**Explanation of How to RUN LAB6 as well check if E-R diagram is correct**

To run the lab please open the respective three files that are library,library.xslt,library.xsd. The first file is the complete xml file of the entire database, the second file with the xslt contains the 5 queries that are supposed to be generated one by one. Next is the xsd schema file to check for primary keys and foreign keys. Using the utilities-online website take the xml document and paste it on the xml editor then beside take the xsd schema paste the document as well, check if both xml is well formed and check if xsd is valid, if they are valid then click the button which validates both XML and XSD schema the resulting output will be green if successful. Lastly using the w3schools website take the xml code of the complete database paste it on the editor beside it paste the xslt query where you can check each query individually to see the outputted result. The data generated from XSLT is similar to the results in lab5 and it also matches the E-R diagram structure. There was no changes that needed to be made for the E-R diagram.

**XSLT SEMI-STRUCTURED DATA OF THE QUERIES**

1. **What are the books with amazon rating greater than 4.5**?

<?xml version="1.0" encoding="UTF-8"?> <xsl:stylesheet version="1.0" xmlns:xsl="http://www.w3.org/1999/XSL/Transform">

<xsl:template match="/">

<html>

<body>

<h2>List of books having amazon rating greater than 4.5</h2> <table border="1">

<tr bgcolor="#9acd32"> <th>Book name</th> <th>Amazon rating</th> </tr>

<xsl:for-each select="library/book">

<xsl:if test="AmazonRating > 4.5"><tr>

<td><xsl:value-of select="BookName"/></td>

<td><xsl:value-of select="AmazonRating"/></td>

</tr></xsl:if>

</xsl:for-each>

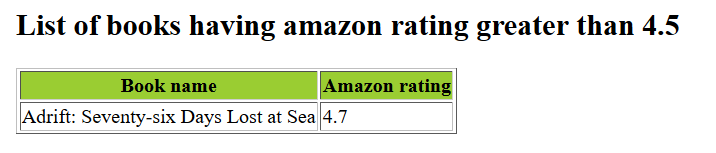
</table>

</body>

</html>

</xsl:template>

</xsl:stylesheet>



1. **What are the books which are fiction and nonfiction**?

<?xml version="1.0" encoding="UTF-8"?> <xsl:stylesheet version="1.0" xmlns:xsl="http://www.w3.org/1999/XSL/Transform">

<xsl:template match="/">

<html>

<body>

<h2>fiction books</h2> <table border="1">

<tr bgcolor="#9acd32"> <th>Book name</th> </tr>

<xsl:for-each select="library/book"> <xsl:if test="Genre='Fiction'"> <tr>

<td><xsl:value-of select="BookName"/></td> </tr></xsl:if>

</xsl:for-each> </table> <h2>Non-fiction books</h2> <table border="1">

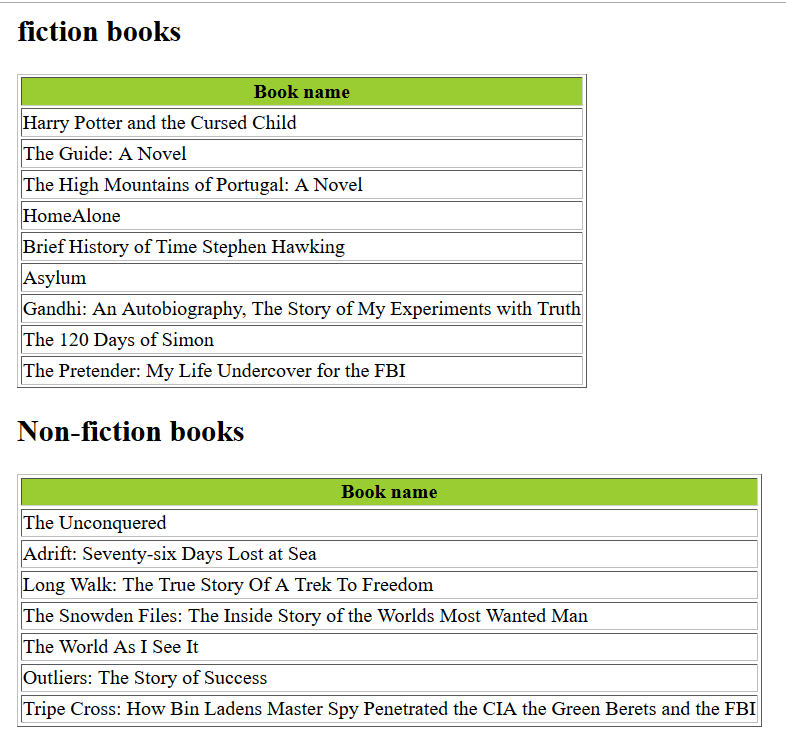
<tr bgcolor="#9acd32"> <th>Book name</th> </tr>

<xsl:for-each select="library/book"> <xsl:if test="Genre='NonFiction'"> <tr>

<td><xsl:value-of select="BookName"/></td> </tr></xsl:if>

</xsl:for-each> </table> </body> </html> </xsl:template>

</xsl:stylesheet>



1. **What is the highest price of the book?**

<?xml version="1.0" encoding="UTF-8"?> <xsl:stylesheet version="1.0" xmlns:xsl="http://www.w3.org/1999/XSL/Transform">

