



# the **Lawson** Guru **Letter**

Thought-Provoking Commentary for the Lawson Software community

*Metro Regional Lawson User Group*

## Lawson's Data Dictionary

Presented by  
John Henley  
Decision Analytics  
November 2005

# Agenda

---

- **Who Am I?**
- **Lawson's Data Dictionary**
  - *What is it?*
  - *Where is it?*
- **How to get Data Dictionary Information**
- **Questions?**

# The LawsonGuru Letter

---



- **Monthly Newsletter**
  - *Read & Subscribe:*  
<http://www.danalytics.com/guru/letter/>
- **Periodic White Papers**
  - <http://www.danalytics.com/solutions/>
- **E-Mail:**
  - <mailto:john.henley@danalytics.com>
- **Web:**
  - <http://www.danalytics.com>
  - <http://www.lawsonguru.com>



# *Lawson's Data Dictionary*

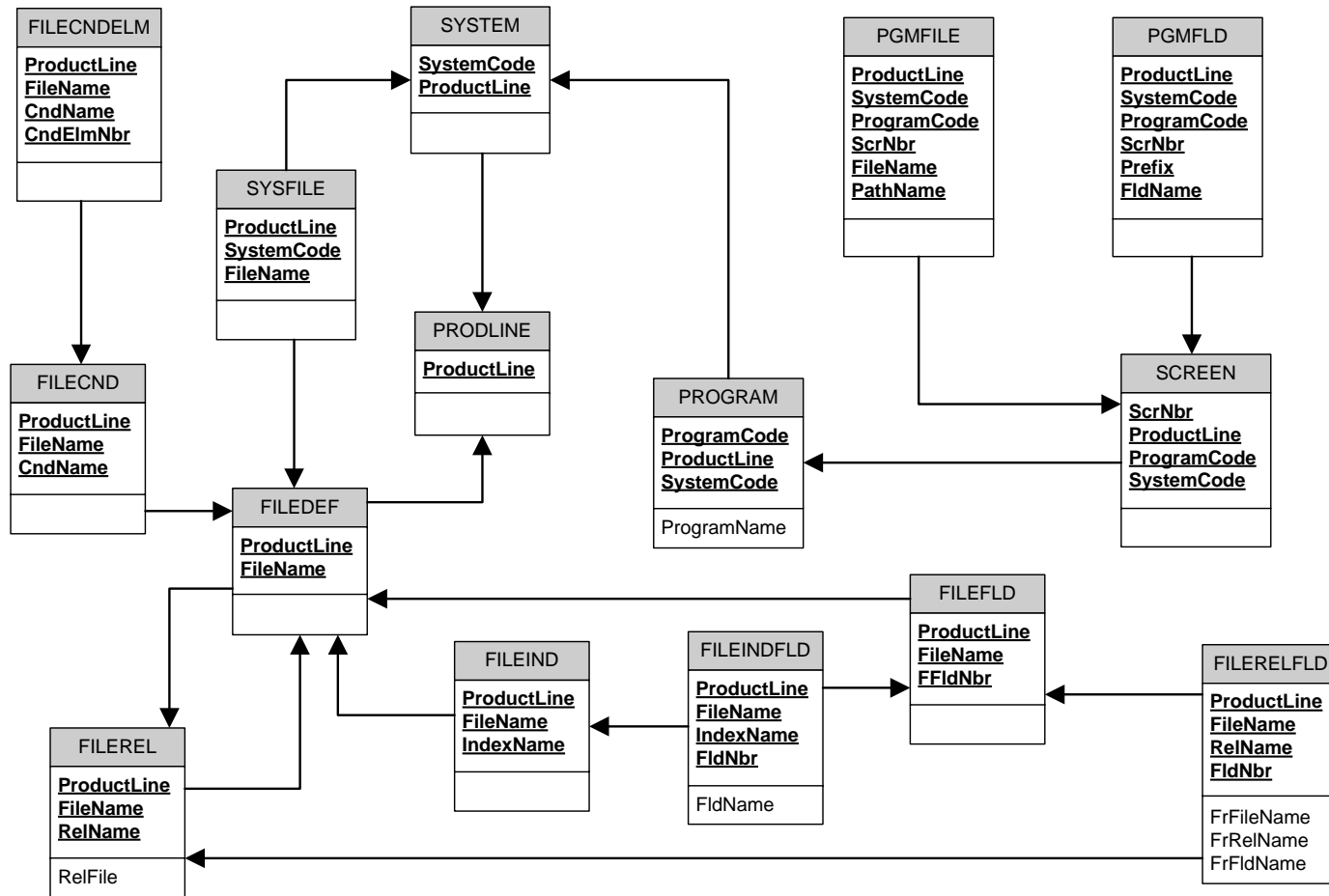
---

- **What is a Data Dictionary?**
  - *Meta Data -- Data describing data*
- **Where does Lawson store it's meta data?**
  - *GEN, of course!*
  - *Unix/Windows, not AS/400*
- **What's in Lawson's Data Dictionary?**
  - *Product Lines*
  - *Elements*
  - *Files/Tables*
  - *Indexes*
  - *Relationships*
  - *Conditions*
  - *Programs*

## *'Bird's Eye' view of Lawson's Data Dictionary*

**If you were to map out the meta data portion of Lawson's GEN database, it would look something like this:**

# "Bird's Eye" view of Lawson's Data Dictionary



## Product Line / System Code Definition

- Product Line
- Platform
- System Codes
- DB Spaces

Environment: 1

File Edit View Setup Window Help

Product Line Definition

Product Line DEV802

LauNT or Unix Yes

AS/400 RPGIII No

System	System Name	Release
AB	Assignment Billing	Release 8.0.2
AC	Activity Management	Release 8.0.2
AD		
AM	Asset Management	Release 8.0.2
AP	Accounts Payable	Release 8.0.2
AR	Accounts Receivable	Release 8.0.2
BL	Billing	Release 8.0.2
BN	Benefits	Release 8.0.2
BR	AC Billing Revenue	Release 8.0.2
CB	Cash Ledger	Release 8.0.2
CX	Case Carts	Release 8.0.2
DA	DA Custom	Custom Release 8.0.2
DT	Bills of Exchange	Release 8.0.2
EB		

Help Clear Select Define Delete Home

# System Code Definition

- **System Code metadata is stored in:**
  - *SYSTEM*
- **Using *rngdbdump* to get information about a Lawson System Code:**

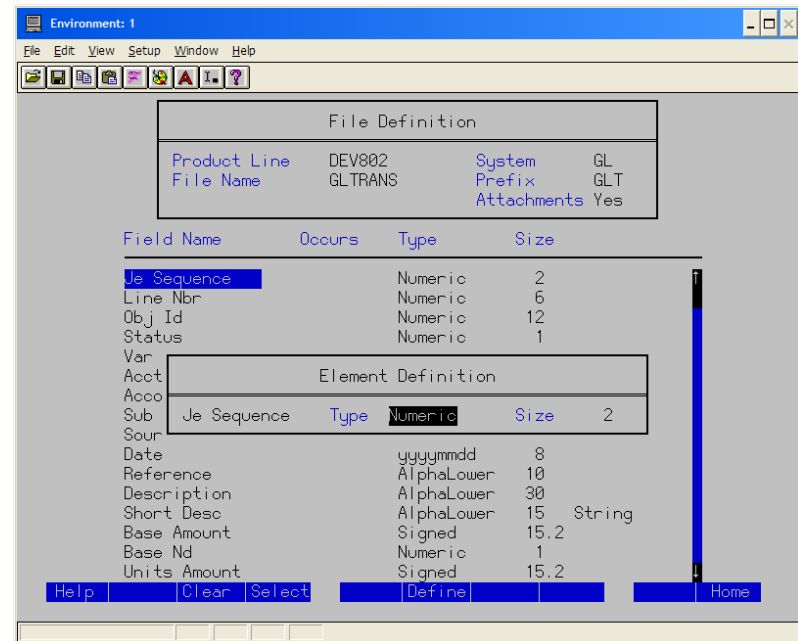
```
$ rngdbdump -c GEN SYSTEM -v ProductLine=DEV802 | lashow
```

```
ProductLine, SystemCode, SysName, JobQueue, DBSpace, ReleaseInfo, SysVersion  
"DEV802", "AB", "Assignment Billing", "", "Release 8.0.2",  
"DEV802", "AC", "Activity Management", "", "Release 8.0.2",  
"DEV802", "AD", "",  
"DEV802", "AM", "Asset Management", "", "Release 8.0.2",  
"DEV802", "AP", "Accounts Payable", "", "Release 8.0.2",  
"DEV802", "AR", "Accounts Receivable", "", "Release 8.0.2",  
"DEV802", "BL", "Billing", "", "Release 8.0.2",  
"DEV802", "BN", "Benefits", "", "Release 8.0.2",  
"DEV802", "BR", "AC Billing Revenue", "", "Release 8.0.2",  
"DEV802", "CB", "Cash Ledger", "", "Release 8.0.2",
```



