

Take Home Exam 3

Due May 5

the color parameter and call the coloredCell template. The end result is that the author cells are displayed with one background color and the title cells with another color.

Solve all queries of problem
9.2, 9.3 on System and
Submit under 'Final'

Exercises

9.1 Consider the XML document containing bibliographic information introduced in Example 8.3.1. Write XQuery expressions to answer the following queries:

- (a) Get articles that contain the word "Temporal" in their titles. Do not distinguish between upper- and lowercase letters.
- (b) Get articles authored by "Raghu Ramakrishnan". Do not distinguish between upper- and lowercase letters.
- (c) Get the number of articles with more than three authors.
- (d) Get articles that are over 40 pages long.
- (e) Get a listing of URLs of articles for each author. Output should consist of author names followed by list of URLs, sorted by author names.
- (f) Get author names of authors who have not written a single article over 30 pages.

9.2 Consider the XML document containing information about cities and states in the United States introduced in Example 8.3.2. Write XQuery expressions to answer the following queries:

- (a) Get the name and city code of the capital city of "Georgia".
- (b) Get the name and population of the state in which the city "Miami" is located.
- (c) Get the number of "Indiana" cities in the database.
- (d) Get the names of states along with their capital city names.
- (e) Get the number of states whose names begin with the letter "M".

9.3 Consider the XML document described in Exercise 8.7 related to the mail-order database. Write XQuery expressions to answer the following queries:

- (a) Get the names of parts that cost less than 20.00.
- (b) Get the names and cities of employees who have taken orders for parts costing more than 20.00.
- (c) Get the names of customers who have ordered parts from employees living in Wichita.
- (d) Get the names of employees who have ordered parts only from employees living in Wichita.
- (e) Get the names of customers who have ordered all parts costing less than 20.00.

See next page
for remaining ~~parts~~
queries

- (f) Get the names of employees who have never made a sale to a customer living in their own zip code.
 - (g) Get order numbers of orders that took longer than two days to ship.
 - (h) Get the total price of products in order 1022.
 - (i) Get order number and total price for each order.
 - (j) Get employee numbers and total sales for each employee.
- 9.4 Consider the XML document described in Exercise 8.8 related to the movies database. Write XQuery expressions to answer the following queries:
- (a) Get the title and years of movies in the **Crime** genre.
 - (b) Get names of persons who have acted in a movie and have directed it as well.
 - (c) Get titles and years of movies in which **James Caan** has acted.
 - (d) Get the names of performers and the number of movies in which they have acted.
 - (e) Get the names of performers who have acted in at least 10 movies and have directed at least 2 movies.
 - (f) Get the name(s) of the youngest performer(s).
 - (g) Get the names of performers who have directed some actor who is older than they are.
- 9.5 Consider the bibliographic XML document of Example 8.3.1. Write XSLT programs to produce three Web pages for browsing the contents of the document. The first Web page should list the **Journal** names, each of them hyperlinked to the second Web page. The second Web page should list all the volumes for the given journal, each of them hyperlinked to the third Web page. The third Web page should list all the papers in the given volume. The papers should be separated by the different numbers within the volume. All three Web pages should be well formatted and should have appropriate headings. Java servlets may be used to invoke the XSLT programs.
- 9.6 Consider the geography XML document of Example 8.3.2. Write XSLT programs to display the list of states and their capital cities in an HTML page in tabular format. The state name should be hyperlinked to a detail Web page for that state displaying all information for the state. Java servlets may be used to invoke the XSLT programs.
- 9.7 Consider the XML document described in Exercise 8.7 related to the mail-order database. Write an XSLT program that takes as input an order number and produces a well-formatted invoice as a Web page for the given order. The invoice should include customer details, employee information, as well as order details for the order. Java servlets may be used to invoke the XSLT program.