & Old) created (see above)

Sort the report by CD type, then account number. Total the current balance and average both rate fields.

Break the report by CD type and create a break text using the same field and print a % next to the rate fields.

SL ADV QRY EXERCISE 2 - LARGE BAL CD PROJ RATE RPT						
04/30/14 10:17:23	LARGE BALANCE CD PROJECTED RATE REPORT					PAGE 1
Customer name	Account Number	CD Type	Current Balance	Maturity Date	Current Rate	Projected Rate
Jane E Paulsen	9010000052	01	\$80,169.86	2/11/09	2.500%	3.000%
Caley M Cain	9010000109		\$80,169.86	2/11/09	2.500%	3.000%
		Totals for CD Type 01				
		TOTAL	\$160,339.72			
		AVG			2.500%	3.000%
		COUNT				2

3. Loan Customers by Area Code

Using substring & **DIGITS** operators in the define results fields.

Create a summary report, by area code, of loan customers. Use the **DIGITS** operator to convert the phone number to a character then use **Substring** to isolate the area code portion of the phone number.

The list should include:

- New area code field (field you created)
- Current Balance
- New Interest Rate (formatted as a rate)

Omit closed and charged-off loans.

Sort and break the report by the new area code field. When you perform the **break**, create a break text line for the new area code field that was created in the *define results section*.

Using the summary functions obtain the number of accounts for each area code by counting on the rate field, total the current balance field and average the rate field.

SL ADV QRY EXERCISE 3 - CD SUMMARY RPT BY AREACODE			
04/30/14 10:28:32		PAGE	1
	Loan	Loan	
	Balance	Rate	
Totals for Area Code 260			
TOTAL	\$.00		
AVG		5.250%	
COUNT		1	
Totals for Area Code 417			
TOTAL	\$2,714,905.11		
AVG		6.432%	
COUNT		78	

4. Past Due Report

Using Concatenation in the define results field and Line Wrapping.

Create a Past Due Loans listing that includes the customer name and address with each record separated by a line.

The list should include:

Customer Name

Address

Phone Number

Officer

Account number

Next Payment Date

Amount Past Due

Balance

Stack the customer name, address and phone in the first column. The remaining fields should print on the same line as the phone number.

Total the Amount Past Due and the Balance.

Sort by Officer then by Short Name but do not print the Short Name on the report.

Break by officer to provide totals for each officer.

** Edit the phone number to look like a standard phone number, remove commas from the account number and add \$ to amount fields.

04/30/14 09:44:15

Name Address Phone	Officer	Account Number	Next Pynt Due Date	Total Amt Due	Loan Balance
ABC Company 500 Broadway Suite 205 Springfield MO 65807 0	CML	31009	11-01-09	\$013.75	\$150,000.00
ABC Company 500 Broadway Suite 205 Springfield MO 65807 0		32009	1-01-09	\$120.24	\$150,000.00
John Jay DeRaedt 10N705 Tower Rd Cape Fair MO 65624 0	GEL	362999504	1-03-09	\$29,712.14	\$74,494.49
Mark J Deutsch 48W609 Ramm Rd Cape Fair MO 65624 0		362999625	7-15-08	\$39,680.00	\$116,000.00

5. Loans Maturing Next Year with no Related Deposit Account.

Using **DATE**, **DIGITS**, **MONTH** & **YEAR** operators in the define results fields.

Produce a report of all customers with loans maturing next year that do not have deposit accounts. Without using substring isolate the month portion of the maturity date. Use the **DIGITS** operator to convert the maturity date from a numeric to a character field, then use the **MONTH** operator to isolate the month and the **YEAR** operator to isolate the year.

Multiply the interest rate field by 100 for printing purposes.

The list should include:

- Maturity Month (field you created)
- Account number
- Loan type code
- Short name
- Current payoff
- New rate field (field you created)
- Maturity date (*in USA format*) (field you created)
- Maturity date in (*Date Data Format*) (field you created)

Sort the report by the month field, then by the account number.

In the Summary function sections, average the rate field, and total and average the payoff field and count the number of accounts.

Break the report by the month field and place a break text line on the report that represents the month field.

Print a % next to the rate field and a \$ next to the payoff field and suppress the month field from printing.