# Element Definition

- “Element” is a fancy name for “Field”
- When you add a new field to a file, it can either:
  - Reuse an existing Element’s definition (e.g. TO-COMPANY uses Element COMPANY)
  - becomes a new “Element”, which can then be used in other tables
- Super Elements and Element Groups have been retired in the 8.x Environment



# File Definition

- File Name
- Product Line
- System Code
- Prefix
- Fields (Elements)
  - Name
  - Type
  - Length

Field Name	Occurs	Type	Size
Company		Numeric	4
Fiscal Year		Numeric	4
Acct Period		Numeric	2
Control Group		Numeric	8
System		Alpha	2
Je Type		Alpha	1
Je Type 1		AlphaLower	1
Je Sequence		Numeric	2
Line Nbr		Numeric	6
Obj Id		Numeric	12
Status		Numeric	1
Var Levels		Alpha	30
Acct Unit		Alpha	15
Account		Numeric	6
Sub Account		Numeric	4
Source Code		Alpha	2

## Lawson File Abbreviations

---

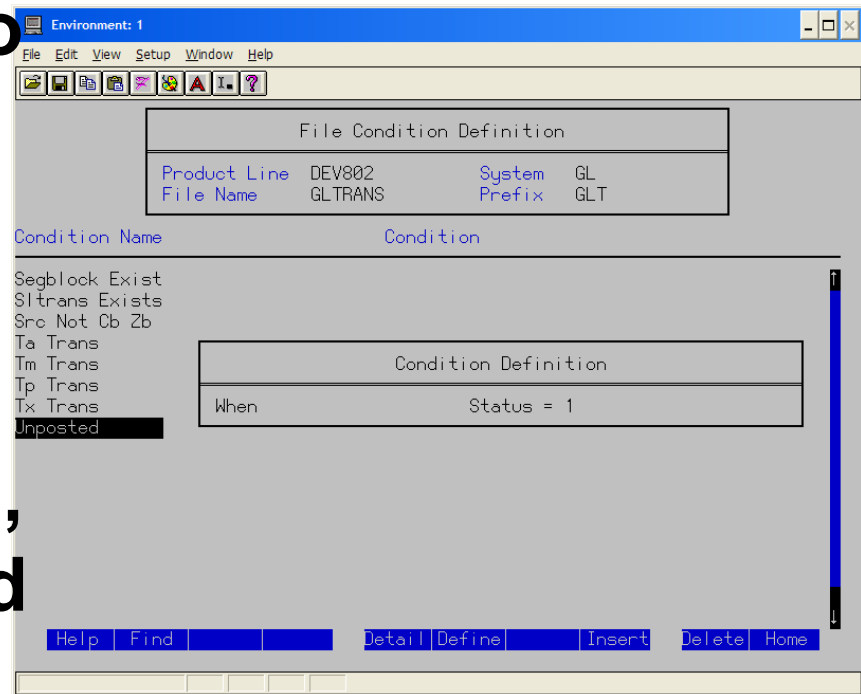
- **Lawson Application Files (i.e. Tables) are assigned a 3-character prefix, which is used to create the name of each index for the table, and when referencing the fields in a program.**
  - *The Activity Group table (ACACTGRP) is prefixed AGP.*
  - *The indexes on ACACTGRP are named AGPSETx, e.g. AGPSET1.*
  - *In a Lawson COBOL program, the fields are referenced with the AGP prefix, e.g. AGP-ACTIVITY-GROUP.*
- **Generate your own list of the Lawson tables and their prefixes using the rngdbdump utility against the FILEDEF table in the GEN product line (provided you have the appropriate**

```
$ rngdbdump -c -iFDFSET2 GEN FILEDEF -f Prefix FileName -k DEV802 | lashow  
$ rngdbdump -c -iFDFSET3 GEN FILEDEF -f SystemCode Prefix FileName -k DEV802 | lashow
```



