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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 40764-2021

Geographic information - Filter encoding

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

The translation method used in this standard is equivalent to the international standard ISO 19143.2010 "Geographic Information Filtering Code".

This standard has made the following editorial changes.

---Editing errors in the original international standard have been corrected;

---In the informative Appendix B and Appendix C, the content of the model file has been verified and some format adjustments based on relevant materials;

---In order to facilitate understanding, the Chinese and English comparison table of element names in the standard has been added, see Appendix NA.

Introduction

The subset of data obtained from the spatial data set that contains certain expected information, satisfies some query conditions, and is sorted in a specific way is

One of the basic operations of geographic data processing in the field of geographic information. This standard aims to use the currently popular extensible markup language (XML) to provide

Provide a set of standard spatial data query coding rules to meet the requirements of spatial data query standards in the Internet environment. At the same time, these codes

Based on the system, the projection, selection, and sorting clauses of XML encoding can be easily verified, parsed, and converted into arbitrary, required return or

Modify the target query language of the resource in the permanent object store. For

example, an XML-encoded query composed of projection, selection, and sorting clauses can be converted

Replaced with a SQL statement "SELECTFROM WHERE ORDERBY" from a SQL-based relational database

Get data in. Similarly, the same XML encoding query expression can be easily converted to XQuery (XML query) expressions, so that

Return data from the XML document.

This standard defines a coding rule for projection, filtering and sorting clauses used in query condition expressions. "Projection clause

(projectionclause)" is used to describe a kind of code, which specifies the subset of resource characteristics that should be displayed in the query response. "filter or select

"Selection clause (selectionclause)" is used to describe a predicates code, often used in query operations to specify how to filter the source data

Set the data instance to produce a result set. Each data instance in the source data set is judged using a filter expression. Judgement of filter expression

The result is always true or false. If the data instance satisfies the expression, the judgment result of the expression is true, and the data instance is stored in the result set

middle. If the judgment result of the filter expression is false, the data instance does not belong to the result set. Therefore, the actual

The result is a set of identification codes for data or resources that satisfy the expression predicate. "Sorting clause (sortingclause)" is used to describe a kind of encoding,

Specifies how to sort the response data before display.

The XML and KVP (key-value pair) encoding of the projection, filtering, and sorting clauses described are common components and can be combined in many network services.

Used together or alone. Any service that needs the ability to query objects from a web-accessible library can be used

The XML and KVP encoding of the specified query expression. For example, the standard used for GetFeature operation in GB/T 30169

Define the derived element encoding query expression.

Geographic Information Filter Coding

1 Scope

This standard describes the system-neutral XML and KVP coding used to express the

syntax of projection, selection and sorting clauses.

It is called a query expression.

These components are modular and can be used in combination with other standards or used individually.

Example 1.GB/T 30169 uses some or all of the above components.

This standard defines an abstract component called "AbstractQueryExpression (abstract query expression)", other specifications can be based on

This subclassed specific query elements to implement query operations.

This standard also defines another abstract query named "AbstractAdhocQueryExpresison (abstract immediate query expression)"

Components. It is derived from AbstractQueryExpression, and other specifications can subclass specific query elements according to the following query patterns.

The abstract query element in the service specification can subclass a specific query element, and the implementation allows customers to specify a list of resource types and optional

Projection clause, optional selection clause and optional sorting clause to query the subset of resources that satisfy the selection clause.

This mode is called an immediate (adhoc) query mode, which is different from the stored query expression that can be called by name or identifier.

Same, because the server does not know the query until the query is submitted for processing.

This standard also describes system-neutral XML and KVP encodings that express selection clauses. XML expression is easy to verify and parse

And it is converted into a server-specific language that needs to return or modify the object instance stored in the permanent object.

Example 2.The XML-encoded filter expression can be converted to the WHERE clause in the SQL SELECT statement to get stored in the SQL relational database

The data. Similarly, an XML-encoded filter can be converted into an XPath (XML path) or XPointer (XML pointer) expression, which can be used to extract an XML document

Get data in.

This standard defines XML encoding for the following predicates.

a) Standard set of logical predicates. and (and), or (or) and not (not).