



Web Technology
(KCS-602)
Unit 2
XML

Prepared By

Abhishek Kesharwani

Assistant Professor, UCER Naini, Allahabad

XML PARSERS

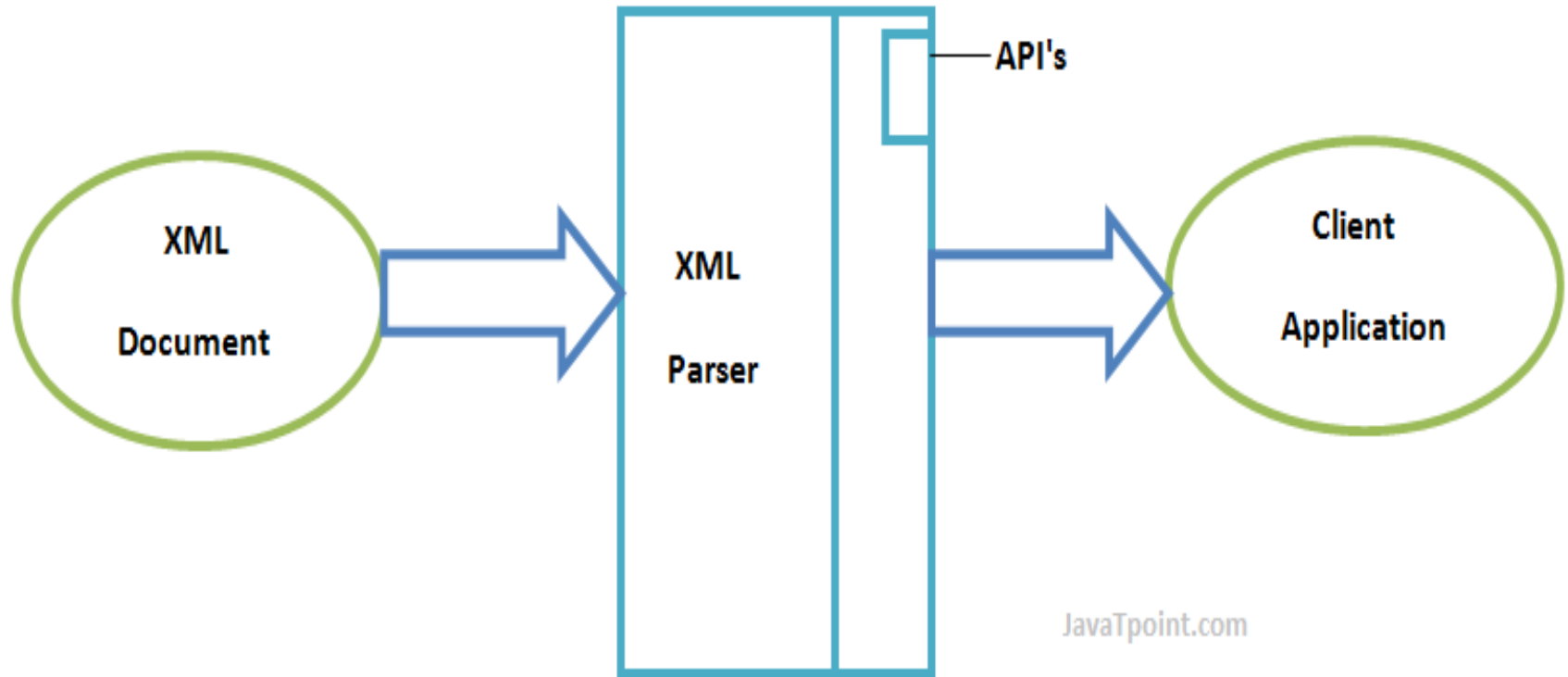
- An XML parser is a software library or package that provides interfaces for client applications to work with an XML document.
- The XML Parser is designed to read the XML and create a way for programs to use XML.
- XML parser validates the document and check that the document is well formatted.

Types of XML Parsers

These are the two main types of XML Parsers:

- DOM
- SAX

XML PARSERS



DOM (Document Object Model)

A DOM document is an object which contains all the information of an XML document. It is composed like a tree structure.

Features of DOM Parser

A DOM Parser creates an internal structure in memory which is a DOM document object and the client applications get information of the original XML document by invoking methods on this document object.

DOM

- The XML DOM defines a standard for accessing and manipulating XML.
- The DOM is a W3C (World Wide Web Consortium) standard.
- The DOM defines a standard for accessing documents like XML and HTML.

The DOM is separated into 3 different parts / levels:

- Core DOM - standard model for any structured document
- XML DOM - standard model for XML documents
- HTML DOM - standard model for HTML documents

What is the XML DOM?

- The XML DOM defines the **objects and properties** of all XML elements, and the **methods** (interface) to access them.
- In other words: **The XML DOM is a standard for how to get, change, add, or delete XML elements.**

Advantages

- 1) It supports both read and write operations and the API is very simple to use.
- 2) It is preferred when random access to widely separated parts of a document is required.

Disadvantages

- 1) It is memory inefficient. (consumes more memory because the whole XML document needs to be loaded into memory).
- 2) It is comparatively slower than other parsers.

XML SAX

- **SAX (Simple API for XML)** is an event-based sequential access parser API developed by the XML-DEV mailing list for XML documents.
- SAX provides a mechanism for reading data from an XML document that is an alternative to that provided by the Document Object Model (DOM).
- SAX parsers operate on each piece of the XML document sequentially.

Advantages

- 1) It is simple and memory efficient.
- 2) It is very fast and works for huge documents.

Disadvantages

- 1) Clients never know the full information because the data is broken into pieces.

Introduction to XML Schema

- **XML Schema is an XML-based alternative to DTD.**
- **An XML schema describes the structure of an XML document.**

Purpose of an XML Schema

- The purpose of an XML Schema is to define the legal building blocks of an XML document, just like a DTD.
- defines elements that can appear in a document
- defines attributes that can appear in a document
- defines which elements are child elements
- defines the order of child elements
- defines the number of child elements
- defines whether an element is empty or can include text
- defines data types for elements and attributes
- defines default and fixed values for elements and attributes