<xsl:template match="/">

<html>

<body>

<h2>Book With the Highest Price</h2>

<xsl:for-each select="//Price">

<xsl:sort data-type="number" order="descending"/>

<xsl:if test="position()=1">Highest Price: <xsl:value-of select="."/></xsl:if>

</xsl:for-each >

<xsl:for-each select="library/book">

<xsl:if test="price=The\_highest">

<xsl:value-of select="BookName"/>

</xsl:if>

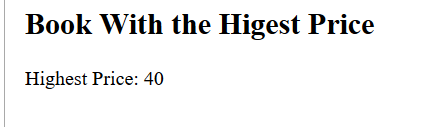
</xsl:for-each>

</body>

</html>

</xsl:template>

</xsl:stylesheet>



The query of the books generated with the highest price which gives 40 is actually correct. The format is just not in table in green but the results are actually correct.

1. **What are number of warehouses at any particular location?**

<?xml version="1.0" encoding="UTF-8"?>

<xsl:stylesheet version="1.0" xmlns:xsl="http://www.w3.org/1999/XSL/Transform"> <xsl:template match="/">

<html>

<body>

<h2>Number of Warehouses in London</h2> <table border="1">

<tr bgcolor="#9acd32"> <th>Warehouses</th> </tr>

<tr>

<td><xsl:value-of select="count(items/warehouse[Location='London'])"/></td>

</tr>

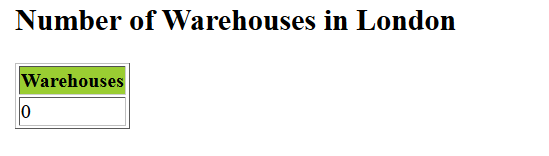
</table>

</body>

</html>

</xsl:template>

</xsl:stylesheet>



1. **What is the book with a specific ISBN number**?

<?xml version="1.0" encoding="UTF-8"?>

<xsl:stylesheet version="1.0" xmlns:xsl="http://www.w3.org/1999/XSL/Transform"> <xsl:template match="/">

<html>

<body>

<h2>List of books with specific ISBN Number</h2> <table border="1">

<tr bgcolor="#9acd32"> <th>Book name</th> <th>ISBN</th>

</tr>

<xsl:for-each select="library/book">

<xsl:if test="ISBN = 1338099132"> <tr>

<td><xsl:value-of select="BookName"/></td>

<td><xsl:value-of select="ISBN"/></td>

</tr></xsl:if>

</xsl:for-each>

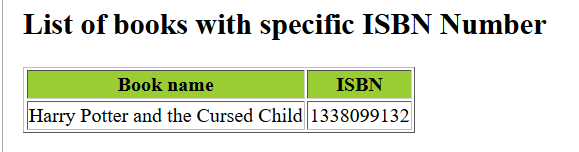
</table>

</body>

</html>

</xsl:template>

</xsl:stylesheet>



**Note:** The (+) is the indication of all the attributes being considered.

A close up of a map

Description generated with very high confidence

**Figure 1: The image indicates the Entity Relation (E-R) Diagram Design.**

**XML CODE OF THE COMPLETE DATABASE**

<?xml version="1.0" encoding="UTF-8" ?>

<?xml-stylesheet type="text/xsl" href="book.xsl"?>

<!DOCTYPE items>

<library>

<Author>

<AuthorId>1</AuthorId>

<AuthorName>ramesh</AuthorName>

<Website>www.ramesbooks.com</Website>

<PhoneNo>6476486980</PhoneNo>

</Author>

<Author>

<AuthorId>2</AuthorId>

<AuthorName>james</AuthorName>

<Website>www.jamesstories.com</Website>

<PhoneNo>4476456980</PhoneNo>

</Author>

<Author>

<AuthorId>3</AuthorId>

<AuthorName>mathew</AuthorName>

<Website>www.mathewstories.com</Website>

<PhoneNo>947645698</PhoneNo>

</Author>

<Author>

<AuthorId>4</AuthorId>

<AuthorName>alex</AuthorName>

<Website>www.alextories.com</Website>

<PhoneNo>847645698</PhoneNo>

</Author>

<Author>

<AuthorId>5</AuthorId>

<AuthorName>priya</AuthorName>

<Website>www.priyafables.com</Website>

<PhoneNo>623345898</PhoneNo>

</Author>

<Author>

<AuthorId>6</AuthorId>

<AuthorName>omar</AuthorName>

<Website>www.omarfables.com</Website>

<PhoneNo>619345895</PhoneNo>

</Author>

<Author>

<AuthorId>7</AuthorId>

<AuthorName>jonathan</AuthorName>

<Website>www.jonathanfables.com</Website>

<PhoneNo>619845895</PhoneNo>

</Author>

<Author>

<AuthorId>8</AuthorId>

<AuthorName>lisa</AuthorName>

<Website>www.lisashortstories.com</Website>

<PhoneNo>646845295</PhoneNo>

</Author>

<Author>

<AuthorId>9</AuthorId>

<AuthorName>lavanya</AuthorName>

<Website>www.lovestories.com</Website>

<PhoneNo>646945293</PhoneNo>

</Author>

<Author>

<AuthorId>10</AuthorId>

<AuthorName>geet</AuthorName>

<Website>www.geetstories.com</Website>

<PhoneNo>846943293</PhoneNo>

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<name>Author</name>

<seq>10</seq>

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<CustomerName>james</CustomerName>

