**Assignment Title: Parsing XML in Groovy**

Objective: The objective of this assignment is to provide students with hands-on experience in parsing XML using Groovy. Students will learn how to use Groovy's built-in XML parsing capabilities to extract information from XML documents.

Instructions:

1. Start by explaining what XML is and why it is used in web development.
2. Introduce Groovy and explain why it is a good language for parsing XML.
3. Provide a sample XML document that contains various elements, attributes, and namespaces.
4. Ask students to write a Groovy script that reads the XML document and extracts specific information, such as element values and attributes.
5. Provide a set of specific requirements for the script, such as the ability to handle nested elements and namespaces.
6. Encourage students to test their scripts with different XML documents to ensure that they are flexible and can handle various scenarios.
7. Ask students to document their code and explain how it works.
8. Provide a set of sample XML documents and ask students to parse them using their Groovy scripts.
9. Finally, ask students to provide a reflection on what they learned and how they can apply their new knowledge in real-world projects.

Sample XML Document:

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

<catalog xmlns="http://www.example.com/catalog"

xmlns:books="http://www.example.com/catalog/books"

xmlns:music="http://www.example.com/catalog/music">

<books:book id="bk001">

<books:author>Writer</books:author>

<books:title>The First Book</books:title>

<books:genre>Fiction</books:genre>

<books:price>44.95</books:price>

<books:publish\_date>2000-10-01</books:publish\_date>

</books:book>

<books:book id="bk002">

<books:author>Writer2</books:author>

<books:title>The Second Book</books:title>

<books:genre>Non-Fiction</books:genre>

<books:price>29.99</books:price>

<books:publish\_date>2001-10-01</books:publish\_date>

</books:book>

<music:cd id="cd001">

<music:title>Empire Burlesque</music:title>

<music:artist>Bob Dylan</music:artist>

<music:country>USA</music:country>

<music:company>Columbia</music:company>

<music:price>10.90</music:price>

<music:year>1985</music:year>

</music:cd>

<music:cd id="cd002">

<music:title>Hide your heart</music:title>

<music:artist>Bonnie Tyler</music:artist>

<music:country>UK</music:country>

<music:company>CBS Records</music:company>

<music:price>9.90</music:price>

<music:year>1988</music:year>

</music:cd>

</catalog>

Requirements:

1. The script should be able to read and parse the sample XML document.
2. The script should be able to extract information from both books and music elements, including element values and attributes.
3. The script should be able to handle namespaces and nested elements.
4. The script should be able to output the extracted information in a clear and organized format.
5. The script should be well-documented and easy to understand.

Sample Output:

Book 1:

Author: Writer

Title: