Engenharia de Dados e Conhecimento

USER DEFINED FUNCTIONS

AND

LIBRARY MODULES

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http://www.w3.org/TR/xquery-31/

XQUERY 3.1: AN XML QUERY LANGUAGE

User Defined Functions

- User-defined functions are a way to write our own functions to encapsulates behavior and allow code reuse.

- User-defined functions can be defined in the query or in a separate library.

- Guidelines to write a user defined function:

  - Use the declare function keyword;

  - The name of the function must be prefixed;

  - The data type of the parameters are mostly the same as the data types defined in XML Schema;

  - The body of the function must be surrounded by curly braces.

User Defined Functions

Syntax:

```
declare function prefix:function_name($parameter as datatype)
as returnDatatype
{
 ...function code here...
};
```

User Defined Functions

Xquery:

```
declare function local:books-by-author($aname) as element()*
{
  for $b in doc("books")//book
  where contains($b/author[1], $aname)
  order by $b/title
  return $b/title
};


<book>
{ local:books-by-author("Rowling")}
</book>
```

Result:

```
<book>
  <title lang="en">Harry Potter</title>
</book>
```

Library Modules

- In addition to the standard XQuery Functions, the database can provide additional functions, which are packaged in various modules.

- To use them, it's necessary to import the module namespace.

- User defined functions can also be stored in a specific module and then they can be reused in any query.

Library Modules

- Creation of a user module:

```
module namespace funcs = "com.funcs.my.index";

declare function funcs:books-by-author($aname) as element()*
{
  for $b in doc("books")//book
  where  contains($b/author[1], $aname)
  order by $b/title
  return $b/title
};
```

- Using the module:

```
import module namespace funcs = 'com.funcs.my.index';
<book>
{ funcs:books-by-author("Rowling")}
</book>
```