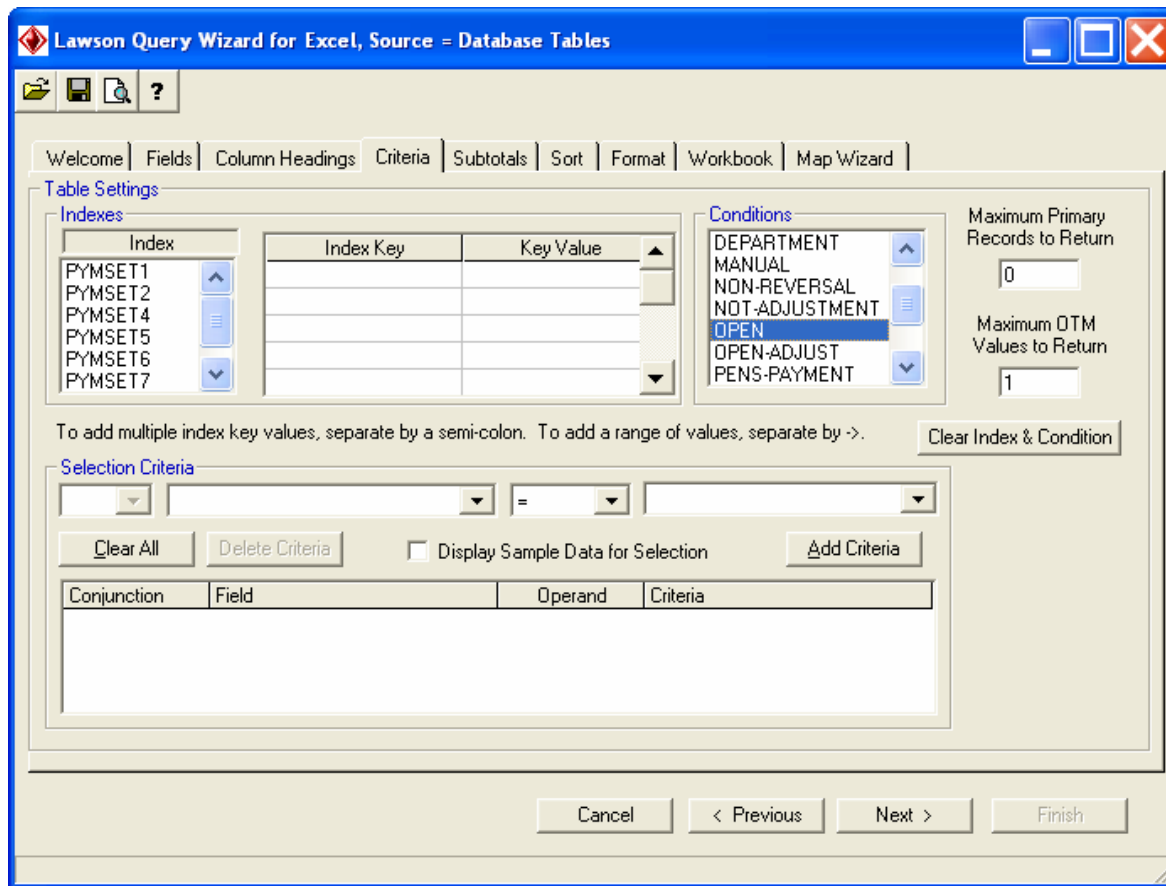
# File Conditions

- Commonly used to “subset” records for conditional indexes
- Conditions can be on multiple values, elements, or based on existence/non-existence of a relationship



