

Use System Catalog to Describe Schema

Elementary example: Database contains
a table People,
a table Departments
a system catalog table Tables
a system catalog table Attributes

DATA TABLES

People

ID	LName	FName	DOB
1	Haynes	Susan	09/09/1999
2	Jiang	Siyuan	10/10/2000

Departments

Name	ID
COSC	1
Math	2
Chemistry	3

SYSTEM CATALOG TABLES

Tables

Name	Location
Tables	http://server.misc/sampleDB/SysCat.xml
Attributes	c://Documents/DBs/sampleDB/SysCat0.txt
People	c://Documents/DBs/sampleDB/People.dat
Departments	c://Documents/DBs/sampleDB/Depts.dat

Attributes

Name	Table	Type	Size	Offset
Name	Tables	char	25	0
Location	Tables	char	1024	25
Name	Attributes	char	25	0
Table	Attributes	char	25	25
Type	Attributes	char	10	50
Size	Attributes	int	4	60
Offset	Attributes	int	4	64
ID	People	int	4	0
LName	People	char	25	4
FName	People	char	25	29
DOB	People	char	8	55
Name	Departments	char	20	0
ID	Departments	int	4	20

Example SELECT

```
SELECT Location
FROM Tables
WHERE Name = People
```

```
SELECT Name
FROM Attributes
WHERE Table = Departments
```

```
SELECT Offset
From Attributes
Where Table = People AND
      Name = FName
```

```
SELECT ADD(Size)
FROM Attributes
WHERE Table = Departments
```

Returns:

Location (path) of table People

List of attributes in Departments (i.e., (Name, ID))

Offset in a People record to FName field (i.e., 29)

Size of a Departments record (i.e., $20+4 = 24$)