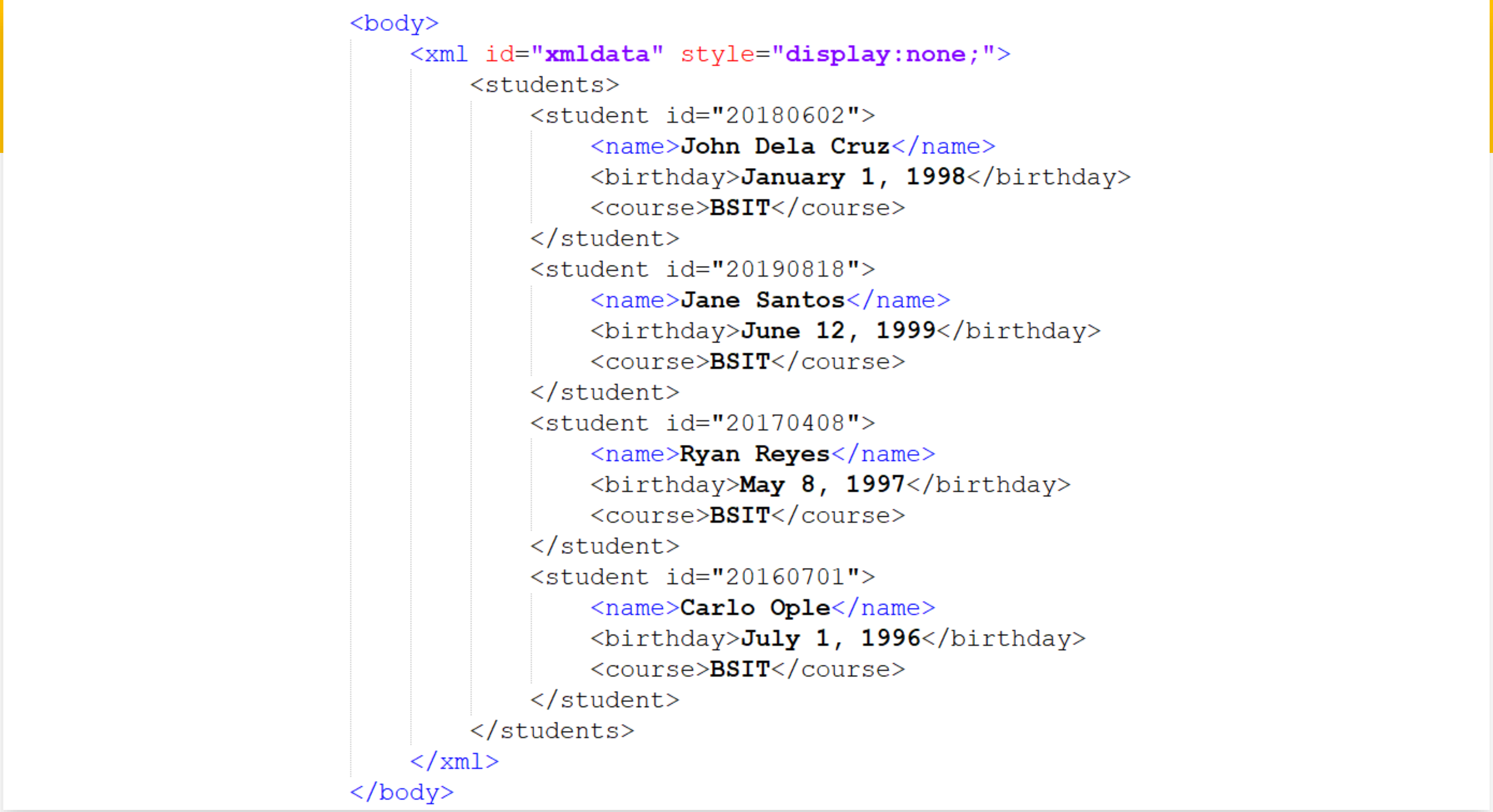
Prepared by Mr. Renato L. Adriano II

XML DOM USING JAVASCRIPT

JavaScript, by default, uses DOM to manipulate HTML.

JavaScript can also be used in manipulating XML inside HTML.

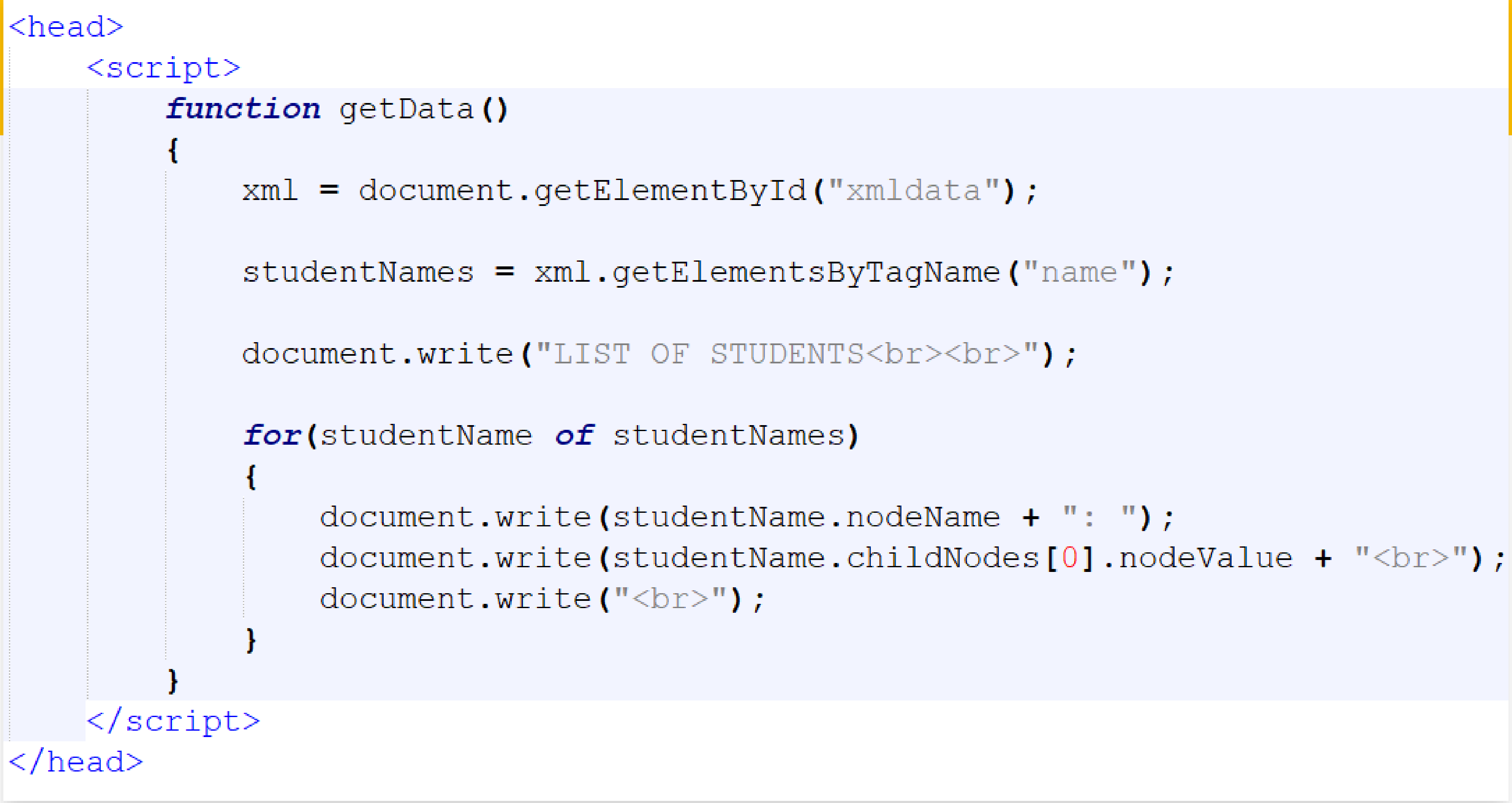
SAMPLE XML DOM



```
<body>
    <xml id="xmldata" style="display:none;">
        <students>
            <student id="20180602">
                <name>John Dela Cruz</name>
                <birthday>January 1, 1998</birthday>
                <course>BSIT</course>
            </student>
            <student id="20190818">
                <name>Jane Santos</name>
                <birthday>June 12, 1999</birthday>
                <course>BSIT</course>
            </student>
            <student id="20170408">
                <name>Ryan Reyes</name>
                <birthday>May 8, 1997</birthday>
                <course>BSIT</course>
            </student>
            <student id="20160701">
                <name>Carlo Ople</name>
                <birthday>July 1, 1996</birthday>
                <course>BSIT</course>
            </student>
        </students>
    </xml>
</body>
```