# File Conditions

- **Conditions are used by Lawson OLE DB Provider and Excel Query Wizard**



# File Conditions

- **Condition metadata is stored in:**
  - *FILECND* (condition)
  - *FILECNDELM* (fields that make up the condition)
- **Using *rngdbdump* to get information about Lawson conditions:**

```
$ rngdbdump -c GEN FILECND -v ProductLine=TRAIN801 FileName=PAYMASTR | lashow
```

```
ProductLine,FileName,CndName,CndType,nOccurs  
"TRAIN801","PAYMASTR","ACH-EXISTS",2,  
"TRAIN801","PAYMASTR","ADJUSTMENT",1,  
"TRAIN801","PAYMASTR","CLOSED",1,  
.  
.  
.  
"TRAIN801","PAYMASTR","SYSTEM",1,
```

```
$ rngdbdump -c GEN FILECNDFLD -v ProductLine=TRAIN FileName=PAYMASTR CndName=SYSTEM | lashow
```

```
ProductLine,FileName,CndName,CndElmNbr,LeftParen,FrFldType,FrFldOp,FrFileName,Fr  
RelName,FrFldName,Operator,ToFldType,ToFldOp,ToFileName,ToRelName,ToFldName,Righ  
tParen,Conjunction,ObjType  
"TRAIN801","PAYMASTR","SYSTEM",,1,"PAYMASTR",,"CHECK-TYPE",,"A",,,,,,  
"TRAIN801","PAYMASTR","SYSTEM",1,1,"PAYMASTR",,"CHECK-TYPE",,"P",,,,,,  
"TRAIN801","PAYMASTR","SYSTEM",2,1,"PAYMASTR",,"CHECK-TYPE",,"S",,,,,,
```

# File Conditions

- Using the *cndrpt* report to get Lawson condition information:

```
$ cndrpt TRAIN801 PAYMASTR | lashow
```

Condition	Type
SYSTEM	FILEFLD
where (	Check Type = "A"
Or	Check Type = "P"
Or	Check Type = "S" )
Is Used In No Indexes	
Is Used In No Rels	
Is Used In No SubType	
Is Used In No States	
Is Used In No CndFlds	
Is Used In No AvfFlds	
Is Used In No Rules	

# Index Definition

- **Every file MUST have at least 1 index**
- **Lawson Naming Conventions**
  - 3 character prefix
  - the 3 characters “SET”
  - a single digit; 1=primary, 2-9=secondary
- **Primary Index:**
  - No Duplicates
  - Can't Change Key(s)
- **Conditional Indexes, e.g. GLTSET8 uses the 'Unposted' condition**

The top screenshot shows the 'Index Definition' window for 'GLTSET1'. The table below summarizes the data shown in the window:

Field	Value	Field	Value	Field	Value
Product Line	DEV802	Index Name	GLTSET1	Duplicates	No
File Name	GLTRANS	Primary	Yes	Key Change	No
File Prefix	GLT	Condition Name			

The 'Key Fields' list includes: Company, Fiscal Year, Acct Period, Control Group, System, Je Type, Je Sequence, Line Nbr.

The bottom screenshot shows the 'Index Definition' window for 'GLTSET8'. The table below summarizes the data shown in the window:

Field	Value	Field	Value	Field	Value
Product Line	DEV802	Index Name	GLTSET8	Duplicates	No
File Name	GLTRANS	Primary	No	Key Change	Yes
File Prefix	GLT	Condition Name	Unposted		

The 'Key Fields' list includes: Company, Var Levels, Acct Unit, Account, Sub Account, Fiscal Year, Acct Period, System, Obj Id.

The 'Index Records' section shows: Where Status = 1.



# Index Definition

- **Index metadata is stored in:**
  - *FILEIND* (index)
  - *FILEINDFLD* (fields that make up the index)
- **Using *rngdbdump* to get information about a Lawson index:**

```
$ rngdbdump -c GEN FILEIND -v ProductLine=DEV802 FileName=GLTRANS | lashow
```

```
ProductLine,FileName,IndexName,IsPrimary,IsDuplicate,IsKeyChg,PathNbr,CndName,KeyedPhysical,IsVirtual
"DEV802","GLTRANS","GLTSET1",1,,1,,
"DEV802","GLTRANS","GLTSET2",,,1,2,"EXCLUDE-MEMOS",,
"DEV802","GLTRANS","GLTSET3",,,1,3,"EXCLUDE-MEMOS",,
"DEV802","GLTRANS","GLTSET6",,,1,6,"EXCLUDE-MEMOS",,
"DEV802","GLTRANS","GLTSET7",,,,7,,
"DEV802","GLTRANS","GLTSET8",,,1,8,"UNPOSTED",,
```

```
$ rngdbdump -c GEN FILEINDFLD -v ProductLine=DEV802 FileName=GLTRANS IndexName=GLTSET1 | lashow
```

```
ProductLine,FileName,IndexName,FldNbr,IsDesc,FldName
"DEV802","GLTRANS","GLTSET1",,,,"COMPANY"
"DEV802","GLTRANS","GLTSET1",1,,,"FISCAL-YEAR"
"DEV802","GLTRANS","GLTSET1",2,,,"ACCT-PERIOD"
"DEV802","GLTRANS","GLTSET1",3,,,"CONTROL-GROUP"
"DEV802","GLTRANS","GLTSET1",4,,,"SYSTEM"
"DEV802","GLTRANS","GLTSET1",5,,,"JE-TYPE"
"DEV802","GLTRANS","GLTSET1",6,,,"JE-SEQUENCE"
"DEV802","GLTRANS","GLTSET1",7,,,"LINE-NBR"
```



