

Appendix 1. A Comparison

Child Support Enforcement System (CSES)	State Child Support–Decision Support System (SCS-DSS)
Each piece of data is treated as an individual transaction. A transaction creates, modifies, or deletes information about a child support case. This is referred to as transaction processing.	Collects on a regular basis data stored in CSES as well as other systems. In essence, a series of data snapshots is taken over time to create a <i>multidimensional</i> view of the organization. This is referred to as analytic processing.

Multidimensional: For a detailed discussion of this term, [click here.](#)

Consider these two partial record layouts focusing on NCP locate information. The first is how the record might appear in CSES.

Client_Master Table		
Field Name	Data Type	Unique?
Primary Key (PK) Case_ID	String	Yes
NCP_Locate_Required	Yes/No	No
Date_NCP_Locate_Initiated	Date	No
Date_Located	Date	No
Locate_Complete	Yes/No	No
... ¹
Date Created	Date	No
Date Modified	Date	No

At any given time, an NCP can have only one locate status: known or unknown. However, over the history of a case, that status may change many times. The SCS-DSS captures that information. The following is an example of the same information recorded in an SCS-DSS.

Dlocate Table ("D" prefix is used to indicate that the table is stored in the SCS-DSS)		
Field Name	Data Type	Unique?
PK Record_ID	Number	Yes
Key (K) Case_ID	String	No
NCP_Locate_Required	Yes/No	No
Date_NCP_Locate_Initiated	Date	No
Date_Located	Date	No
Locate_Complete	Yes/No	No
... ²
Date Created	Date	No
Date Modified	Date	No

While the two tables may look identical, there is one critical difference: in the CSES record layout, the primary key (PK) is Case_ID. This means that only one record in the table can have this value. In the SCS-DSS, the primary key is the Record_ID, a number automatically generated as each record is entered. This allows for the storage of multiple records with the same Case_ID. Case_ID retains a key (K) or indexed relationship so that its information can be retrieved as quickly as it would be on CSES.

If expressed in plain language, CSES might say:

It was determined on 07/05/2002 that a locate effort was required for case ID 345393.	OR	The NCP for case 345393 was located on 07/26/2002.
---	-----------	--

¹ The remainder of the data has been omitted for clarity's sake.

² The remainder of the data has been omitted for clarity's sake.

However, the SCS-DSS will tell a far more detailed story:

- On 07/01/1999, it was determined that a locate effort was required for the NCP associated with Case-ID 345393 as recorded in Record_ID #12456789.
- On 07/28/1999, subject NCP for Case-ID 345393 was located as recorded in record #12459003.
- On 6/30/2000, it was determined that a locate effort was required for the NCP associated with Case ID 345393 as recorded in record #12468932.
- On 07/19/2000, subject NCP for Case ID 345393 was located as recorded in record #12470032.
- On 07/01/2001, it was determined that a locate effort was required for the NCP associated with Case ID 345393 as recorded in record #12479189.
- On 07/25/2001, subject NCP for Case ID 345393 was located as recorded in record #12481154.
- On 07/05/2002, it was determined that a locate effort was required for case ID 345393 as recorded in record #12489637.
- On 07/26/2002, subject NCP for Case ID 345393 was located as recorded in record #12492014.

Before performing any in-depth analysis, it might be beneficial to ascertain what this NCP does every spring.

CSES	SCS-DSS
■ Contains data that is currently accurate	■ Contains data images that were accurate at the time they were moved into the SCS-DSS

As can be seen in the box, two types of information tracking occur. The first (CSES) tracks the here and now—an NCP can either require a locate effort or is located, but not both. The SCS-DSS tracks every locate effort required and the completion of every locate. It is important to note that, if the data is not transferred in a timely manner to the SCS-DSS, there will be gaps in the information. A realistic goal is to copy any changes in CSES to the SCS-DSS within 24 to 48 hours. Transferring it any earlier than 24 hours could result in incomplete or incorrect data because there could be callbacks correcting the initial information. Transferring it any later than 48 hours could lead to gaps in the data.

CSES	SCS-DSS
■ Data is added, updated, or deleted	■ Data cannot be changed

CSES assists in the overall operation of the child support enforcement (CSE) organization. It must be able to immediately respond to additions, updates, and deletions of current information. The SCS-DSS takes snapshots of these activities to capture them for historical and analytical operations; these snapshots must not be altered. If a change is required, it must first occur in CSES and then be communicated to the SCS-DSS.

To illustrate the different levels of data extraction and analysis, this section will pose two hypothetical questions to each system. It will be apparent that CSES queries and answers, though useful on certain levels, are much simpler than those for the SCS-DSS.

A final note before beginning: Whether communicating directly with CSES or communicating with the SCS-DSS using an elaborate data-mining tool, the lingua franca for almost all database systems is Structured Query Language (SQL). If you communicate directly with CSES, SQL may be your only data-manipulation tool. If you communicate with the SCS-DSS, you may form your queries in a much higher, more user-friendly language. However, several actions will occur once you hit the enter key. First, the data-mining tool will determine which data elements as well as which boundaries (all, between, equal to, etc.) are required. It then will create an SQL statement to retrieve those records. Once the records have been retrieved, it will apply its own interfaces to the records to present the information in the desired format (by record, report, graph). To provide an understanding of the use of SQL, SQL statements have been included in some of these examples.