STEP 1: CREATE XML DATA IN HTML

- To add XML data in HTML, use the <xml> tag.
- Provide an id for the <xml> tag.
- Set the style to display:none to hide the XML to the users.

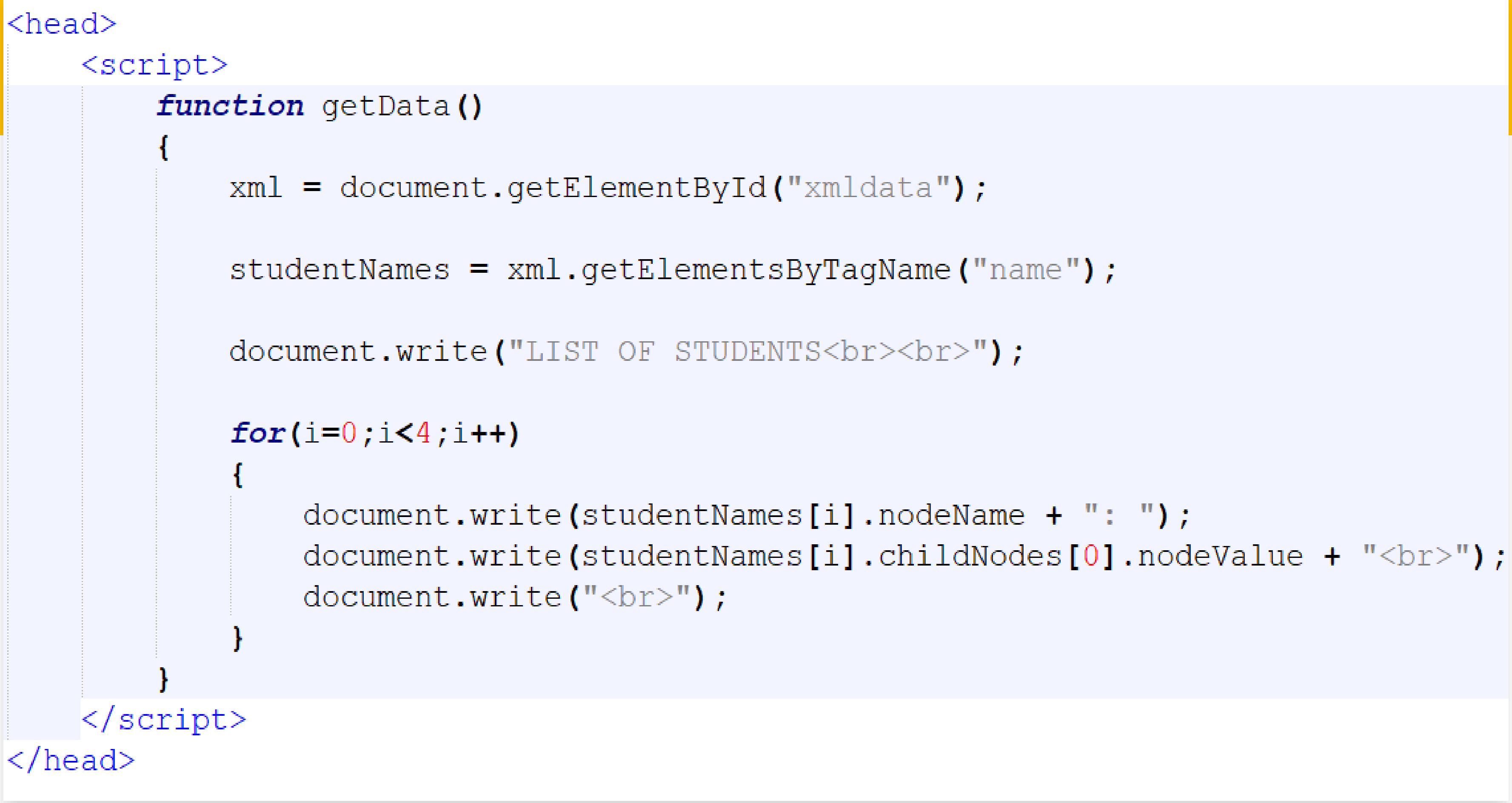


```
<head>
    <script>
        function getData()
        {
            xml = document.getElementById("xmldata");

            studentNames = xml.getElementsByTagName("name");

            document.write("LIST OF STUDENTS<br><br>");

            for(studentName of studentNames)
            {
                document.write(studentName.nodeName + ":  ");
                document.write(studentName.childNodes[0].nodeValue + "<br>");
                document.write("<br>");
            }
        }
    </script>
</head>
```

STEP 2A: CREATE JAVASCRIPT FUNCTION

- Create a JavaScript function that is set to manipulate the XML data in the HTML.

NOTE: JavaScript could be internal or external.

