XML

books.xml

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

<library>
<book>
<title>The Great Gatsby</title>
<author>F. Scott Fitzgerald</author>
<year>1925</year>
<genre>Fiction</genre>
</book>
<book>
<title>To Kill a Mockingbird</title>
<author>Harper Lee</author>
<year>1960</year>
<genre>Fiction</genre>
</book>
<book>
<title>1984</title>
<author>George Orwell</author>
<year>1949</year>
<genre>Dystopian</genre>
</book>
</library>
```

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

<library>
<book>
<title>The Great Gatsby</title>
<author>F. Scott Fitzgerald</author>
<year>1925</year>
<genre>Fiction</genre>
</book>
<book>
<title>To Kill a Mockingbird</title>
<author>Harper Lee</author>
<year>1960</year>
<genre>Fiction</genre>
</book>
<book>
<title>1984</title>
<author>George Orwell</author>
<year>1949</year>
<genre>Dystopian</genre>
</book>
</library>
```

XmlParser.java

```java
package xml;

import org.w3c.dom.*;

import javax.xml.parsers.*;

public class XmlParser {

    public static void main(String[] args) {

try {

// Create a new DocumentBuilderFactory and DocumentBuilder

DocumentBuilderFactory factory = DocumentBuilderFactory.newInstance();

DocumentBuilder builder = factory.newDocumentBuilder();


// Parse the XML file

Document document = builder.parse("D:\\java exercises\\XML\\src\\xml\\books.xml");


// Normalize the document

document.getDocumentElement().normalize();


// Get the root element (library)

 NodeList nodeList = document.getElementsByTagName("book");
```

```java
 // Loop through each book in the XML document
for (int i = 0; i < nodeList.getLength(); i++) {
Node node = nodeList.item(i);

if (node.getNodeType() == Node.ELEMENT_NODE) {
Element element = (Element) node;

// Get and print the details of each book
String title = element.getElementsByTagName("title").item(0).getTextContent();
String author = element.getElementsByTagName("author").item(0).getTextContent();
String year = element.getElementsByTagName("year").item(0).getTextContent();
String genre = element.getElementsByTagName("genre").item(0).getTextContent();

System.out.println("Title: " + title);
System.out.println("Author: " + author);
System.out.println("Year: " + year);
System.out.println("Genre: " + genre);
System.out.println("-----------");
}
}

} catch (Exception e) {
e.printStackTrace();
}
}
}
```

Source | History

```java
package xml;
import org.w3c.dom.*;
import javax.xml.parsers.*;
public class XmlParser {
    public static void main(String[] args) {
    try {
    // Create a new DocumentBuilderFactory and DocumentBuilder
    DocumentBuilderFactory factory = DocumentBuilderFactory.newInstance();
    DocumentBuilder builder = factory.newDocumentBuilder();

    // Parse the XML file
    Document document = builder.parse(uri:"D:\\java exercises\\XML\\src\\xml\\books.xml");

    // Normalize the document
    document.getDocumentElement().normalize();

    // Get the root element (library)
     NodeList nodeList = document.getElementsByTagName(tagname:"book");

     // Loop through each book in the XML document
    for (int i = 0; i < nodeList.getLength(); i++) {
    Node node = nodeList.item(index: i);

    if (node.getNodeType() == Node.ELEMENT_NODE) {
    Element element = (Element) node;

    // Get and print the details of each book
    String title = element.getElementsByTagName(name:"title").item(index: 0).getTextContent();
    String author = element.getElementsByTagName(name:"author").item(index: 0).getTextContent();
    String year = element.getElementsByTagName(name:"year").item(index: 0).getTextContent();
    String genre = element.getElementsByTagName(name:"genre").item(index: 0).getTextContent();

    System.out.println("Title: " + title);
    System.out.println("Author: " + author);
    System.out.println("Year: " + year);
    System.out.println("Genre: " + genre);
    System.out.println(x: "-----------");
    }
    }

    } catch (Exception e) {
    e.printStackTrace();
    }
    }
}
```

Output:

Output - XML (run)

```
run:
Title: The Great Gatsby
Author: F. Scott Fitzgerald
Year: 1925
Genre: Fiction
-----------
Title: To Kill a Mockingbird
Author: Harper Lee
Year: 1960
Genre: Fiction
-----------
Title: 1984
Author: George Orwell
Year: 1949
Genre: Dystopian
-----------
BUILD SUCCESSFUL (total time: 0 seconds)
```