

Fall Semester 2004: New Course CMPT495/585 for Undergraduate and Graduate Computer Science Majors

Recent Developments in Databases

Instructor: Andreas Koeller
Time: Wednesdays 8:15pm-10:45pm

Topics:

- * XML as a database format. XML basics, XML Schema, the XPath query language, XSL and XSLT transformations, XML-to-relational conversion
- * The Web as a database: Querying the WWW
- * Database development for the Web with PHP and MySQL
- * Connecting the worlds of databases and programming: ODBC and JDBC
- * Overview: Spatial Databases. Handling geographic location in data sets
- * Overview: Grid Computing. The next generation of database technology

This course emphasizes current and practical solutions to standard and non-standard database problems from an application programmer's or advanced user's perspective. The course will include practical programming projects.

Recommended background: Programming experience. Knowledge of database topics a plus (relational databases, SQL). CMPT483/586 can be taken concurrently.

The screenshot shows three windows illustrating the transformation of XML data. The left window displays an XML document with a list of books. The middle window shows the resulting HTML output, which includes a table. The right window shows a different HTML representation of the same data.

```
<?xml version="1.0" ?>
<booklist>
  <book isbn="1234-123456-1234">
    <title>C Programming Language</title>
    <author>Kernighan and Ritchie</author>
    <publisher>EEE</publisher>
    <price>7.99</price>
  </book>
  <book isbn="3456-34567890-3456">
    <title>C++ Primer</title>
    <author>Lippmann</author>
    <publisher>McGraw Hill</publisher>
    <price>4.99</price>
  </book>
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    <author>Jeffrey Archer</author>
    <publisher>Harper Collins</publisher>
    <price>12.95</price>
  </book>
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    <author>Jeffrey Archer</author>
    <publisher>Harper Collins</publisher>
    <price>3.99</price>
  </book>
  <book isbn="1230-23498-2349879">
    <title>Emperor's New Mind</title>
    <author>Roger Penrose</author>
    <publisher>Oxford Publishing Company</publisher>
    <price>15.99</price>
  </book>
</booklist>
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ISBN	Title	Author	P
1234-123456-1234	C Programming Language	Kernighan and Ritchie	EEE
3456-34567890-3456	C++ Primer	Lippmann	McG
2137-598354-6597	Twelve Red Herrings	Jeffrey Archer	Harp
237864-4787834-3459	The Eleventh Commandment	Jeffrey Archer	Harp
1230-23498-2349879	Emperor's New Mind	Roger Penrose	Oxfo Publ Com

List of books
This will illustrate the transformation of XML file containing list of books to a HTML table form

C Programming Language: Kernighan and Ritchie. Price: \$7.99
C++ Primer: Lippmann. Price: \$4.99
Twelve Red Herrings: Jeffrey Archer. Price: \$12.95
The Eleventh Commandment: Jeffrey Archer. Price: \$3.99
Emperor's New Mind: Roger Penrose. Price: \$15.99

C Programming Language
Kernighan and Ritchie
EEE
7.99
ISBN: 1234-123456-1234

C++ Primer
Lippmann
McGraw Hill
4.99
ISBN: 3456-34567890-3456

Twelve Red Herrings
Jeffrey Archer
Harper Collins
12.95
ISBN: 2137-598354-65978

The Eleventh Commandment