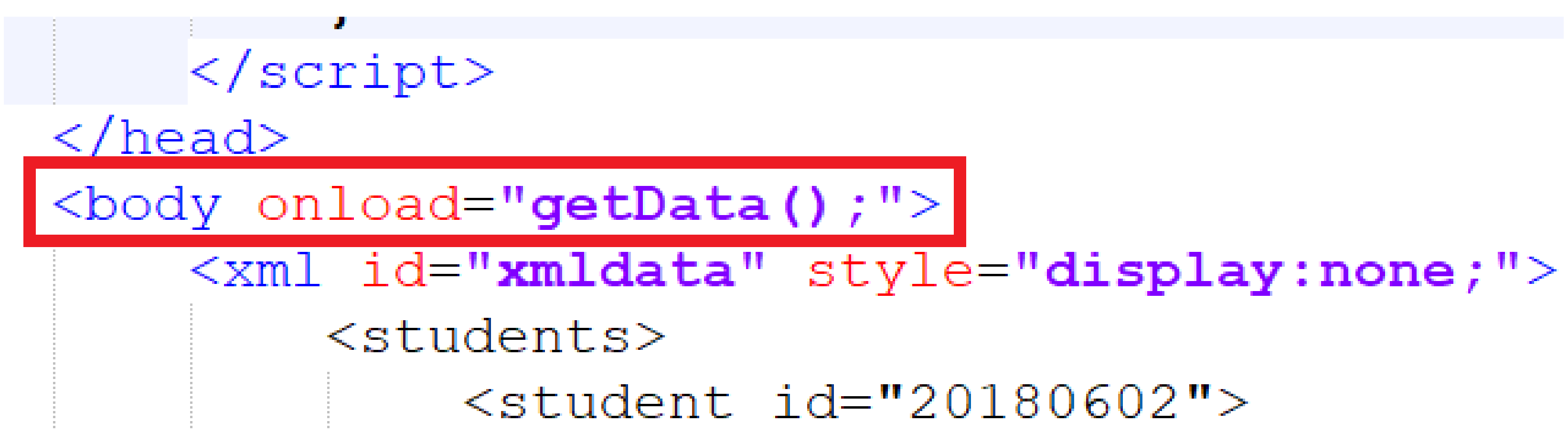


```
<head>
    <script>
        function getData()
        {
            xml = document.getElementById("xmldata");

            studentNames = xml.getElementsByTagName("name");

            document.write("LIST OF STUDENTS<br><br>");

            for(i=0;i<4;i++)
            {
                document.write(studentNames[i].nodeName + ": ");
                document.write(studentNames[i].childNodes[0].nodeValue + "<br>");
                document.write("<br>");
            }
        }
    </script>
</head>
```

STEP 2B: CREATE JAVASCRIPT FUNCTION

- Create a JavaScript function that is set to manipulate the XML data in the HTML.

NOTE: JavaScript could be internal or external.



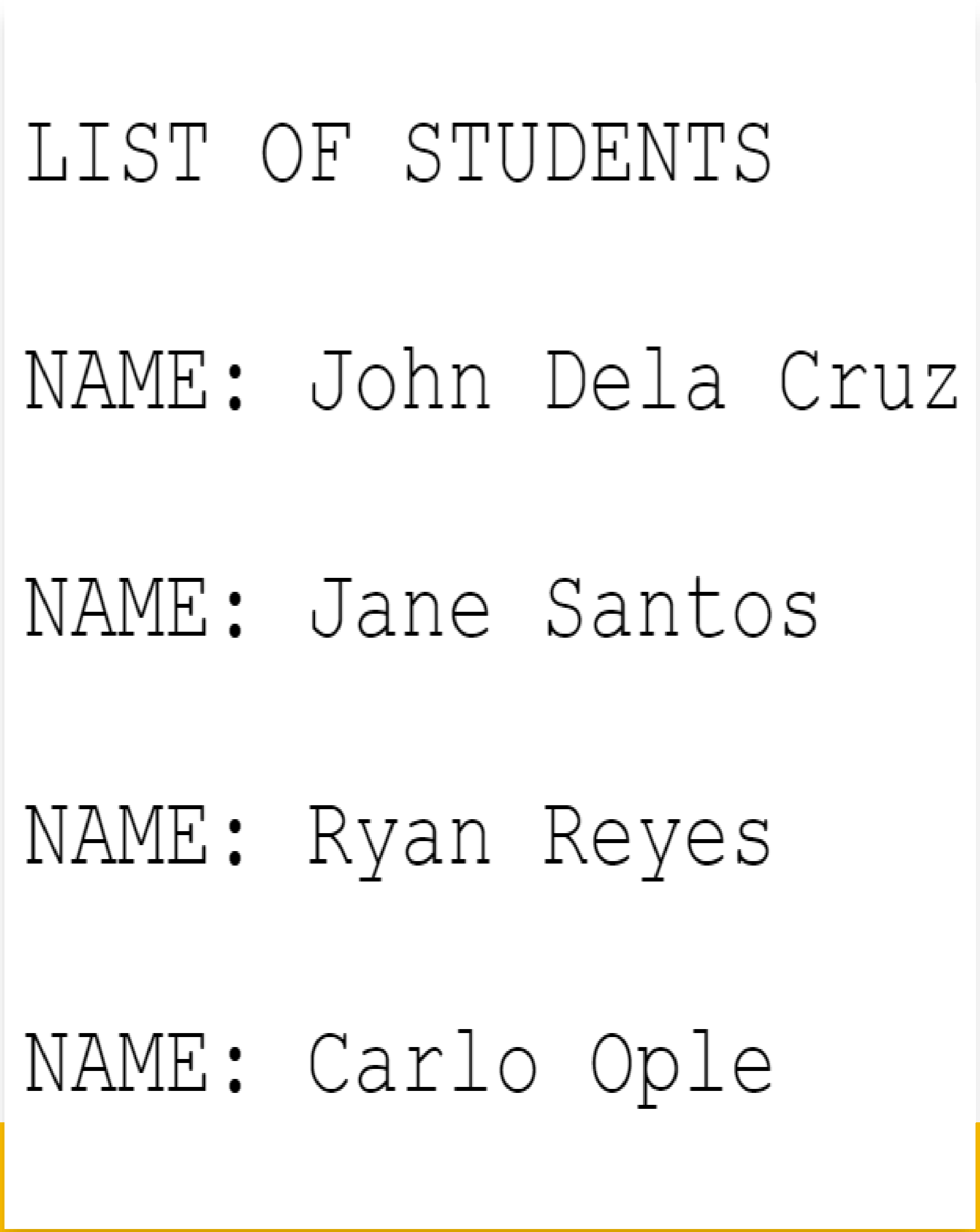
```
        </script>
</head>
<body onload="getData();">
        <xml id="xmldata" style="display:none;">
            <students>
                <student id="20180602">
```

STEP 3: TRIGGER EVENT TO ACCESS XML DATA

- Add an event to any tags on your HTML, except for the <xml> tag.
- onload event is added to the <body> tag to manipulate the XML data.
- Set the value of the onload event to getData(), the function created in JavaScript.

