

Scala & XML

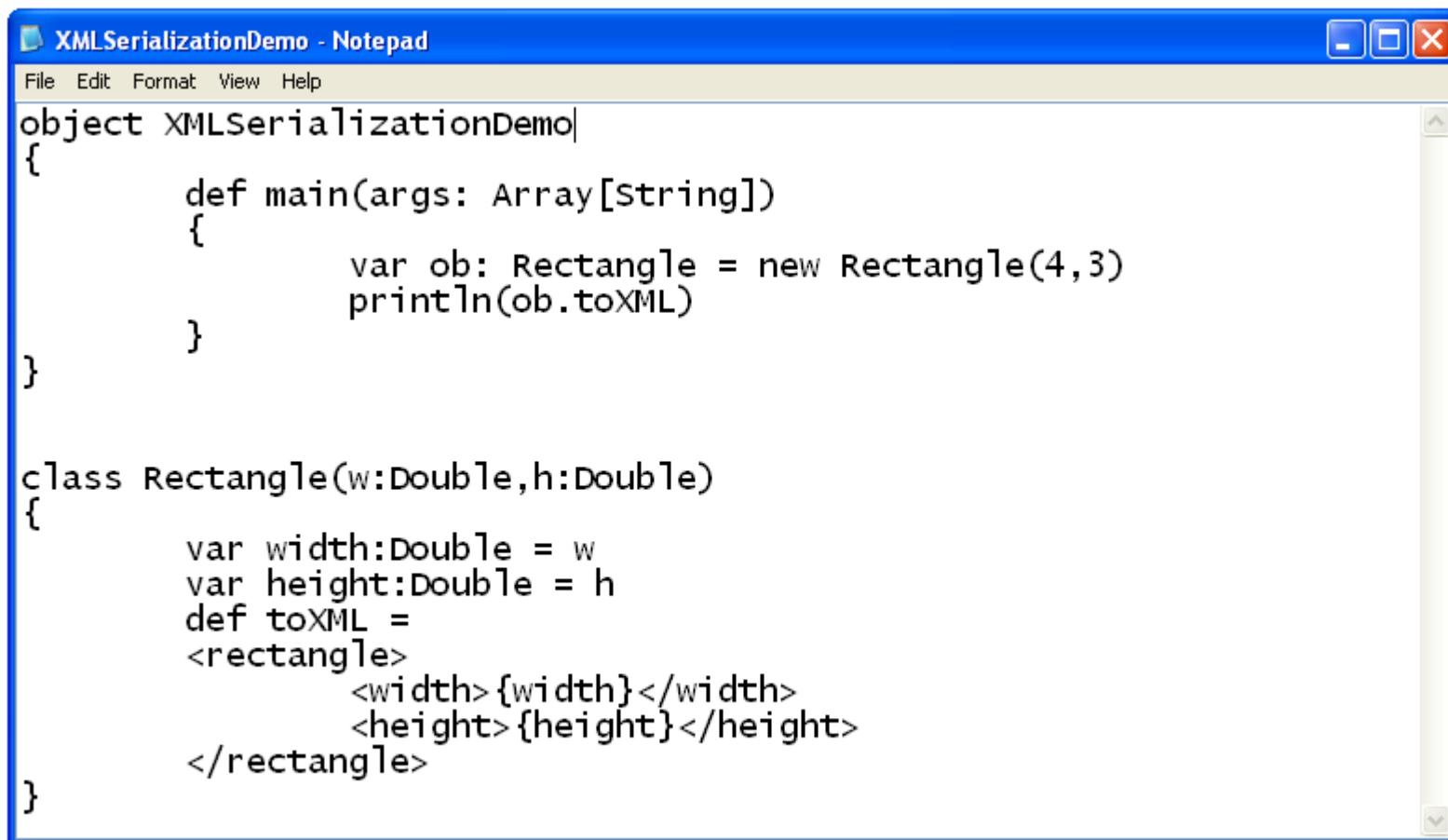
Introduction

- ❖ The Scala programming language has inner built in support for working with XML.

