

XML

Lab sheet 03 (xml)

Create an XML Document:

```
<?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>

<!--
```

Create a Java Class for XML Parsing:

```
package javaproject1;
```

```
import org.w3c.dom.*;
import javax.xml.parsers.*;

/**
 *
 * @author student
 */
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("C:\\Users\\student\\Downloads\\Amandi\\javaproject1\\src\\javaproject1\\books.xml");

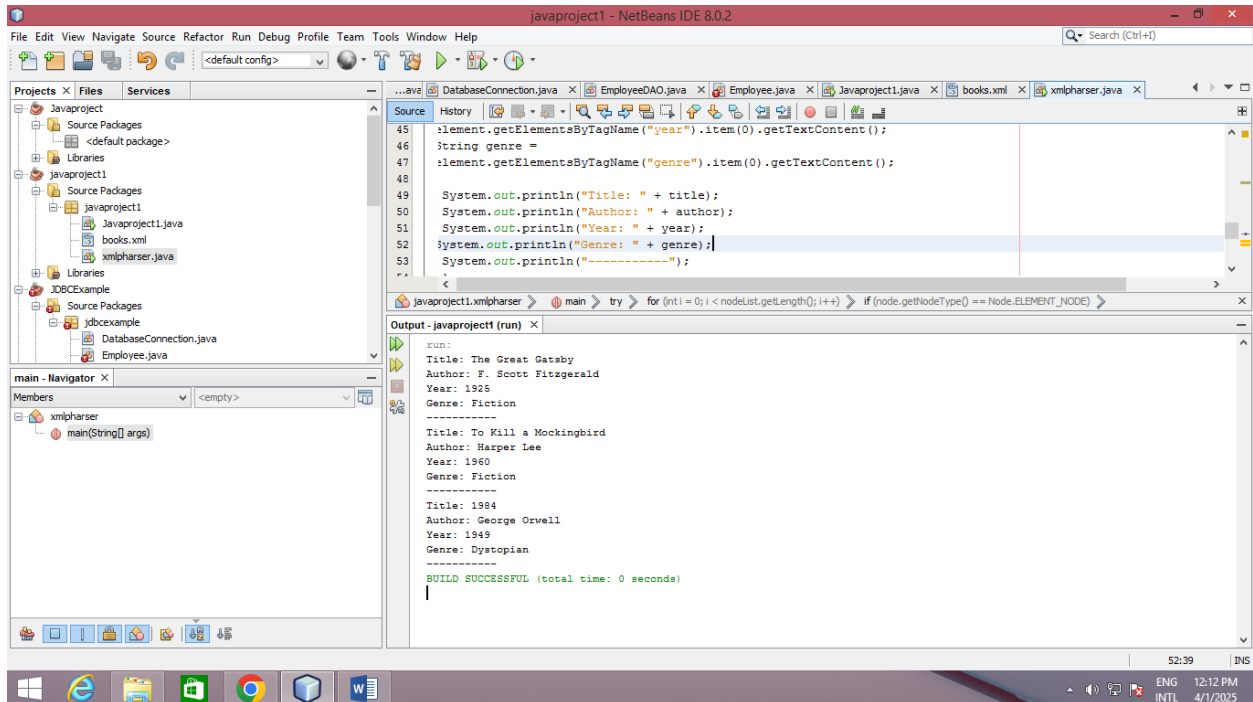
        // Normalize the document
        document.getDocumentElement().normalize();

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

        // 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();  
}  
}
```

Output



Modifying XML Data

```
package javaproject1;
```

```
import java.io.File;
```

```
import org.w3c.dom.*;
```

```
import javax.xml.parsers.*;
```

```
import javax.xml.transform.Transformer;
```

```
import javax.xml.transform.TransformerFactory;
```

```
import javax.xml.transform.dom.DOMSource;
```

```
import javax.xml.transform.stream.StreamResult;
```

```

/**
 *
 * @author student
 */
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("C:\\Users\\student\\Downloads\\Amandi\\javaproject1\\src\\javaproject1\\books.xml");

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

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

            // 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("-----");
}
}

// Modify the year of the first book

Element firstBook = (Element) nodeList.item(0);
firstBook.getElementsByTagName("year").item(0).setTextContent("2023");


// Save the modified document

TransformerFactory transformerFactory =
TransformerFactory.newInstance();

Transformer transformer = transformerFactory.newTransformer();

DOMSource source = new DOMSource(document);
```

```

StreamResult result = new StreamResult(new
File("C:\\Users\\student\\Downloads\\Amandi\\javaproject1\\src\\javaproject1\\updated_books.xml"))
;

transformer.transform(source, result);

```

```

} catch (Exception e) {

e.printStackTrace();

}

}

}

```

output