# Index Definition

---

- Using the *dbindusage* report to get Lawson index information:

```
$ dbindusage DEV802 GLTRANS GLTSET1 | lashow
```

```
Index Usage Report For Index 'GLTSET1' In ProductLine DEV802/FileName GLTRANS
```

```
-----  
In Relation - GLTRANS In File GLCONTROL
```

```
In Relation - GLTRANS In File GLJELOG
```

```
In Relation - GLTRANS In File GLSYSTEM
```

```
In Relation - GLTRANS In File GLTRANS
```

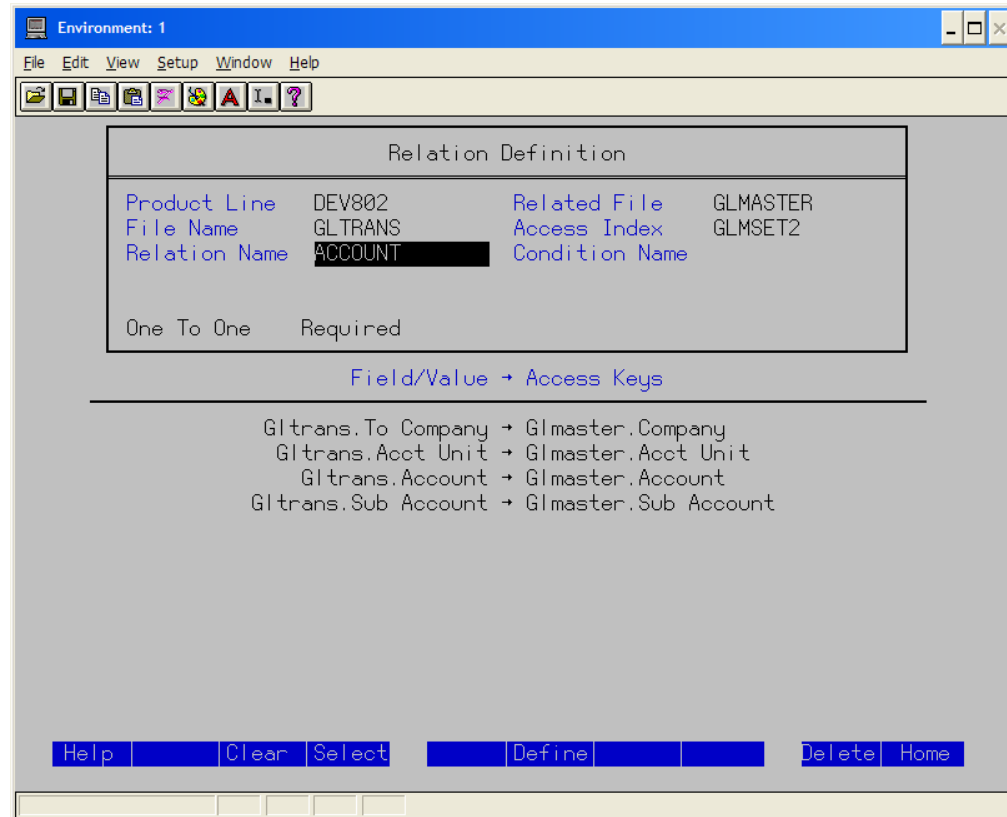
## *File Relationships*

---

- **A logical connection between two database files, a.k.a. “join”**
- **Used to “relate” one or more records from one file, to one or more records in another file, according to a set of rules**
- **Relationship types:**
  - *One-to-One*
  - *One-to-Many*
  - *Dependent*
  - *Self Referential*