XML Serialization

- ❖ All we need to do in order to enable a smooth serialization of objects instantiated from our class into XML representation is defining the `toXML` method in our class.

XML Serialization

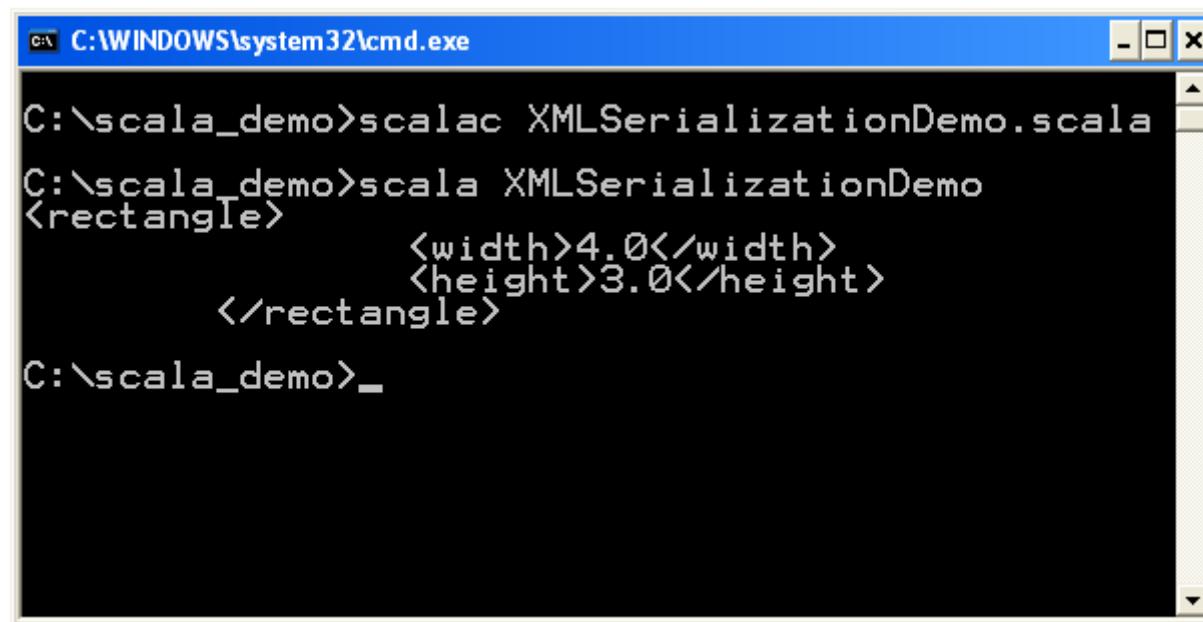


The screenshot shows a Windows Notepad window titled "XMLSerializationDemo - Notepad". The window contains Scala code demonstrating XML serialization. The code defines an object `XMLSerializationDemo` with a `main` method that creates a `Rectangle` object and prints its XML representation. The `Rectangle` class has fields `width` and `height`, and a `toXML` method that returns an XML string representing the rectangle's dimensions.

```
object XMLSerializationDemo
{
    def main(args: Array[String])
    {
        var ob: Rectangle = new Rectangle(4,3)
        println(ob.toXML)
    }
}

class Rectangle(w:Double,h:Double)
{
    var width:Double = w
    var height:Double = h
    def toXML =
        <rectangle>
            <width>{width}</width>
            <height>{height}</height>
        </rectangle>
}
```

XML Serialization



```
C:\scala_demo>scalac XMLSerializationDemo.scala
C:\scala_demo>scala XMLSerializationDemo
<rectangle>
    <width>4.0</width>
    <height>3.0</height>
</rectangle>
C:\scala_demo>_
```

XML Generating

- ❖ We can easily auto generate new XML documents based on data we hold.

