

CMPT-354 D1 Fall 2008
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Assignment 9

Total marks: 150 (15 % of the assignments)
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Due date: November 28, 2008

Introduction

This is a paper and pencil assignment on XML and XQuery. Please, submit a hard copy of your solution to the assignment drop box.

Assignment 9.1

Consider the following XML schema.

```
<?xml version="1.0" encoding="ISO-8859-1" ?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:simpleType name="stringtype">
    <xs:restriction base="xs:string"/>
  </xs:simpleType>
  <xs:simpleType name="inttype">
    <xs:restriction base="xs:positiveInteger"/>
  </xs:simpleType>
  <xs:simpleType name="dectype">
    <xs:restriction base="xs:decimal"/>
  </xs:simpleType>
  <xs:simpleType name="orderidtype">
    <xs:restriction base="xs:string">
      <xs:pattern value="[0-9]{6}"/>
    </xs:restriction>
  </xs:simpleType>
  <xs:complexType name="shiptotype">
    <xs:sequence>
      <xs:element name="name" type="stringtype"/>
      <xs:element name="address" type="stringtype"/>
      <xs:element name="city" type="stringtype"/>
      <xs:element name="country" type="stringtype"/>
    </xs:sequence>
  </xs:complexType>
  <xs:complexType name="itemtype">
    <xs:sequence>
      <xs:element name="title" type="stringtype"/>
      <xs:element name="note" type="stringtype" minOccurs="0"/>
      <xs:element name="quantity" type="inttype"/>
      <xs:element name="price" type="dectype"/>
    </xs:sequence>
  </xs:complexType>
</xs:schema>
```

```

<xs:complexType name="shipordertype">
  <xs:sequence>
    <xs:element name="orderperson" type="stringtype"/>
    <xs:element name="shipto" type="shiptotype"/>
    <xs:element name="item" maxOccurs="unbounded"
      type="itemtype"/>
  </xs:sequence>
  <xs:attribute name="orderid" type="orderidtype" use="required"/>
</xs:complexType>
<xs:element name="shiporderDB">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="shiporder" type="shipordertype"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
</xs:schema>

```

Create a valid XML document with a "shiporderDB" root element and two "shiporder" elements. (50 marks)

Assignment 9.2

Consider an XML document "ShiporderDB.xml" that conforms to the above XML schema. Formulate the following queries on this XML document in XQuery. Where applicable, eliminate duplicate results. (100 marks)

- a) Find the items ordered in "Vancouver" with maximum price among these items, as a sequence of item elements. (25 marks)
- b) For all shiporders that contain an item that has "computer" in its title, produce a result element consisting of the orderid and the number of items. (25 marks)
- c) For all orderpersons who have shipped an order to the US, find the orderperson and the sequence of all items shipped. Include all information belonging to the same orderperson into one result element. (25 marks)
- d) Find all shiporders that contain an item that both has "Data" in the title and has a price of > \$50. (25 marks)