04/30/14 13:11:04		MATURING LOAN CUSTOMERS WITHOUT DEPOSIT ACCOUNTS				PAGE 1
Account Number	Loan Type	Short Name	Current Month	Loan Rate	Maturity Date	
			Payoff			
20709	C1	PARTICIPATION CORPOR	\$200,527.77	5.000%	01/14/2011	
10020709	C2	ABC COMPANY	\$120,312.32	5.000%	01/14/2011	
360999543	C1	HAIR JACKIE	\$4,877.64	7.500%	01/31/2011	
362999504	C1	DERAEDI JOHN JAY	\$81,489.35	6.750%	01/03/2011	
Totals for Month 1						
TOTAL			\$407,207.08			
AVG			\$101,801.77	6.063%		
COUNT				4		

6. Loans Maturing in the Next 6 Months

Using the **DATE, DIGITS & DAYS** operators in the define results fields.

Develop a report of all loans maturing in the next 180 days (6 mos.). Use the *Define Results Field* option to create fields so that the Query will be able to be processed in the future without having to have date fields maintained (do not use Julian date ranges). Use the date operators to create a date field that represents 180 days from the current system date. Also use the **DATE/DIGITS** operators to convert the maturity date to the same format. Then use these new fields in the *Select Records* option to pull in the correct records on the report.

The list should include:

- Short name
- Account number
- Query balance
- Maturity date – chose either the Julian maturity date **or** the Maturity date in Date Data Type format (for sorting only-suppress from printing).
- Select in order the 3 “Days” fields created
 - New maturity date field in “days” format
 - New field that represents today in “days” format
 - New field that represents 180 days in the future in the “days” format

Remove zero balance loans, closed loans and loans without a maturity date.

Sort the report by the maturity date (Julian or Date Data Type format), but do not print this field on the report. Print the \$ sign next to the balance field. There are no breaks for this query.

```
04/30/14 13:22:08  LOANS MATURING IN THE NEXT SIX MONTHS  PAGE 1
Short              Account      Loan      Maturity
Name              Number      Balance   Date
BANKER JIMMY K    55522      $28,000.00 05/27/2014
ROW M JAMES      462999192  $9,907.01  06/25/2014
ABC COMPANY      70509      $150,000.00 07/01/2014
MONTELEONE DANIEL T 360999296  $94,587.96 07/01/2014
ALL DAY COURT, LLC 361999148  $4,845,855.83 07/04/2014
BANKER JIMMY K    59297      $100,000.00 07/31/2014
SUZANNE'S BAKERY  2421      $120,000.00 08/01/2014
BANKER JIMMY K    80309      $100,000.00 08/04/2014
BANKER JIMMY K    5421      $27,476.63 08/06/2014
DOE JOHN         65777      $15,000.00 10/11/2014
AUSTIN MANSON S   159       $85,000.00 10/23/2014
*** END OF REPORT ***
                      ADV6
```

7. Overdrawn Accounts with no Deposits in Last 15 Days

Using the **DATE** operators, subtraction & concatenation in the define results fields.

Produce a list of overdrawn accounts that have not had a deposit in the last 15 days. Create fields so that the date fields do not have to be manually updated before the Query is processed in the future.

The list should include:

- Full customer name and address (**do not select CFNA3**)
- Telephone number
- Account number
- Current balance
- Date and amount of last deposit
- Account opening date
- Times OD life-to-date

Create record separators (-----) to print between each record.

Sort the report by short name, then account number, but do not print the short name.

There are no breaks for this query.

Use line wrapping (*Select output type and output form*) so that the customer name, address, and phone number print directly underneath each other. Use an edit code so that the phone number is formatted correctly.

SL ADV QRY EXERCISE 7 - OD ACCTS W/O DEP IN 15 DYS							PAGE
Overdrawn DDA's w/o Deposit in last 15 days							
Name/Address	Account	Current	Date of	Ant of	Date	Times	
Phone Number	Number	Balance	Last Dep	Last Dep	Opened	OD LTD	

American Builders & Contractors Inc 225 Deutsch St Aurora MO 65605 (000) 000-0000	6882846	\$1,135.82-	03/14/06	\$19,932.00	5/16/03	8	

8. CD Customers with a Birthday Next Month

Using the **DATE** and **MONTH** operators with addition in the define results fields.

Write a Query of all CD Customers with a birthday next month. Use the *Define Results Field* option to create fields to isolate the month portion of the birth date and the month portion of next month.

The list should include:

- Account number
- Current balance
- Birthday (field you created)
- Full customer name and address (**do not select CFNA3**)

Only present the birthday in the *USA format* on the report, but sort the report by the birthday field in Date Data Type format.

