Java programming. Exercise session VII

In this exercise session, you will read an XML file, that represent the power system containing 3 substations.

Exercise instructions:

1. Create a new class called ***ReadXML*** to parse XML file.
2. Load file "*opcim3sub.xml*" to Java and parse the file using Java DOM parser.
3. Read the following information about the power grid components from XML file:

Node name	Attributes
Substation	- *rdf:ID;* - *name*
VoltageLevel	- *rdf:ID;* - *name*
SynchronousMachine	- *rdf:ID;* - *name*

4. Create a method ***extractNode*** to read data from a XML node.
5. Print out all the required data from CIM objects.

Core structure of ***ReadXML*** class:

```
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 ReadXML {
	public static void main(String[] args) {

		try {

	File XmlFile = new File("opencim3sub.xml");
	DocumentBuilderFactory dbFactory = DocumentBuilderFactory.newInstance();
	DocumentBuilder dBuilder = dbFactory.newDocumentBuilder();
	Document doc = dBuilder.parse(XmlFile);

	// normalize CIM XML file
	doc.getDocumentElement().normalize();

	NodeList subList = doc.getElementsByTagName("cim:Substation");
	// … read other required CIM objects

      // … cycle through each list to extract required data
	for (int i = 0; i < subList.getLength(); i++) {
// … use extractNode method

		}
	}
		catch(Exception e){
			e.printStackTrace();
	}
```

```
    public static void extractNode (Node node){

    // … remember to convert node to element in order to search for the data inside it.

    // element.getElementsByTagName("cim:IdentifiedObject.name").item(0).getTextContent
    can be used to read specific attribute of XML node.

    }
}
```