# File Relationships

- Defining a relationship



# File Relationships

- **Relationship metadata is stored in:**
  - *FILEREL* (relationship)
  - *FILERELFLD* (fields that make up the relation)
- **Using *rngdbdump* to get information about a Lawson relation:**

```
$ rngdbdump -c GEN FILEREL -v ProductLine=DEV802 FileName=GLTRANS | lashow
```

```
ProductLine,FileName,RelName,RelFile,IndexName,Type,Required,DelRule,DptLvl,CndName,NotUsed,Filler
"DEV802","GLTRANS","ACCOUNT","GLMASTER","GLMSET2",,1,,,,,
"DEV802","GLTRANS","ACTIVITY","ACACTIVITY","ACVSET1",,,,,,
"DEV802","GLTRANS","ACTRANS","ACTRANS","ATNSET14",1,,,,,
"DEV802","GLTRANS","AMTRANS","AMTRANS","AMTSET8",1,,,,,
"DEV802","GLTRANS","APAPDHIST","APAPDHIST","AH2SET5",1,,,,,
.
.
.
```

```
$ rngdbdump -c GEN FILERELFLD -v ProductLine=DEV802 FileName=GLTRANS RelName=ACCOUNT | lashow
```

```
ProductLine,FileName,RelName,FldNbr,FrFldType,FrFileName,FrRelName,FrFldName
"DEV802","GLTRANS","ACCOUNT",,1,"GLTRANS",,"TO-COMPANY"
"DEV802","GLTRANS","ACCOUNT",1,1,"GLTRANS",,"ACCT-UNIT"
"DEV802","GLTRANS","ACCOUNT",2,1,"GLTRANS",,"ACCOUNT"
"DEV802","GLTRANS","ACCOUNT",3,1,"GLTRANS",,"SUB-ACCOUNT"
```

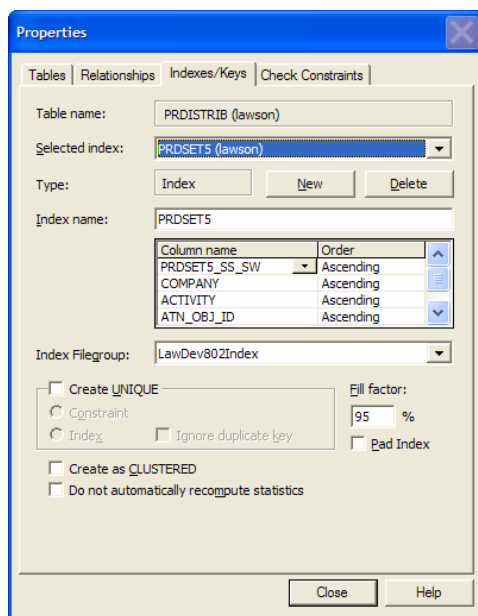
- **One of the beauties of Lawson's n-tiered architecture is that it is totally separated from the database. This allows “plug-and-play” implementation of a desired database**
- **This also means that “metadata” is not stored in the database, but rather in the GEN repository**

- **Reserved Words**
  - *Certain table names, field names, etc. are “reserved words” in a given database syntax, e.g. PLAN becomes R\_PLAN*
- **Underscores, not hyphens**
- **Descending values in indexes (one’s complement)**
- **Array columns (e.g., AMOUNT\_01)**

# Database Implementation Specifics

## • Subset Switches

- Conditions used to include records in a given “index set” to speed retrieval; records that meet that condition have the flag/switch set “Y”.
- First field in a subset index
- If you use SQL to join tables, make sure you consider SS\_SW’s (ex. ACTTRANS->PRDISTRIB)
- Examples:
  - GLTSET8\_SS\_SW – Unposted Transactions
  - PRDSET5\_SS\_SW – Payroll Distribution with an Activity:



```
SELECT ATN.OBJ_ID, PRD.ATN_OBJ_ID
FROM
LawDev802.lawson.ACTTRANS ATN,
LawDev802.lawson.PRDISTRIB PRD
where ATN.ACTIVITY = PRD.ACTIVITY
AND ATN.COMPANY = PRD.COMPANY
AND PRD.ATN_OBJ_ID = ATN.OBJ_ID
AND PRD.PRDSET5_SS_SW = 'Y'
```

### Caution:

If you ever update the database directly, be sure to use the Lawson *sqlfix* utility to update the \_SS\_SW columns





# Surfing the Lawson Data Dictionary

- Using the *dbdoc* report to get Lawson data dictionary information:

```
$ dbdoc DEV802 GL GLTRANS | lashow
```

GLTRANS FILE

General Ledger Transactions

The General Ledger Transaction file contains the journal entry detail information to be posted to the Lawson General Ledger system. The transactions are not deleted when posted and GL300 (General Ledger History Delete) is run to clear out information no longer needed.