XML Generating

```
import scala.xml._  
import java.net._  
import scala.collection.mutable._  
  
object XMLDemo  
{  
    def main(args:Array[String])  
    {  
        var nodes = new Queue[Node] ()  
        args.foreach{str => nodes += <course>{str}</course>}  
        var str = <school>{nodes}</school>  
        println(str)  
    }  
}
```

XML Generating



A screenshot of a Windows Command Prompt window titled "Command Prompt". The window contains the following text:

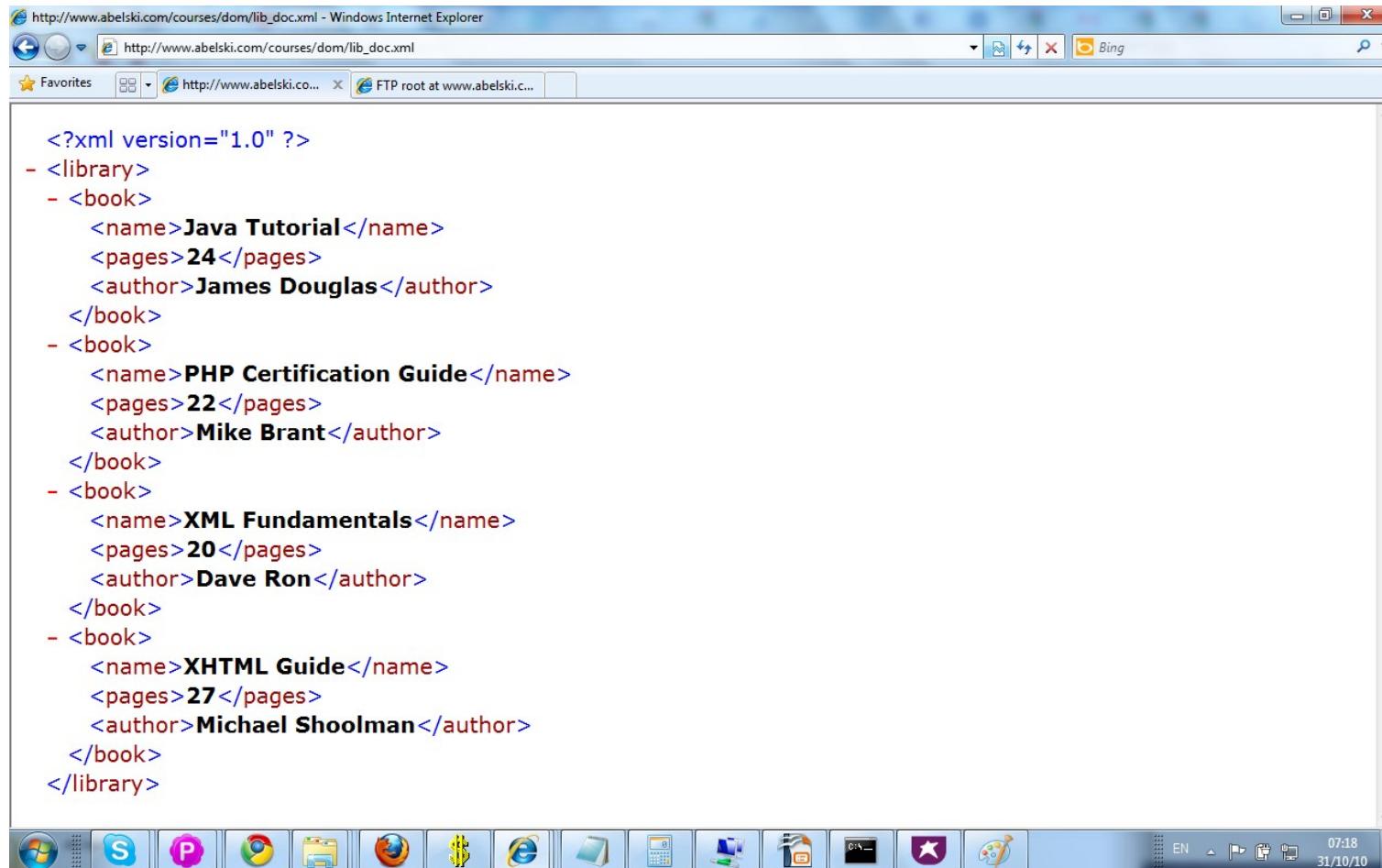
```
E:\>scala XMLDemo Jaja G# BML
<school><course>Jaja</course><course>G#</course><course>BML</course></school>
E:\>
```

