Java DOM Parser - Parse XML Document

Steps to Using JDOM

Following are the steps used while parsing a document using JDOM Parser.

- Import XML-related packages.
- Create a SAXBuilder.
- Create a Document from a file or stream
- Extract the root element
- Examine attributes
- Examine sub-elements

Import XML-related packages

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

Create a DocumentBuilder

```java
DocumentBuilderFactory factory =
DocumentBuilderFactory.newInstance();
DocumentBuilder builder = factory.newDocumentBuilder();
```

Create a Document from a file or stream

```java
StringBuilder xmlStringBuilder = new StringBuilder();
xmlStringBuilder.append("<?xml version="1.0"?> <class> </class>");
ByteArrayInputStream input = new ByteArrayInputStream(
    xmlStringBuilder.toString().getBytes("UTF-8"));
Document doc = builder.parse(input);
```

Extract the root element

```java
Element root = document.getDocumentElement();
```

Examine attributes

```
//returns specific attribute
getAttribute("attributeName");

//returns a Map (table) of names/values
getAttributes();
```

Examine sub-elements

```
//returns a list of subelements of specified name
getElementsByTagName("subelementName");

//returns a list of all child nodes
getChildNodes();
```

Demo Example

Here is the input xml file that we need to parse −

```xml
<?xml version = "1.0"?>
<class>
    <student rollno = "393">
        <firstname>dinkar</firstname>
        <lastname>kad</lastname>
        <nickname>dinkar</nickname>
        <marks>85</marks>
    </student>

    <student rollno = "493">
        <firstname>Vaneet</firstname>
        <lastname>Gupta</lastname>
        <nickname>vinni</nickname>
        <marks>95</marks>
    </student>

    <student rollno = "593">
        <firstname>jasvir</firstname>
        <lastname>singn</lastname>
        <nickname>jazz</nickname>
        <marks>90</marks>
    </student>
</class>
```

DomParserDemo.java

```java
package com.tutorialspoint.xml;

import java.io.File;
import javax.xml.parsers.DocumentBuilderFactory;
import javax.xml.parsers.DocumentBuilder;
import org.w3c.dom.Document;
import org.w3c.dom.NodeList;
import org.w3c.dom.Node;
import org.w3c.dom.Element;

public class DomParserDemo {

    public static void main(String[] args) {

        try {
            File inputFile = new File("input.txt");
            DocumentBuilderFactory dbFactory = DocumentBuilderFactory.newInsta
            DocumentBuilder dBuilder = dbFactory.newDocumentBuilder();
            Document doc = dBuilder.parse(inputFile);
            doc.getDocumentElement().normalize();
            System.out.println("Root element :" + doc.getDocumentElement().get
            NodeList nList = doc.getElementsByTagName("student");
            System.out.println("----------------------------");

            for (int temp = 0; temp < nList.getLength(); temp++) {
                Node nNode = nList.item(temp);
                System.out.println("\nCurrent Element :" + nNode.getNodeName()

                if (nNode.getNodeType() == Node.ELEMENT_NODE) {
                    Element eElement = (Element) nNode;
                    System.out.println("Student roll no : "
                        + eElement.getAttribute("rollno"));
                    System.out.println("First Name : "
                        + eElement
                        .getElementsByTagName("firstname")
                        .item(0)
                        .getTextContent());
                    System.out.println("Last Name : "
                        + eElement
                        .getElementsByTagName("lastname")
                        .item(0)
                        .getTextContent());
                    System.out.println("Nick Name : "
                        + eElement
```

```
                    .getElementsByTagName("nickname")
                    .item(0)
                    .getTextContent());
                System.out.println("Marks : "
                    + eElement
                    .getElementsByTagName("marks")
                    .item(0)
                    .getTextContent());
            }
        }
    } catch (Exception e) {
        e.printStackTrace();
    }
}
}
```

This would produce the following result −

```
Root element :class
----------------------------

Current Element :student
Student roll no : 393
First Name : dinkar
Last Name : kad
Nick Name : dinkar
Marks : 85

Current Element :student
Student roll no : 493
First Name : Vaneet
Last Name : Gupta
Nick Name : vinni
Marks : 95

Current Element :student
Student roll no : 593
First Name : jasvir
Last Name : singn
Nick Name : jazz
Marks : 90
```