Use line wrapping so that the customer name and address prints directly underneath each other.

```
SL ADV QRY EXERCISE 8 - CD CUSTS W/ BDAY NEXT MO
04/30/14 13:48:49                                     PAGE 1
Account      Current  Date of   Customer name
Number       Balance  Birth     and Address
6002183      $448,526.71  05/01/1986  Tommy A Schnabel
                                     350 Park Ave
                                     Monett MO 65708
9010004597   $98,900.00  05/04/1964  John Jay DeRaedt
                                     10N785 Tower Rd
                                     Cape Fair MO 65624
3000013926   $9,983.16  05/07/1960  Rita W Colborn
                                     36 W 283 Mckee Rd
```

9. a Loan Yield – Part 1

Database query

Create a Loan Yield report by loan officer. This will be a two-step (two queries) process so create a query 9a.

Write a query definition that will create a database file containing summary information.

Create an annual interest field by multiplying the loan rate by the current balance.

The list should include:

- Officer code
- Current balance
- Annual interest field created

Omit closed accounts from the file. Sort and break this query by officer code. Count on the officer code field, total the current balance/query balance and total the annual interest field.

9.b Loan Yield – Part 2

Database query

Create a Loan yield report (query 9b) using the file you have just created in step one.

Create a yield field (5.2) by dividing the annual interest cost by the current balance.

The list should include:

- Officer code
- Officer count (# of loans)
- Current balance total
- Annual interest total
- Yield

10. CD's Maturing Next Month

Using **DATE**, **DIGITS**, **MONTH & YEAR** operators with concatenation in the define results fields.

Write a query that will list all CD's customers that are maturing next month, this query will be similar to query 8 and you will need both the month and year. Select only active CD's and CD's that have a balance remaining. Format the interest rate by multiplying it by 100, and create a maturity date in USA format, pull and wrap the name and address fields on the report and create a record separator line (*****) similar to query 7.

The list should include:

- Full customer name and address (**do not select CFNA3**)
- Account number
- Current balance
- Officer Code
- Interest Rate (formatted)
- Maturity Date (USA format)

Sort by customer name (in descending order), there are no breaks in this query; format all fields and use the Summary functions to count and total the query and average the interest rate field.

11.DDA Accounts Opened in Last 72 Months

Using **DIGITS** operator, substring and concatenation in the define results fields.

Select all DDA accounts opened in the last 72 months. Use the define results field and take the account opening date and remove the month, day, and year using substring and create three new fields, month, day and year, and then concatenate the three fields together with slashes (/) so the date is formatted to appear like 01/01/XX.

Create another field that represents the current date.

Pull all DDA accounts that have been opened in the last 72 months that are not currently closed or charged off.

The list should include:

- Short Name
- Officer code
- Current balance

Sort by officer and then by date opened.

Break by officer code; do not use a break text.

Total the balance field and count off any field in the "Summary" function section.

12.Loans Maturing in the Next 2 Years

Using **DIGITS** operator, substring and concatenation in the define results fields.

Create a loan query of all loans that are not charged off, closed or already matured that are maturing in the next 2 years. Include officer's full name.

The list should include:

- Loan number
- Short name
- Current balance
- Original balance
- Loan officer full name
- Maturity date

Formatted interest rate and select for the report (use the define results field).

Sort and break by officer, total balance fields, average the rate field and count off any field.

Insert a break text by officer full name and suppress the column from printing.

HELPFUL HINTS

ACCESSING QUERY

You can create a menu option to print a query that you have developed. The command to enter on the Command Line when creating the option is:

RUNQRY XXXXXX/YYYYYY

XXXXXX = name of the library in which the query resides
YYYYYY= query name

You can create a menu option for a query that you have developed which, when taken, will present the *Select Records* screen from the query, allowing you to enter information (name, date, etc.) to initiate an inquiry. The command to put on the Command Line when creating this option is:

RUNQRY XXXXXX/YYYYYY RCDSL(*YES)

XXXXXX = name of the library in which the query resides
YYYYYY = query name
RCDSL = record select

Example - If a bank is a member of a holding company along with two other banks, database queries can be written for each bank, pulling in loan information for each bank=s customers. These queries should be written to a common file. The common file is then queried, breaking by short name and then by bank, totaled by bank and customer, and flagged to *display*. The final query is then set up as a menu option using the command above. When this option is taken, the loan customers of all of the banks in the holding company can be inquired on at any one of the institutions. The *Select Records* screen (from the query) will be presented, allowing a short name to be entered for inquiry purposes. The only restriction is that the user must be familiar with the *Select Records* screen (using single quotation marks in front and behind the short name). Also, when creating the queries for the individual banks, the fields selected for the database files must be consistent as far as order is concerned (if short name is the first field selected on the initial bank=s query, it must also be the first field selected on all subsequent queries).

When saving your queries, be sure to save with the proper authority:

***LIBCRTAUT** - the owner is the only person who can run or change the query (do not use if query will run in nightly update)

***CHANGE** - any user can run or change the query, but only owner can copy, delete, or save with changes

***ALL** - any user can perform all functions except transferring to new owner or changing the authority value

***EXCLUDE** - no user except owner may use the query (do not use if query will run in nightly update)

***USE** - any user can run, print, or display the query definition. Only the owner can copy the query definition or save the query with changes.

NOTE: If a query is saved under the *LIBCRTAUT authority and the author is no longer employed, the author's IBM profile can't be deleted until the query is deleted (only QSECOFR can perform this kind of maintenance).

In *Report Column Formatting*, there are several valid **Edit Codes** (option 3) available for formatting purposes, including:

- 5 - blank out leading zeros
- 6 - business Tax ID
- 7- personal Social Security number
- 8 - telephone number
- 9 - normal balance

The two options in query that you will *rarely use*, if ever, need to maintain are:

Select Collating Sequence
Select Processing Options

SilverLake has embedded defaults that perform the functions of both of these options.

When you are finished defining your query, it is a good idea to run the report (F5) to see how it looks before actually processing the query. This will save considerable time if, for instance, you have forgotten to edit a field properly or if the query width is too big.

When using the *Specify Report Summary Functions* option, any field can be counted on but only numeric fields should be totaled.

Wherever you want to see totals on your query, you must specify a break.

INTERACTIVE VS. BATCH

Interactive - puts a high priority on your job, uses more system resources, may tie up your terminal, and bumps all other jobs down in the processing stream. Depending upon the query it may also, tie up or slow down the response time for other users on the system.

Batch - your query gets submitted in the job stream (gets in line in the processing stream), doesn't tie up your terminal, and doesn't take authority over jobs ahead in the processing stream.

PERPETUAL JULIAN DATE CALENDAR

Note: For Leap year, after February, add 1 to the day's number

Julian Date Calendar

(perpetual)

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Day
1	001	032	060	091	121	152	182	213	244	274	305	335	1
2	002	033	061	092	122	153	183	214	245	275	306	336	2
3	003	034	062	093	123	154	184	215	246	276	307	337	3
4	004	035	063	094	124	155	185	216	247	277	308	338	4
5	005	036	064	095	125	156	186	217	248	278	309	339	5
6	006	037	065	096	126	157	187	218	249	279	310	340	6
7	007	038	066	097	127	158	188	219	250	280	311	341	7
8	008	039	067	098	128	159	189	220	251	281	312	342	8
9	009	040	068	099	129	160	190	221	252	282	313	343	9
10	010	041	069	100	130	161	191	222	253	283	314	344	10
11	011	042	070	101	131	162	192	223	254	284	315	345	11
12	012	043	071	102	132	163	193	224	255	285	316	346	12
13	013	044	072	103	133	164	194	225	256	286	317	347	13
14	014	045	073	104	134	165	195	226	257	287	318	348	14
15	015	046	074	105	135	166	196	227	258	288	319	349	15
16	016	047	075	106	136	167	197	228	259	289	320	350	16
17	017	048	076	107	137	168	198	229	260	290	321	351	17
18	018	049	077	108	138	169	199	230	261	291	322	352	18
19	019	050	078	109	139	170	200	231	262	292	323	353	19
20	020	051	079	110	140	171	201	232	263	293	324	354	20
21	021	052	080	111	141	172	202	233	264	294	325	355	21
22	022	053	081	112	142	173	203	234	265	295	326	356	22
23	023	054	082	113	143	174	204	235	266	296	327	357	23
24	024	055	083	114	144	175	205	236	267	297	328	358	24
25	025	056	084	115	145	176	206	237	268	298	329	359	25
26	026	057	085	116	146	177	207	238	269	299	330	360	26
27	027	058	086	117	147	178	208	239	270	300	331	361	27
28	028	059	087	118	148	179	209	240	271	301	332	362	28
29	029		088	119	149	180	210	241	272	302	333	363	29
30	030		089	120	150	181	211	242	273	303	334	364	30
31	031		090		151		212	243		304		365	31