

**DATABASE TECHNOLOGY  
WEEK 10 ASSIGNMENT**

**1) Create a DTD and XML Document For music collection which need to have entries for CD collection. At least one CD collection required**

```
<?xml version = "1.0" standalone="yes"?>
<!DOCTYPE document [
<!ELEMENT document (employee)*>
<!ELEMENT employee (name, hiredate, projects)>
<!ELEMENT name (lastname, firstname)>
<!ELEMENT lastname (#PCDATA)>
<!ELEMENT firstname (#PCDATA)>
<!ELEMENT hiredate (#PCDATA)>
<!ELEMENT projects (project)*>
<!ELEMENT project (product,id,price)>
<!ELEMENT product (#PCDATA)>
<!ELEMENT id (#PCDATA)>
<!ELEMENT price (#PCDATA)>
] >
<document>
  <employee>
    <name>
      <lastname>Kelly</lastname>
      <firstname>Grace</firstname>
    </name>
    <hiredate>October 15, 2005</hiredate>
    <projects>
      <project>
        <product>Printer</product>
        <id>111</id>
        <price>$111.00</price>
      </project>
      <project>
        <product>Laptop</product>
        <id>222</id>
        <price>$989.00</price>
      </project>
    </projects>
  </employee>
  <employee>
    <name>
      <lastname>Grant</lastname>
      <firstname>Cary</firstname>
    </name>
    <hiredate>October 20, 2005</hiredate>
    <projects>
      <project>
        <product>Desktop</product>
        <id>333</id>
```

```

        <price>$2995.00</price>
    </project>
    <project>
        <product>Scanner</product>
        <id>444</id>
        <price>$200.00</price>
    </project>
</projects>
</employee>
<employee>
    <name>
        <lastname>Gable</lastname>
        <firstname>Clark</firstname>
    </name>
    <hiredate>October 25, 2005</hiredate>
    <projects>
        <project>
            <product>Keyboard</product>
            <id>555</id>
            <price>$129.00</price>
        </project>
        <project>
            <product>Mouse</product>
            <id>666</id>
            <price>$25.00</price>
        </project>
    </projects>
</employee>
</document>

```

## 2. Create a DTD and XML Document For list recipe author recipe name meal ingredients It Contains collection of Different item , but at least one item. Directions

```

<?xml version="1.0"?>
<!DOCTYPE list SYSTEM "simple_recipe.dtd">
<list>
    <recipe>
        <author>Carol Schmidt</author>
        <recipe_name>Chocolate Chip Bars</recipe_name>
        <meal>Dinner</meal>
        <ingredients>
            <item>2/3 C butter</item>    <item>2 C brown sugar</item>
            <item>1 tsp vanilla</item>    <item>1 3/4 C unsifted all-purpose flour</item>
            <item>1 1/2 tsp baking powder</item>
            <item>1/2 tsp salt</item>    <item>3 eggs</item>
            <item>1/2 C chopped nuts</item>
            <item>2 cups (12-oz pkg.) semi-sweet choc. chips</item>
        </ingredients>
        <directions>

```

Preheat oven to 350 degrees.

Melt butter; combine with brown sugar and vanilla in large mixing bowl.

Set aside to cool. Combine flour, baking powder, and salt; set aside.

Add eggs to cooled sugar mixture; beat well.  
 Stir in reserved dry ingredients, nuts, and chips.  
 Spread in greased 13-by-9-inch pan.  
 Bake for 25 to 30 minutes until golden brown; cool. Cut into squares.

```

    </directions>
  </recipe>
</list>

```

### 3. Create a DTD and XML Document For a page which must have title and content and optional comment.

```

<?xml version="1.0" ">
<!-- DTD to write simple stories
    Made by Daniel K. Schneider / TECFA / University of Geneva
    VERSION 1.0
    30/10/2003 -->
<!ELEMENT STORY (title, context, problem, goal, THREADS, moral, INFOS)>
<!ATTLIST STORY xmlns:xlink CDATA #FIXED "http://www.w3.org/1999/xlink">
<!ELEMENT THREADS (EPISODE+)>
<!ELEMENT EPISODE (subgoal, ATTEMPT+, result) >
<!ELEMENT ATTEMPT (action | EPISODE) >
<!ELEMENT INFOS ( ( date | author | a ) * ) >
<!ELEMENT title (#PCDATA) >
<!ELEMENT context (#PCDATA) >
<!ELEMENT problem (#PCDATA) >
<!ELEMENT goal (#PCDATA) >
<!ELEMENT subgoal (#PCDATA) >
<!ELEMENT result (#PCDATA) >
<!ELEMENT moral (#PCDATA) >
<!ELEMENT action (#PCDATA) >
<!ELEMENT date (#PCDATA) >
<!ELEMENT author (#PCDATA) >
<!ELEMENT a (#PCDATA)>
<!ATTLIST a
    xlink:href CDATA #REQUIRED
    xlink:type CDATA #FIXED "simple">

```

### 4. Discuss what is XML. What are the various syntax rule involved in xml declaration ? Create the xml document which describe the book information's

XML declaration in detail. XML declaration contains details that prepare an XML processor to parse the XML document. It is optional, but when used, it must appear in the first line of the XML document.

#### Syntax

Following syntax shows XML declaration –

```

<?xml
  version = "version_number"
  encoding = "encoding_declaration"
  standalone = "standalone_status"
?>

```

#### Rules

An XML declaration should abide with the following rules –

- If the XML declaration is present in the XML, it must be placed as the first line in the XML document.
- If the XML declaration is included, it must contain version number attribute.
- The Parameter names and values are case-sensitive.
- The names are always in lower case.
- The order of placing the parameters is important. The correct order is: version, encoding and standalone.
- Either single or double quotes may be used.
- The XML declaration has no closing tag i.e. `</?xml>`

### Program :

```
<BOOK>
<CHAPTER>INTRODUCTION </CHAPTER>
</BOOK>
```

THE DTD declaration of book element is

```
<!ELEMENT BOOK(CHAPTER)>
```

- If BOOK contains more than one child elements

```
<BOOK>
    <CHAPTER> TWO</CHAPTER>
    <PRICE>20.99</PRICE>
```

```
</BOOK>
```

```
<! ELEMENT BOOK(CHAPTER PRICE)>
```

The order of the chapter and price must be followed as written in the DTD definition.

For defining multiple occurrences of child elements

– (CHAPTER)+ : indicates one or more occurrences of chapter element. `<!ELEMENT BOOK(CHAPTER)+>`

– (CHAPTER)\* : indicates zero or more occurrences of chapter element. `<!ELEMENT BOOK(CHAPTER)*>`

– (CHAPTER)? : optional i.e zero or one occurrences of chapter. `<!ELEMENT BOOK(CHAPTER)?>`

– CHAPTER | APPENDIX : zero or more repeats of either of the two can occur.

```
<!ELEMENT BOOK(CHAPTER|APPENDIX)>
```