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**?

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

List of books having amazon rating greater than 4.5

Book name	Amazon rating
Adrift: Seventy-six Days Lost at Sea	4.7

2) **What are the books which are fiction and nonfiction**?

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<td><xsl:value-of select="BookName"/></td> </tr></xsl:if>
</xsl:for-each> </table> </body> </html> </xsl:template>
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fiction books

Book name
Harry Potter and the Cursed Child
The Guide: A Novel
The High Mountains of Portugal: A Novel
HomeAlone
Brief History of Time Stephen Hawking
Asylum
Gandhi: An Autobiography, The Story of My Experiments with Truth
The 120 Days of Simon
The Pretender: My Life Undercover for the FBI

Non-fiction books

Book name
The Unconquered
Adrift: Seventy-six Days Lost at Sea
Long Walk: The True Story Of A Trek To Freedom
The Snowden Files: The Inside Story of the Worlds Most Wanted Man
The World As I See It
Outliers: The Story of Success
Tripe Cross: How Bin Ladens Master Spy Penetrated the CIA the Green Berets and the FBI

3) **What is the highest price of the book?**

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<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>
```

Book With the Higest Price

Highest Price: 40

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.

4) **What are number of warehouses at any particular location?**

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</tr>
</table>
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</html>
</xsl:template>
</xsl:stylesheet>
```

Number of Warehouses in London

Warehouses
0

5) **What is the book with a specific ISBN number?**

```
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<xsl:stylesheet version="1.0" xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
<xsl:template match="/">
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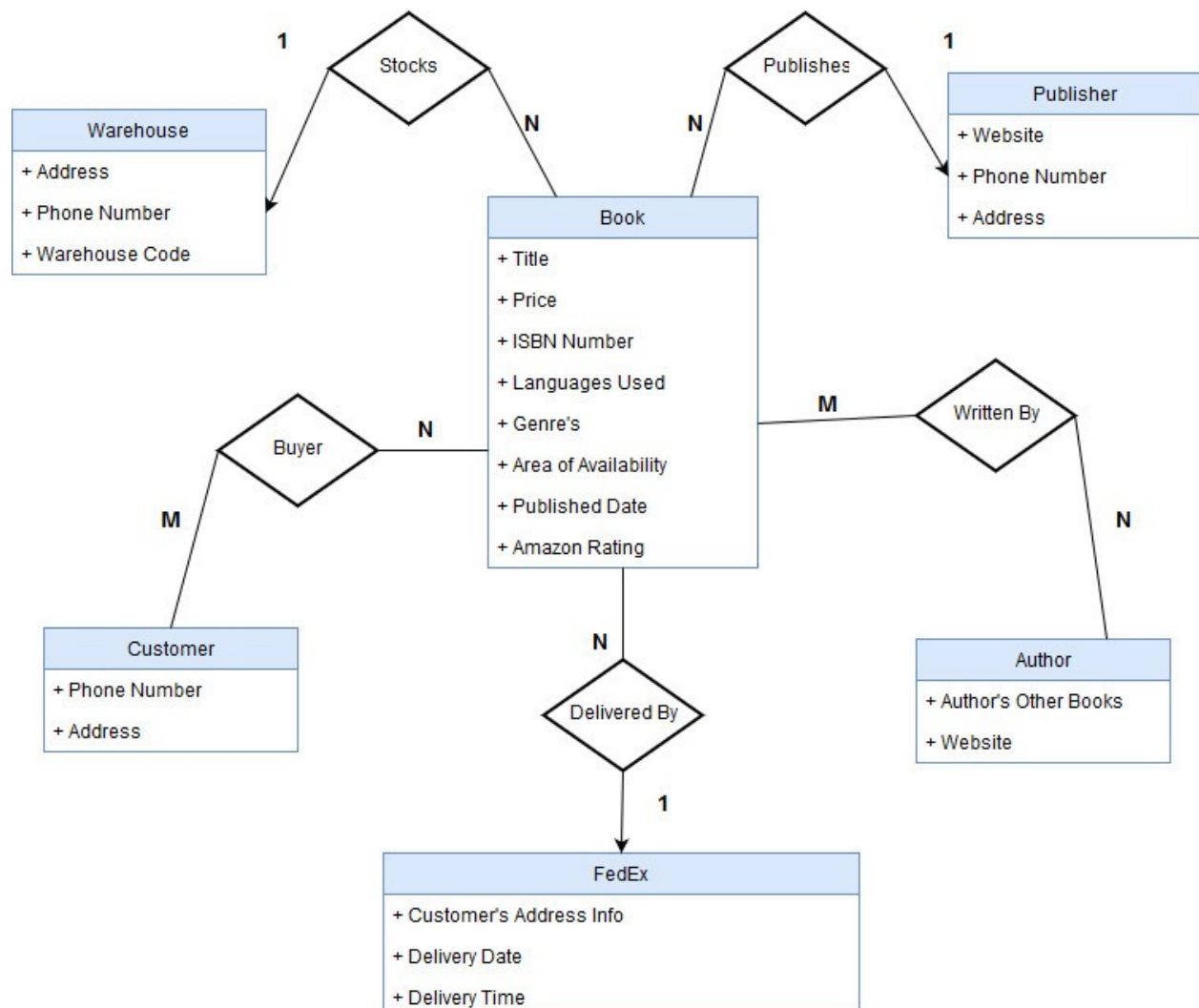
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List of books with specific ISBN Number

Book name	ISBN
Harry Potter and the Cursed Child	1338099132

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

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

XML CODE OF THE COMPLETE DATABASE

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XSD SCHEMA

```
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  <xs:element name="libraryData">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="Author" maxOccurs="unbounded" minOccurs="0">
          <xs:complexType>
            <xs:sequence>
              <xs:element type="xs:integer" name="AuthorId"/>
```

```
      <xs:element type="xs:string" name="AuthorName"/>
      <xs:element type="xs:string" name="Website"/>
      <xs:element type="xs:int" name="PhoneNo"/>
     </xs:sequence>
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  </xs:element>
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   <xs:complexType>
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  </xs:element>
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     <xs:element type="xs:integer" name="BookId"/>
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   </xs:complexType>
  </xs:element>
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     <xs:element type="xs:integer" name="BookId"/>
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     <xs:element type="xs:integer" name="PhoneNo"/>
    </xs:sequence>
   </xs:complexType>
  </xs:element>
  <xs:element name="Warehouse" maxOccurs="unbounded" minOccurs="0">
   <xs:complexType>
    <xs:sequence>
```

```xml
        <xs:element type="xs:integer" name="WarehouseId"/>
        <xs:element type="xs:string" name="Location"/>
        <xs:element type="xs:integer" name="PhoneNo"/>
      </xs:sequence>
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  </xs:element>
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    <xs:sequence>
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     <xs:element type="xs:integer" name="PhoneNo"/>
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    </xs:sequence>
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     <xs:element type="xs:string" name="BookName"/>
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   </xs:complexType>
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    </xs:sequence>
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</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.