The window has a standard Windows title bar with minimize, maximize, and close buttons. The text area shows the Scala command and the resulting XML output.

XML Parsing

- ❖ Scala has a built in capability for parsing XML documents.
The following code sample fetches an XML document from
the web and print out the names of all course the XML
document lists.

XML Parsing



A screenshot of a Windows Internet Explorer window displaying an XML document. The title bar reads "http://www.abelski.com/courses/dom/lib_doc.xml - Windows Internet Explorer". The address bar shows the same URL. The page content is an XML document with the following structure:

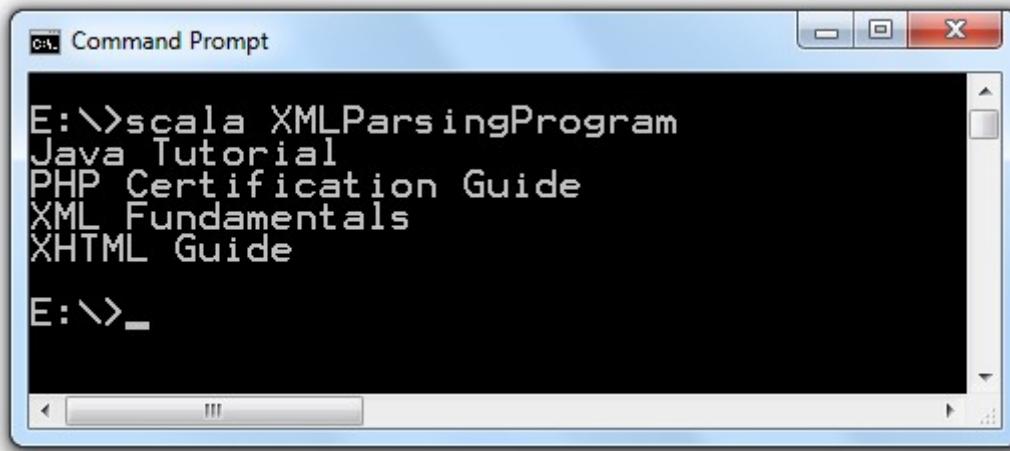
```
<?xml version="1.0" ?>
- <library>
  - <book>
    <name>Java Tutorial</name>
    <pages>24</pages>
    <author>James Douglas</author>
  </book>
  - <book>
    <name>PHP Certification Guide</name>
    <pages>22</pages>
    <author>Mike Brant</author>
  </book>
  - <book>
    <name>XML Fundamentals</name>
    <pages>20</pages>
    <author>Dave Ron</author>
  </book>
  - <book>
    <name>XHTML Guide</name>
    <pages>27</pages>
    <author>Michael Shoolman</author>
  </book>
</library>
```

http://www.abelski.com/courses/dom/lib_doc.xml

XML Parsing

```
import scala.xml._  
import java.net._  
  
object XMLParsingProgram  
{  
    def main(args:Array[String])  
    {  
        val url = new URL("http://www.abelski.com/courses/dom/lib_doc.xml")  
        val conn = url.openConnection  
        val doc = XML.load(conn.getInputStream)  
        for(ob<- (doc\\\"book\"))  
            println((ob\\\"name\").text)  
    }  
}
```

XML Parsing



```
c:\ Command Prompt
E:\>scala XMLParsingProgram
Java Tutorial
PHP Certification Guide
XML Fundamentals
XHTML Guide
E:\>_
```