OUTPUT

- After setting the onload event, run the code using any browser.



```
LIST OF STUDENTS

NAME: John Dela Cruz

NAME: Jane Santos

NAME: Ryan Reyes

NAME: Carlo Ople
```

DOM PROPERTIES

DOM PROPERTIES

Here are some of the commonly used DOM properties:

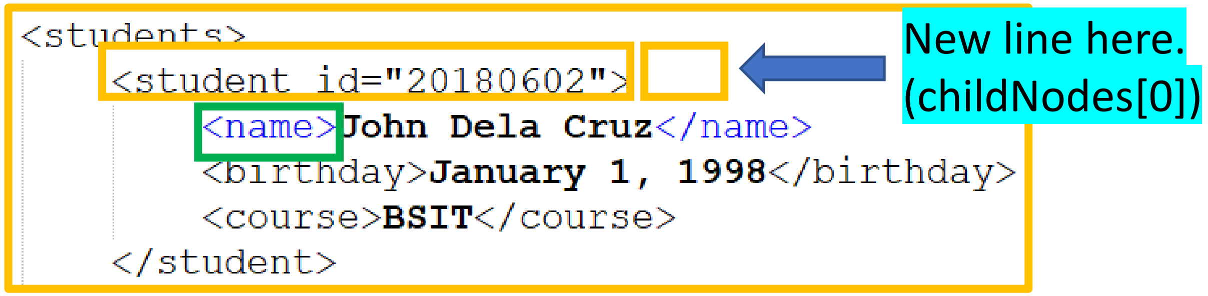
- childNodes
- parentNode
- nextSibling
- nextElementSibling
- previousSibling
- previousElementSibling
- firstChild
- firstElementChild
- lastChild
- lastElementChild

XML FILE

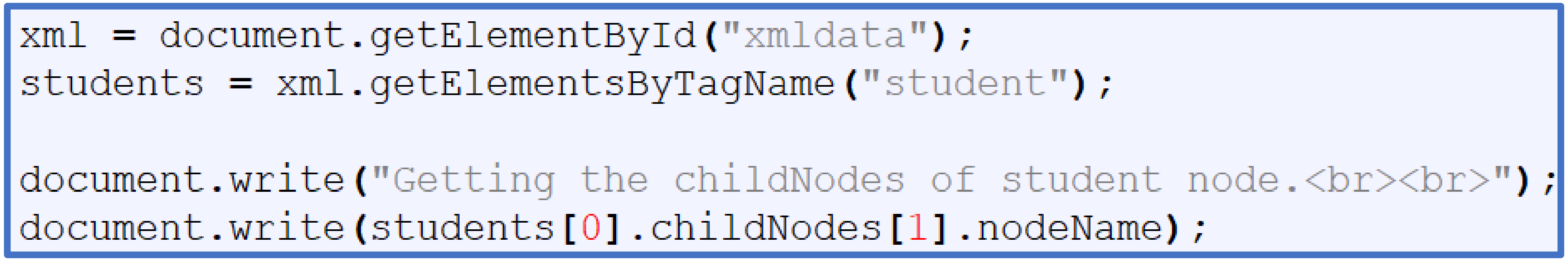
```
<body onload="getData();">
    <xml id="xmldata" style="display:none;">
        <students>
            <student id="20180602">
                <name>John Dela Cruz</name>
                <birthday>January 1, 1998</birthday>
                <course>BSIT</course>
            </student>
            <student id="20190818">
                <name>Jane Santos</name>
                <birthday>June 12, 1999</birthday>
                <course>BSIT</course>
            </student>
            <student id="20170408">
                <name>Ryan Reyes</name>
                <birthday>May 8, 1997</birthday>
                <course>BSIT</course>
            </student>
            <student id="20160701">
                <name>Carlo Ople</name>
                <birthday>July 1, 1996</birthday>
                <course>BSIT</course>
            </student>
        </students>
    </xml>
</body>
```

childNodes

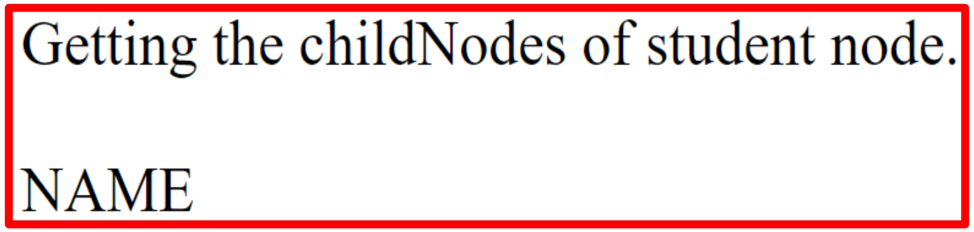
- returns the children of an element.



```xml
<students>
    <student id="20180602">
        <name>John Dela Cruz</name>
        <birthday>January 1, 1998</birthday>
        <course>BSIT</course>
    </student>
```



```javascript
xml = document.getElementById("xmldata");
students = xml.getElementsByTagName("student");

document.write("Getting the childNodes of student node.<br><br>");
document.write(students[0].childNodes[1].nodeName);
```

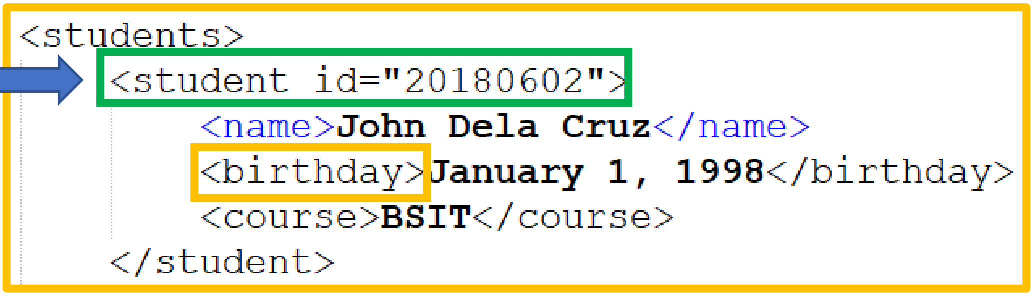


```
Getting the childNodes of student node.

NAME
```

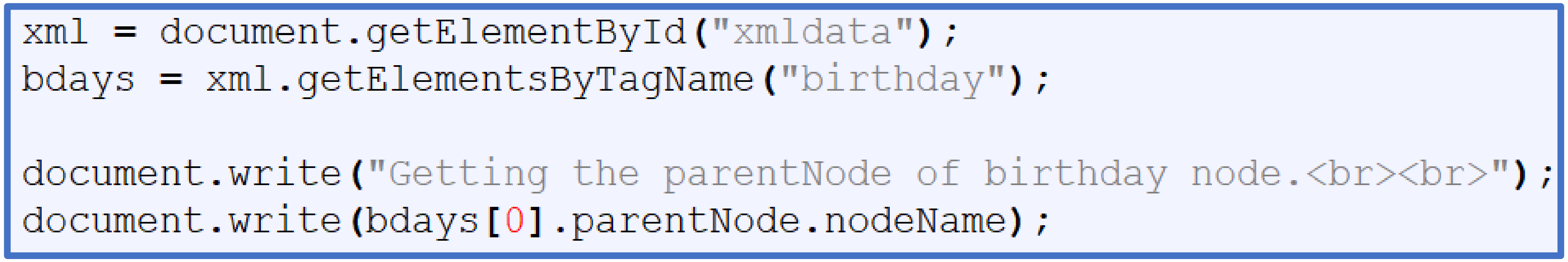
parentNode

- returns the parent of an element.

