Series of exercises on XML - JSON Mapping

Exercise 1:

Rules for converting XML elements to JSON format

A single structures XML element can be available in seven variations:

1. An empty element.
2. An element with pure text content.
3. An empty element with attributes.
4. An element with pure text content and attributes.
5. An element containing elements with different names.
6. An element containing elements with identical names.
7. An element containing elements and contiguous text.

The following table illustrates the transformation rules an XML element to JSON:

Pattern	XML	JSON
1	<e/>	"e": null
2	<e>text</e>	"e": "text"
3	<e name="value" />	"e":{"@name": "value"}
4	<e name="value">text</e>	"e": { "@name": "value", "#text": "text" }
5	<e> <a>text text </e>	"e": { "a": "text", "b": "text" }
6	<e> <a>text <a>text </e>	"e": { "a": ["text", "text"] }
7	<e> text <a>text </e>	"e": { "#text": "text", "a": "text" }

Exercise 1:

Translate the representation of the following XML data into JSON format:

```
<Root dbName = "gestion">
<description> Données sur les clients et les articles </description>

<Clients>
Informations sur les clients enregistrés dans la DB
<Client id = "C1">
<Name> Mohamed </Name>
<Address> O.E.B </Address>
</Client>
<Client id = "C2">
<Name> Ali </Name>
<Address> O.E.B </Address>
</Client>
</Clients>

<Products>
Informations sur les articles enregistrés dans la DB
<Product id = "P1">
<Name> Product 1 </Name>
```

```
<Type> Type 1 </Type>
</Product>
<Product id = "2">
<Name> Product 2 </Name>
<Type> Type 2 </Type>
</Product>
</Products>

</Root>
```

Solution

```
{
  "Root": {
    "@dbName": "gestion",
    "description": " Données sur les clients et les articles ",
    "Clients": {
      "#text": "Informations sur les clients enregistrés dans la DB",
      "Client": [
        {
          "@id": "C1",
          "Name": " Mohamed ",
          "Address": " O.E.B "
        },
        {
          "@id": "C2",
          "Name": " Ali ",
          "Address": " O.E.B "
        }
      ]
    },
    "Products": {
      "#text": "Informations sur les articles enregistrés dans la DB",
      "Product": [
        {
          "@id": "P1",
          "Name": " Product 1 ",
          "Type": " Type 1 "
        },
        {
          "@id": "2",
          "Name": " Product 2 ",
          "Type": " Type 2 "
        }
      ]
    }
  }

}
```

Exercise 2: Translate the representation of the following JSON data into XML format:

```
{
 "Root": {
  "details": {
   "@id": "INF-0001",
   "firstName": "Mohammed",
   "lastName": "Talbi",
   "isAlive": "true",
   "age": "21",
   "address": {
    "streetAddress": "rue de l'indépendance N° 21",
    "city": "O.E.B",
    "state": "Algérie",
    "postalCode": "04000"
   }
  },
  "phoneNumbers": [
   {
    "type": "home",
    "number": "032111111"
   },
   {
    "type": "office",
    "number": "032888888"
   }
  ]
 }

}
```

Solution

```
<Root>
	<details id = "INF-0001">
		<firstName>Mohammed</firstName>
		<lastName>Talbi</lastName>
		<isAlive>true</isAlive>
		<age>21</age>
		<address>
			<streetAddress>rue de l'indépendance N° 21</streetAddress>
			<city>O.E.B</city>
			<state>Algérie</state>
			<postalCode>04000</postalCode>
		</address>
	</details>
	<phoneNumbers>
		<type>home</type>
		<number>032111111</number>
	</phoneNumbers>
	<phoneNumbers>
		<type>office</type>
		<number>032888888</number>
	</phoneNumbers>
</Root>
```