<Address>6649 N Blue Gum St,London</Address>

<PhoneNo>504-621-8927</PhoneNo>

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<CustomerName>Art</CustomerName>

<Address>8 W Cerritos Ave #54,Paris</Address>

<PhoneNo>907-385-4412</PhoneNo>

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<Address>3 Mcauley Dr,NewYork</Address>

<PhoneNo>419-503-2484</PhoneNo>

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<Address>7 Eads St,LosAngeles</Address>

<PhoneNo>773-573-6914</PhoneNo>

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<Address>7 W Jackson Blvd,NewJersey</Address>

<PhoneNo>408-752-3500</PhoneNo>

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<CustomerName>Kris</CustomerName>

<Address>228 Runamuck Pl #2808,Toronto</Address>

<PhoneNo>410-655-8723</PhoneNo>

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<CustomerName>Minna</CustomerName>

<Address>2371 Jerrold Ave,London</Address>

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<Address>37275 St Rt 17m M,Paris</Address>

<PhoneNo>631-677-3675</PhoneNo>

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<Address>25 E 75th St #69,NewYork</Address>

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<AmazonRating>4</AmazonRating>

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<BookName>Tripe Cross: How Bin Ladens Master Spy Penetrated the CIA the Green Berets and the FBI</BookName>

<Price>9</Price>

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<PublicationDate>2009-06-16</PublicationDate>

<AmazonRating>4.4</AmazonRating>

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**XSD SCHEMA**

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<xs:element name="libraryData">

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<xs:element name="Author" maxOccurs="unbounded" minOccurs="0">

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<xs:element type="xs:string" name="AuthorName"/>

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<xs:element type="xs:string" name="CustomerName"/>

<xs:element type="xs:string" name="Address"/>

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</xs:sequence>

</xs:complexType>

</xs:element>

<xs:element name="Warehouse" maxOccurs="unbounded" minOccurs="0">

<xs:complexType>

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<xs:element type="xs:integer" name="WarehouseId"/>

<xs:element type="xs:string" name="Location"/>

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</xs:sequence>

</xs:complexType>

</xs:element>

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</xs:complexType>

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<xs:element type="xs:string" name="BookName"/>

<xs:element type="xs:integer" name="Price"/>

<xs:element type="xs:integer" name="ISBN"/>

<xs:element type="xs:string" name="Language"/>

<xs:element type="xs:int" name="PublicationDate"/>

<xs:element type="xs:int" name="AmazonRating"/>

<xs:element type="xs:string" name="Genre"/>

</xs:sequence>

</xs:complexType>

</xs:element>

</xs:sequence>

</xs:complexType>

</xs:element>

</xs:schema>

**Table Descriptions**

1. **Publisher:** The publisher ID is the primary key of the Publisher table. The publisher table shares one to many relationships with the Book Table. Every Book table will have atleast one to relationship with a publisher entity set. The book will have total participation relationship with the publisher. The primary key of the publisher table will be stored as foreign key in the book table.
2. **Customer:** The customer ID will be the primary key of the customer table. The customer table shares many to many relationships with the book table
3. **Warehouse:** The Warehouse ID is the primary of the Warehouse. The Warehouse table shares one to many relationships with the Book Table. Every entity of the book entity set will have at least one relationship with the Warehouse entity. The book will have total participation with the Warehouse. The primary key of the Warehouse table will be stored as foreign key in the book table.
4. **Author:** Author ID will be the primary key of author table. The author table will share many to many relationships with the book table.
5. **FedEx:** The FedEx ID is the primary key of the FedEx Table. The FedEx shares one to many relationships with the Book Table. The primary key of the FedEx Table is stored as foreign key in the Book Table.
6. **Book:** The Book ID is the primary key of the Book Table. The Book Table shares three foreign keys in its table. These foreign keys are the primary keys of the Warehouse, author and FedEx Table.
7. **Customer Book:** The Customer and Book is having a many to many relationships. The junction table between customer and book is used. This table uses two foreign keys. These keys are primary keys of customer and book respectively. The constraint in the table ensures that no two relationships are repeated again.
8. **Book Author:** The book and author share many to many relationships. This results in use of junction table between the two tables. The primary key of book and the author becomes the two foreign keys used in this table. Also, the constraint ensures that no two relationships are repeated twice.

The Book and the Author share many to many relationships. This results in the use of the junction table between the two tables. The primary key of the book and the author becomes the two foreign keys used in this Table. The constraint ensures that no two relationships are repeated consecutively.