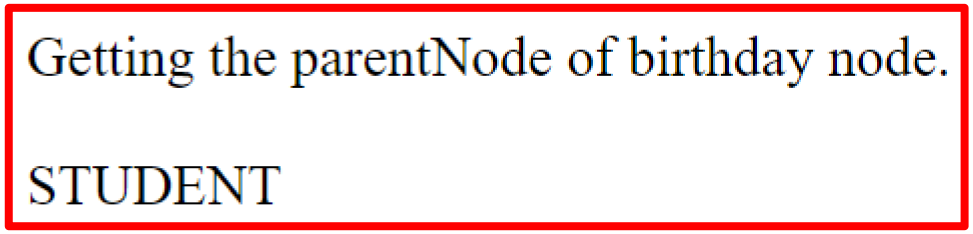
(parentNode)



```
<students>
    <student id="20180602">
        <name>John Dela Cruz</name>
        <birthday>January 1, 1998</birthday>
        <course>BSIT</course>
    </student>
```



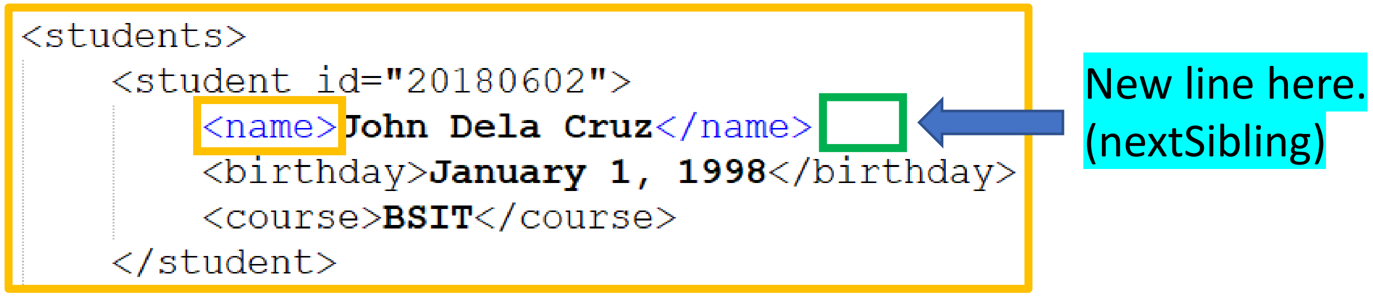
```
xml = document.getElementById("xmldata");
bdays = xml.getElementsByTagName("birthday");

document.write("Getting the parentNode of birthday node.<br><br>");
document.write(bdays[0].parentNode.nodeName);
```



```
Getting the parentNode of birthday node.

STUDENT
```

nextSibling

- returns the next sibling of an element, either if it is an element node or a text node.



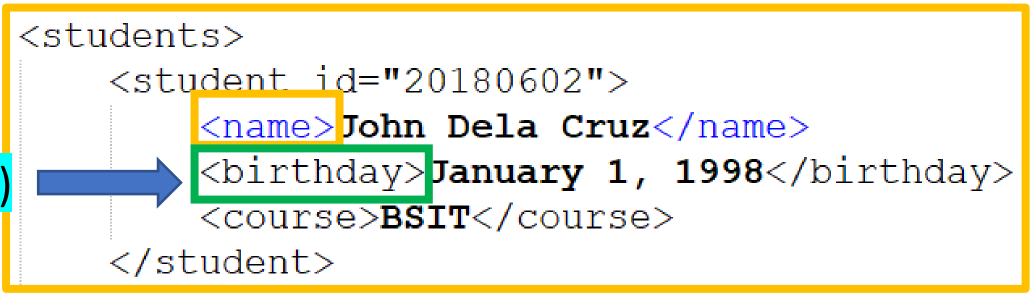
```
<students>
    <student id="20180602">
        <name>John Dela Cruz</name>
        <birthday>January 1, 1998</birthday>
        <course>BSIT</course>
    </student>
```

```
xml = document.getElementById("xmldata");
names = xml.getElementsByTagName("name");

document.write("Getting the nextSibling of name node.<br><br>");
document.write(names[0].nextSibling.nodeName);
```

```
Getting the nextSibling of name node.

#text
```

nextElementSibling

- returns the next element sibling of an element.



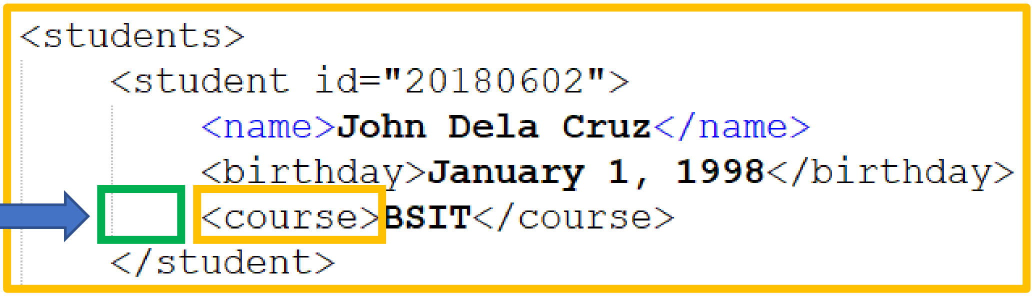
```
<students>
    <student id="20180602">
        <name>John Dela Cruz</name>
        <birthday>January 1, 1998</birthday>
        <course>BSIT</course>
    </student>
```

```
xml = document.getElementById("xmldata");
names = xml.getElementsByTagName("name");

document.write("Getting the nextElementSibling of name node.<br><br>");
document.write(names[0].nextElementSibling.nodeName);
```

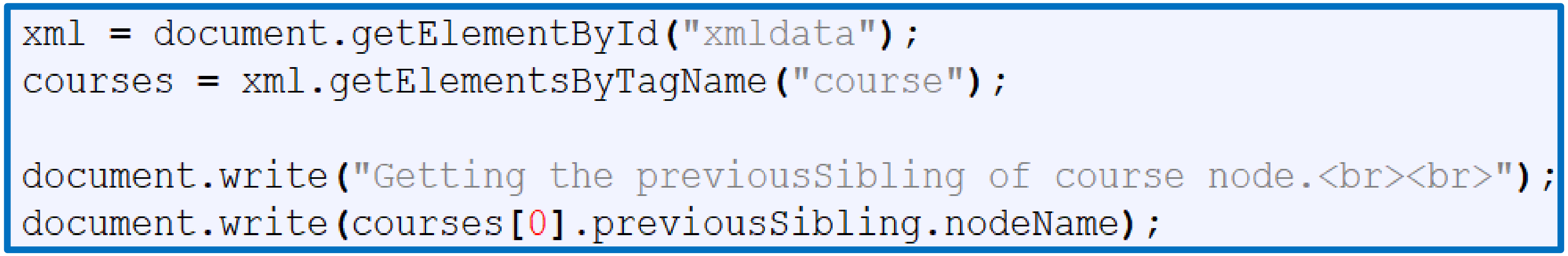
```
Getting the nextElementSibling of name node.

BIRTHDAY
```

previousSibling

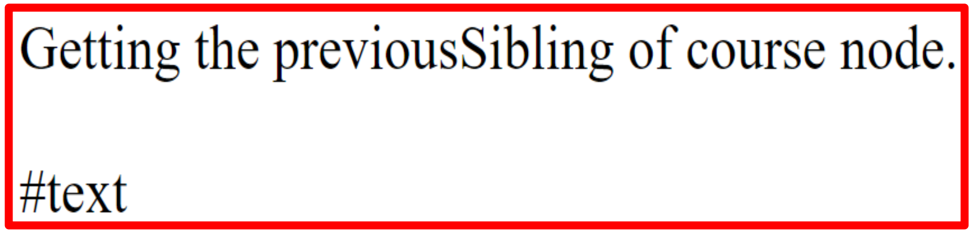
- returns the previous sibling of an element, either if it is an element node or a text node.



```
<students>
    <student id="20180602">
        <name>John Dela Cruz</name>
        <birthday>January 1, 1998</birthday>
        <course>BSIT</course>
    </student>
```



