Information Schema

SQL standard for database metadata

- implemented in commercial and open-source databases
  - concepts and approach are proven and useful
- metadata content
  - everything you need to know to write syntactically correct queries
  - does not provide semantics or units
  - implementation in commercial products? ahem...

use as a base design; finish TAP quickly and easily

Abridged Information Schema

information_schema.schemata

(

catalog_name

schema_name

schema_owner

)

Abridged - tables

information_schema.tables

(

table_catalog

table_schema

table_name

table_type

)

semantics to say what a row is?

Abridged - columns

information_schema.columns

(

table_catalog, table_schema, table_name

column_name, ordinal_position, column_default

is_nullable, data_type

character_maximum_length, character_octet_length

numeric_precision, numeric_precision_radix, numeric_scale

datetime_precision

)

need to add: semantics, units

Abridged - join keys

information_schema.key_column_usage

(

constraint_catalog, constraint_schema, constraint_name

table_catalog, table_schema, table_name

column_name

ordinal_position

)

- some implementations add the referenced columns... tells you how to write joins directly
- some implementations have uniqueness flag

Abridged - join keys

information_schema.table_constraints

(

constraint_catalog, constraint_schema, constraint_name

table_catalog, table_schema, table_name

constraint_type

)

constraint_type can be UNIQUE, PRIMARY, FOREIGN

use with key_column_usage to know about cardinality

Abridged - join keys

information_schema.referential_constraints

(

constraint_catalog, constraint_schema, constraint_name

unique_constraint_catalog, unique_constraint_schema, unique_constraint_name

table_name

referenced_table_name

)

use with table_constraints and key_column_usage to figure out how to write joins

Abridged - UDFs

information_schema.routines

(

specific_catalog, specific_schema, specific_name

routine_catalog, routine_schema, routine_name, routine_type

data_type

character_maximum_length, character_octet_length

numeric_precision, numeric_precision_radix

numeric_scale, datetime_precision

)

semantics? units?

Abridged - UDF parameters

information_schema.parameters

(

specific_catalog, specific_schema, specific_name

ordinal_position, parameter_mode, parameter_name, is_result

data_type

character_maximum_length, character_octet_length

numeric_precision, numeric_precision_radix, numeric_scale

datetime_precision

)

semantics? units?

Summary

- define standard database tables that contain detailed metadata
- easy to create the tables and populate them
- no additional service API
- no external dependencies
- most of the design and documentation is done so we can wrap up quickly