REFERENCED BY			GLTRANS FILE INDEX			FIELD NAME	DESCRIPTION/VALID VALUES	UPDATED BY	
GL145	GL170	GL240	GL145	GL170	GL240	GLT-COMPANY	Numeric 4	GL110	GL146
GL285	GL286	GL287	GL285	GL286	GL287	Company	This is the company into which the transactions are to be interfaced. For intercompany processing, this field is considered the originating company. Must be defined in GLSYSTEM.	GL167	GL190
GL41.1	GL41.3	JB240	GL41.1	GL41.3	JB240	GLT-FISCAL-YEAR	Numeric 4	GL191	GL196
GL325	GL327	GL235	GL325	GL327	GL235	Fiscal Year	This is the current fiscal year. This field is updated by Period Closing	GL197	GL199
AC191	AP125	AP126	AC191	AP125	AP126			GL290	GL40.1
AP27.1	CB10.1	CB191	AP27.1	CB10.1	CB191			GL40.2	GL40.3
EE135	EE35.1	EE35.2	EE135	EE35.1	EE35.2			GL40.6	GL40.7
FB190	FB211	FB296	FB190	FB211	FB296			GL40.8	GL44.1
FB45.1	FB95.1	FB95.2	FB45.1	FB95.1	FB95.2			GL45.1	GL500
FB95.6	GL165	GL298	FB95.6	GL165	GL298			IFGT.1	
GL94.2	GL94.3	GL94.4	GL94.2	GL94.3	GL94.4				



# Surfing the Lawson Data Dictionary

- Using web utility *dme* to get Lawson data dictionary information:

<http://<<webserver>>/cgi-lawson/dme.exe?PROD=GEN&FILE=FILEDEF&FIELD=FILENAME;SYSTEMCODE;PREFIX&SELECT=PRODUCTLINE=DEV802>

powered by the LOGAN Engine  
Mail Document  
Publish Document

Filename↑↓	Systemcode↑↓	Prefix↑↓
ABASSIGN	AB	ASN
ABPAYOPT	AB	ABP
ABTRANS	AB	ABN
ACACCTCAT	AC	AAX
ACACCTCATX	AC	AXX
ACACCTCLSS	AC	AXA
ACACRESRT	AC	CRR
ACACRESRTX	AC	CRX
ACACTCOPY	AC	CYY
ACACTGPREL	AC	AGL
ACACTGRP	AC	AGP
ACACTIVITY	AC	ACV
ACACTMXVAL	AC	AJV
ACACTMXVDT	AC	MXD
ACACTREL	AC	ARE
ACACTSEG	AC	CSG
ACADDASSGN	AC	AAS
ACADDLCNTR	BR	ADN
ACADDRESS	AC	ADD
ACALLOC	AC	AOC
ACALLOCGP	AC	ALG

Next 25 records...



# Understand the Lawson Data Dictionary

<http://www.lawsonguru.com>

The screenshot shows the LawsonGuru.com website interface. The top navigation menu includes 'Home', 'Financials', 'HR/Payroll', 'Procurement', 'EPA/BI', 'Technical', 'Documentation', 'Forums', 'FAQ', 'Blog', and 'Site Map'. A red box highlights 'Data Dictionary' in the 'Technical' dropdown menu. A red arrow points from this box to an Entity Relationship Diagram (ERD) titled 'Lawson ERDs'. Another red arrow points from the ERD to a table titled 'AR DISTRIB FILE'.

FIELD NAME	DESCRIPTION/VALID VALUES	UPDATED BY
AND-COMPANY	Numeric 4	AR116 AR114
General Ledger	The general ledger company associated with this distribution.	AR137 AR130
Company		AR176 AR20 1
		AR11 AR11 1
		AR11 1 AR12 2



# *Lawson's Data Dictionary*

---

- **Questions?**

# The LawsonGuru Letter

---



- **Monthly Newsletter**
  - *Read & Subscribe:*  
<http://www.danalytics.com/guru/letter/>
- **Periodic White Papers**
  - <http://www.danalytics.com/solutions/>
- **E-Mail:**
  - <mailto:john.henley@danalytics.com>
- **Web:**
  - <http://www.danalytics.com>
  - <http://www.lawsonguru.com>