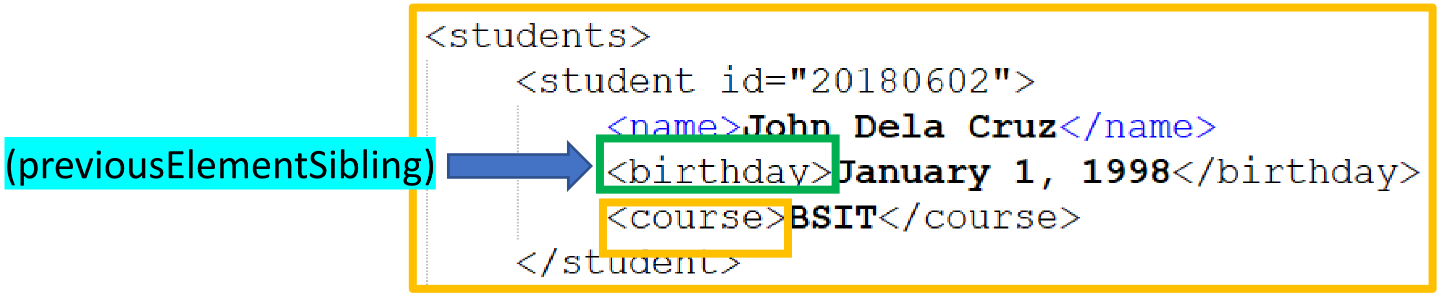
```
xml = document.getElementById("xmldata");
courses = xml.getElementsByTagName("course");

document.write("Getting the previousSibling of course node.<br><br>");
document.write(courses[0].previousSibling.nodeName);
```



```
Getting the previousSibling of course node.

#text
```

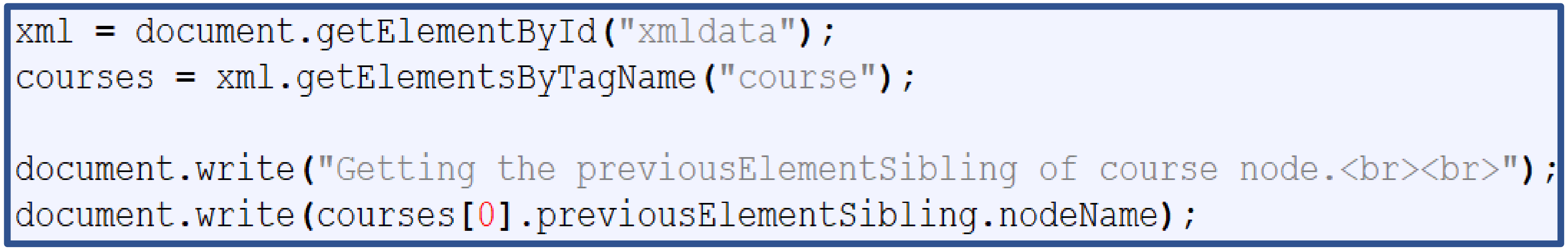
previousElementSibling

- returns the previous element sibling of an element.

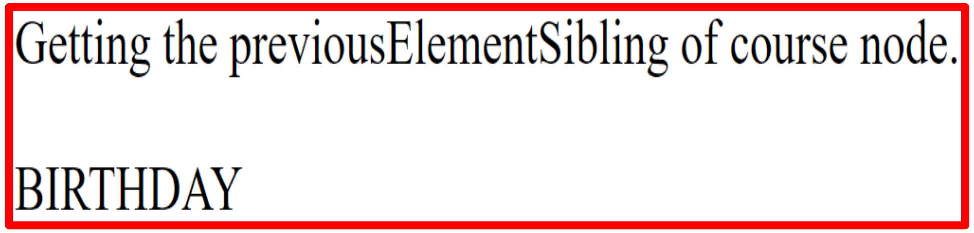


(previousElementSibling)

```
<students>
    <student id="20180602">
        <name>John Dela Cruz</name>
        <birthday>January 1, 1998</birthday>
        <course>BSIT</course>
    </student>
```



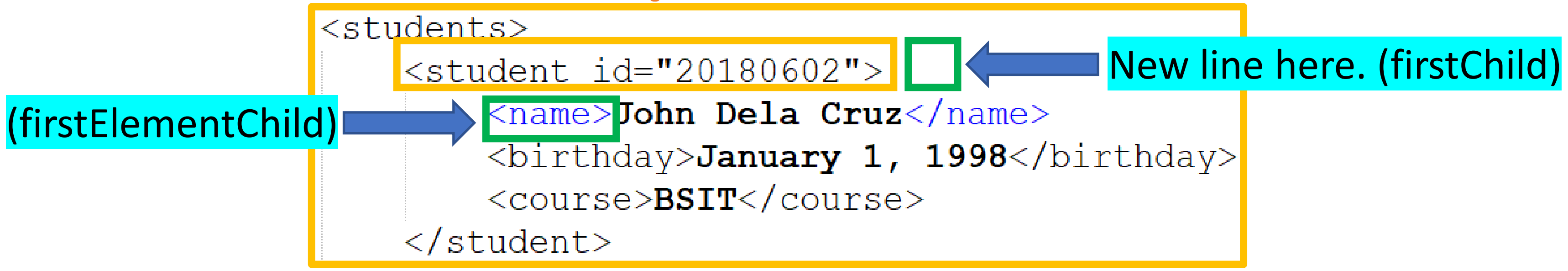
```
xml = document.getElementById("xmldata");
courses = xml.getElementsByTagName("course");

document.write("Getting the previousElementSibling of course node.<br><br>");
document.write(courses[0].previousElementSibling.nodeName);
```



```
Getting the previousElementSibling of course node.

BIRTHDAY
```