Query #1

The first query will ask CSES:

Which Client Cases are Currently in an NCP_Locate?		
Keyword	Data Elements, Action and/or Conditions	Explanation
SELECT	Client_Master_Record.Case_ID, Client_Master_Record.NCP_Locate_Required	Fields to be viewed
FROM	Client_Master_Record	Locations of fields
WHERE	Client_Master_Record.NCP_Locate_Required=Yes	Condition
ORDER BY	Client_Master_Record.Case_ID	Sort order

Such a query would yield results similar to the following:

Case_ID	NCP_Locate_Required
1075	Yes
12345	Yes
1271	Yes
1417	Yes
147	Yes
195	Yes

The sort order may appear odd, but because the Case_ID is defined as a string, the resulting sort is a text sort rather than a numeric sort.

Using an SCS-DSS, the following types of information could be determined:

How Many Locates Have Been Established and Completed Since 1997? (By Year)		
Year	Established	Completed
1997	256	131
1998	289	173
1999	310	225
2000	400	350
2001	380	320
2002	125	64

How Many Locates Were Established and Completed in 1997? (By Quarter)			
Year	Quarter	Established	Completed
1997		256	131
	Q1	43	27
	Q2	56	19
	Q3	81	51
	Q4	76	34

How Many Locates Were Established and Completed in 1997? (By Quarter and County)				
Year	Quarter	County	Established	Completed
1997			256	131
	Q1		43	27
		County A	9	8
		County B	14	9
		County C	20	10
	Q2		56	19
		County A	14	8
		County B	32	5
		County C	10	6
	Q3		81	51
		County A	12	22
		County B	43	13
		County C	26	16
	Q4		76	34
		County A	22	6
		County B	40	18
		County C	14	10

How Many Locates Were Established and Completed in 1997? (By Congressional District)			
Year	Congressional District	Established	Completed
1997		256	131
	District 1	42	31
	District 2	84	23
	District 3	57	38
	District 4	73	39

How Many Locates Were Established and Completed in 1997? (By Congressional District and Case ID)				
Year	District	Case ID	Established	Completed
1997			256	131
	District 1		42	31
		1271	Yes	No
		1417	Yes	No
		1955	Yes	No
		3225	Yes	No
		293	Yes	Yes
		391	No	Yes
		489	No	Yes
		635	No	Yes
	... ³			

Query #2

CSES may be asked:

How Many Client Cases Are Currently in an NCP_Locate?		
Keyword		Explanation
SELECT	Client_Master_Record.NCP_Locate_Required, Count (Client_Master_Record.NCP_Locate_Required) AS Count_of_NCP_Locate_Required	Fields to be viewed. Notice ad hoc field created to store the count value.
FROM	Client_Master_Record	Location of fields
Group_By	Client_Master_Record.NCP_Locate_Required	How to group records for counting. In this case, there are two groups (Yes and No).
Having	Client_Master_Record.NCP_Locate_Required=Yes	Condition

It would yield this kind of result:

NCP_Locate_Required	Count_of_NCP_Locate_Required
Yes	27

The SCS-DSS could yield these results:

How Many Locates Have Been Established Since 1997? (By Year)	
Year	Established
1997	256
1998	289
1999	310
2000	400
2001	380
2002	125

As you can see, an SCS-DSS allows you to analyze a concept—in this case, locates—from many different perspectives, called dimensions.

³ The remainder of the records has been omitted for clarity's sake.

There are two important properties of a stable SCS-DSS:

- No matter how the data is rearranged, the values always add up to the same total. In our example, there are always 256 established locates in 1997, regardless of the other details examined. This reflects the fact that all reports are drawn from a single data source.
- An SCS-DSS offers additional drill-down and drill-across (“slice and dice”) capabilities. In our example, the SCS-DSS shows us an anomaly: the number of locates exceeded the number established in County A during the third quarter of 1997. Because this was the only occurrence of this phenomenon, we must ask “Why?” Analysis may reveal that a particularly aggressive caseworker was temporarily assigned to the county for that quarter. Preliminary answers may lead to additional questions.

For example, why don’t similar patterns occur when that caseworker is in his or her home county? The answer may be that the caseworker’s style was particularly effective in this county. Armed with the new, in-depth analysis from the SCS-DSS, the CSE organization can evaluate the possibility of reproducing that style to improve outcomes across the enterprise.

It is likely that further research will be needed after an SCS-DSS detects any anomalies. In our example, subsequent research might indicate that the county participated in a successful demonstration project but did not pursue it because it lacked the capability to document its success.

As is evident from this comparison of queries and responses, CSE decision makers can broaden their understanding of how their organizations operate by adding the sophistication of an SCS-DSS to their suite of management tools. Where CSES provides raw numbers, the SCS-DSS provides analysis, indicating not just that something happened, but when and where it happened. The SCS-DSS builds on the information that CSES provides, offering valuable insights into trends and opportunities.