KB00107 – How to identify Tables and Fields in Sample Master® Databases

Scenario:

You would like to know in what tables a Field is included in, and also the Data Type, whether it is a Primary Key and/or a Foreign Key, and if a Foreign Key what table holds the Primary Key.

Required Skill Set:

Basic Developer Knowledge of the ATL product. It requires knowledge of Microsoft SQL Server Management Studio (full or Express version) and basic knowledge of how to create and execute a SQL Query.

Solution:

ATL does not provide a "Data Dictionary" for Sample Master®; however, you can use the following sample code to get a list of Tables and Fields, and modify it to limit on Table name and/or Fieldname.

The Source:

This tip is provided online on the Code Project website entitled "Generate Data Dictionary from SQL Server" by Johirul Islam Tarun. Please visit the URL to read the full article and review the License. In general, you are free to use the code as you wish, but may not publish or distribute the online article in its entirety.

Using the Example Code

The following is the original code provided on the website mentioned previously:

```
-- =============================================
-- Author:JOHIR
-- Create date: 01/12/2012
-- Description: GENERATE DATA DICTIONARY FROM SQL SERVER
-- =============================================
SELECT a.name [Table],b.name [Attribute],c.name [DataType],b.isnullable [Allow
Nulls?],
     CASE WHEN d.name is null THEN 0 ELSE 1 END [PKey?],
     CASE WHEN e.parent_object_id is null THEN 0 ELSE 1 END [FKey?],
```

```
        CASE WHEN e.parent_object_id is null THEN '-' ELSE g.name  END [Ref Table],
        CASE WHEN h.value is null THEN '-' ELSE h.value END [Description]
  FROM sysobjects as a
  JOIN syscolumns as b ON a.id = b.id
  JOIN systypes as c ON b.xtype = c.xtype
  LEFT JOIN (SELECT  so.id,sc.colid,sc.name
    FROM    syscolumns sc
              JOIN sysobjects so ON so.id = sc.id
              JOIN sysindexkeys si ON so.id = si.id AND sc.colid = si.colid
          WHERE si.indid = 1) d ON a.id = d.id AND b.colid = d.colid
  LEFT JOIN sys.foreign_key_columns as e ON a.id = e.parent_object_id and b.colid
  = e.parent_column_id
  LEFT JOIN sys.objects as g ON e.referenced_object_id = g.object_id   LEFT
  JOIN sys.extended_properties as h ON a.id = h.major_id and b.colid =
  h.minor_id
  WHERE a.type = 'U' AND
        b.name <> 'ts' -- Field used exclusively by MS SQL Server ORDER
  BY [PKey?] DESC,[FKey?] DESC, a.name ASC
```

For us to use the code with Sample Master®, we must add "USE SMV9" (or SMV10 for SMv10) (without quotes) as the first line of executable code. You may change it to SMV9, SMV9Archive, or SMV9Temp (for v10 replace the 9 with a 10).

The Fields returned by the query are:

- Table: Name of the Table.
- Attribute: Name of the Field within the Table.
- Data Type: The selected type which determines the possible values that may be entered.
- Allow Nulls: Whether or not the Field must be populated or not.
- PKey?: If the Field is defined as a Primary Key within the table.
- FKey?: if the Field is defined as a Foreign Key within the table.
- Ref Table: If a Foreign Key, the name of the related table with the Primary Key.
- Description: Value entered as description for the Field in Design View (not used by ATL).

Running the query as-is with USE SMV9 will return a listing of all Field names in all tables with the exception of the 'ts' column which is exclusively used by MS SQL Server.

If you would like to return a list of all the fields for a specific Table, Orders for example, add the following to the WHERE clause:

```
AND a.name = 'Orders'
```

If you would like to return a list of all Tables where a specific Field, ProjectID for example, add the following to the WHERE clause:

```
AND b.name = 'ProjectID'
```

There are many variations you could come up to return the data as you need it. If you come up with a variation that is very useful, please consider letting us know by sending an email to Support@atlab.com, and we will add it to this article.

Applies To:

- Sample Master® v9 or higher
- Sample Master® v8.5
- Sample Master® v8

Accelerated Technology Laboratories Inc.

Founded in 1994, Accelerated Technology Laboratories, Inc., launched the first commercially available Windows-based Laboratory Information Management System (LIMS). More than two decades and several hundred installations later, Sample Master® is a market-leading solution with thousands of users around the world. ATL is recognized for our strong commitment to quality, investment in research and development, and team of professionals. We hire experts with impeccable academic credentials in the fields of chemistry, engineering, water and wastewater, microbiology, medical technology, toxicology, biotechnology, laboratory management, validation, software development, computer science, engineering, and business. Several hold MS and Ph.D. degrees. ATL professionals are highly sought-after speakers and thought leaders. We are actively involved in the scientific community. Our affiliations and partnerships allow us to deliver the most current leading-edge technology to our users. ATL also offers TITAN LIMS, enhancement products, support, and consulting services worldwide.

For more information: www.atlab.com

Accelerated Technology LABORATORIES INC.

496 Holly Grove School Rd	toll-free: 800.565.LIMS (5467)	www.atlab.com
West End, NC 27376	phone: 910.673.8165	info@atlab.com
	fax: 910.673.8166	