firstChild/ firstElementChild

- returns the first child node/element child node of the selected element



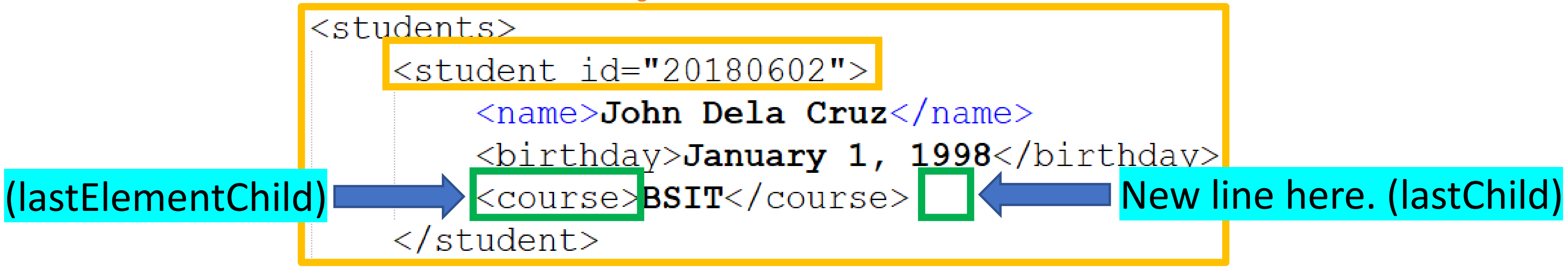
```
<students>
    <student id="20180602">
        <name>John Dela Cruz</name>
        <birthday>January 1, 1998</birthday>
        <course>BSIT</course>
    </student>
```

```
xml = document.getElementById("xmldata");
students = xml.getElementsByTagName("student");

document.write("Getting the firstChild/ElementChild of student node.<br><br>");
document.write(students[0].firstChild.nodeName + "<br>");
document.write(students[0].firstElementChild.nodeName);
```

```
Getting the firstChild/ElementChild of student node.

#text
NAME
```

lastChild/ lastElementChild

- returns the last child node/element child node of the selected element



```
<students>
    <student id="20180602">
        <name>John Dela Cruz</name>
        <birthday>January 1, 1998</birthday>
        <course>BSIT</course>
    </student>
```

```
xml = document.getElementById("xmldata");
students = xml.getElementsByTagName("student");

document.write("Getting the lastChild/ElementChild of student node.<br><br>");
document.write(students[0].lastChild.nodeName + "<br>");
document.write(students[0].lastElementChild.nodeName);
```

```
Getting the lastChild/ElementChild of student node.

#text
COURSE
```

DOM NODE PROPERTIES

nodeName

Possible values:

- Returns the tag name for element nodes, in uppercase.
- Returns the name of the attribute for attribute nodes.
- Returns "#text" for text nodes.
- Returns "#comment" for comment nodes.
- Returns "#document" for document nodes.

nodeValue

Possible values:

- Returns null for element nodes and document nodes.
- Returns the value of the attribute for attribute nodes.
- Returns the content for text nodes.
- Returns the content for comment nodes.

nodeType

- nodeType property returns the integer equivalent of the node.

Value	Node Type
1	Element
2	Attribute
3	Text
4	CDATASection
5	EntityReference
6	Entity

nodeType

- nodeType property returns the integer equivalent of the node.

Value	Node Type
7	ProcessingInstruction
8	Comment
9	Document
10	DocumentType
11	DocumentFragment
12	Notation

NODE TRAVERSING

NODE TRAVERSING

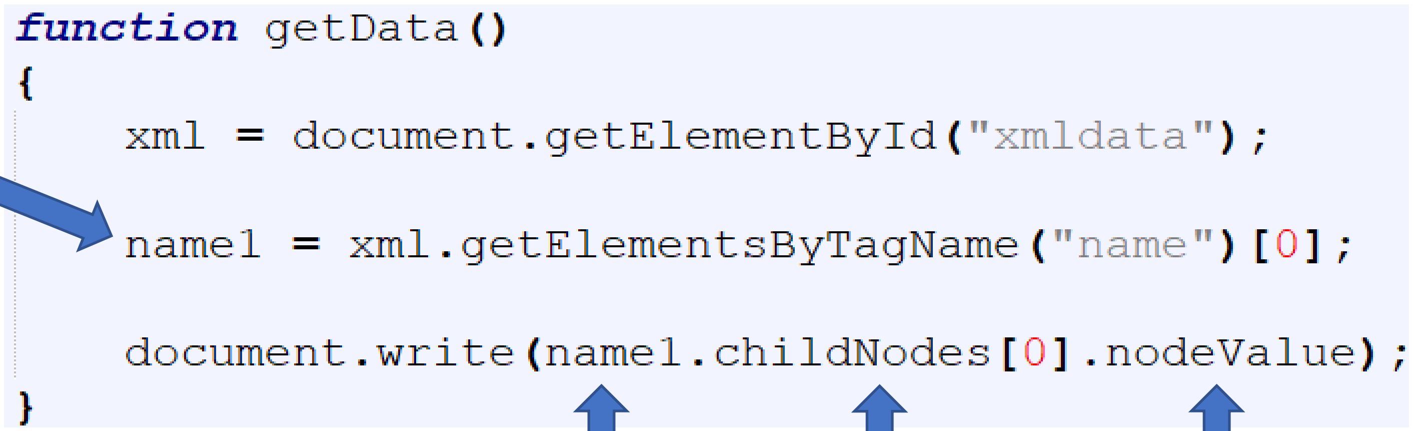
Traversing a Node to Get its Value

- To get the value stored in XML elements, the correct way to traverse or to access is:

Element Node → Text Node → Node Value

NODE TRAVERSING

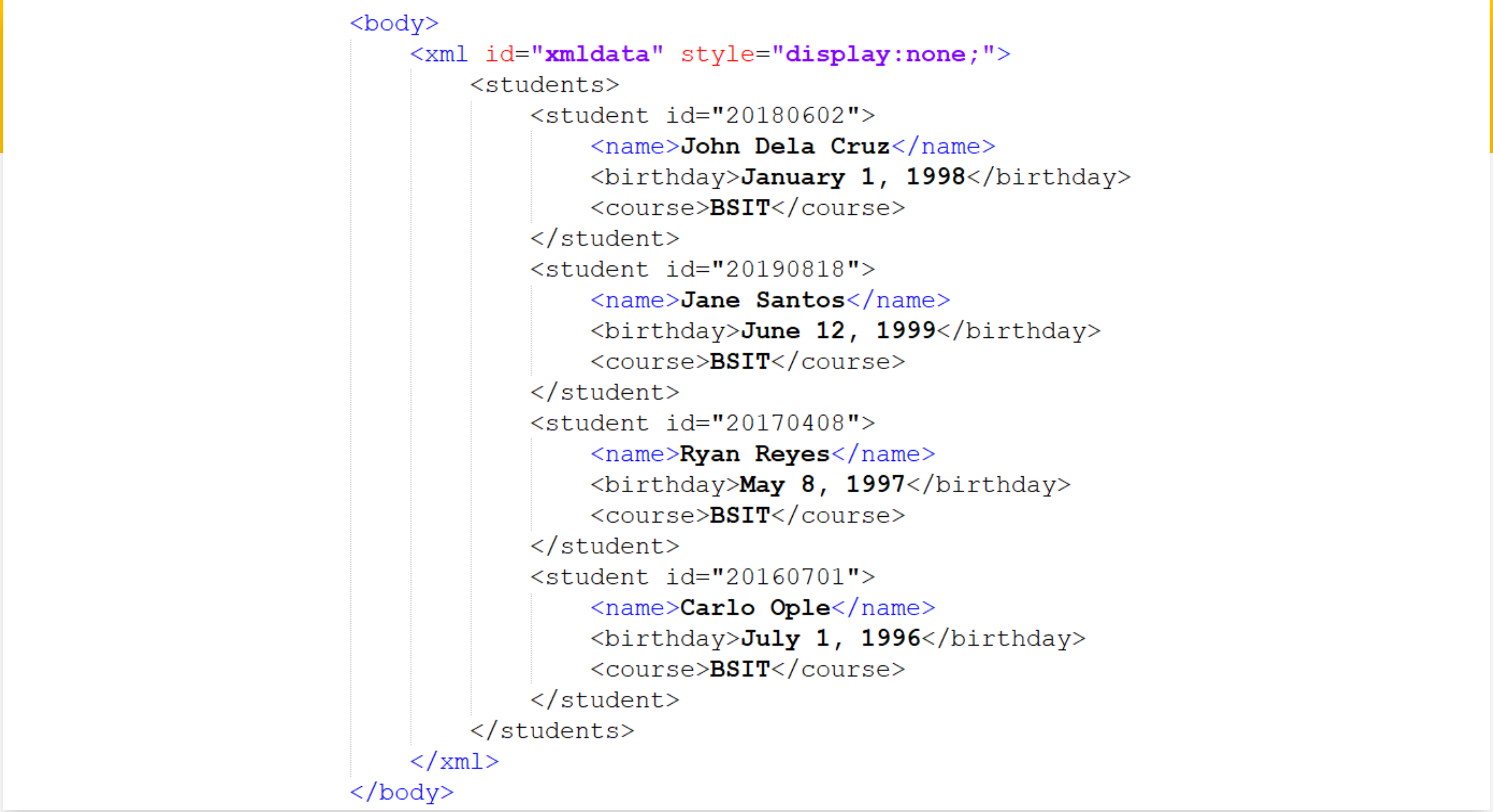
Selecting the first element with tag name “name”.



```
function getData()
{
    xml = document.getElementById("xmldata");

    name1 = xml.getElementsByTagName("name")[0];

    document.write(name1.childNodes[0].nodeValue);
}
```

Element Node → Text Node → Node Value

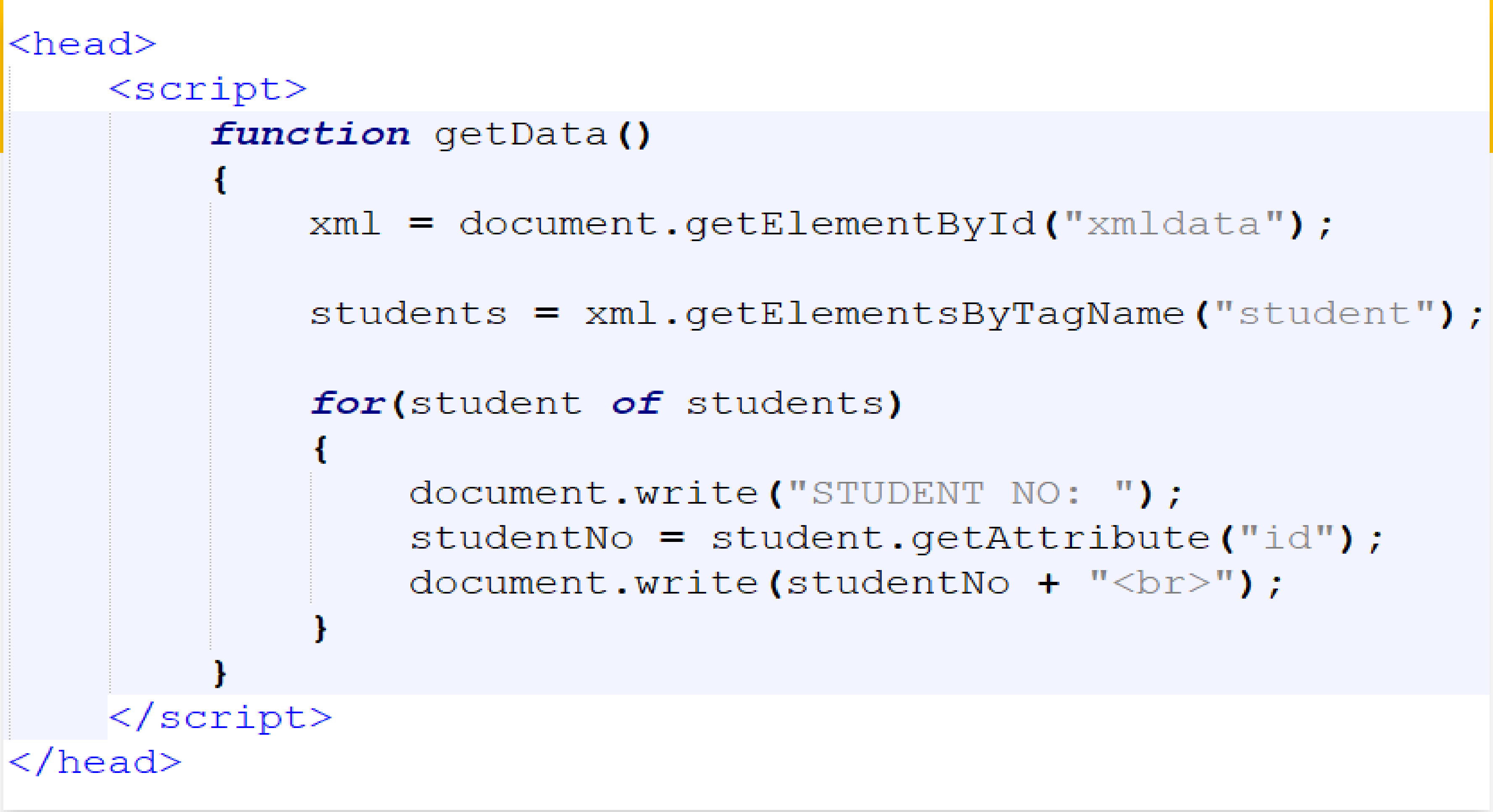
ACCESSING ATTRIBUTE VALUES



```
<body>
    <xml id="xmldata" style="display:none;">
        <students>
            <student id="20180602">
                <name>John Dela Cruz</name>
                <birthday>January 1, 1998</birthday>
                <course>BSIT</course>
            </student>
            <student id="20190818">
                <name>Jane Santos</name>
                <birthday>June 12, 1999</birthday>
                <course>BSIT</course>
            </student>
            <student id="20170408">
                <name>Ryan Reyes</name>
                <birthday>May 8, 1997</birthday>
                <course>BSIT</course>
            </student>
            <student id="20160701">
                <name>Carlo Ople</name>
                <birthday>July 1, 1996</birthday>
                <course>BSIT</course>
            </student>
        </students>
    </xml>
</body>
```

STEP 1: CREATE XML DATA IN HTML

- To add XML data in HTML, use the <xml> tag.
- Provide an id for the <xml> tag.
- Set the style to display:none to hide the XML to the users.

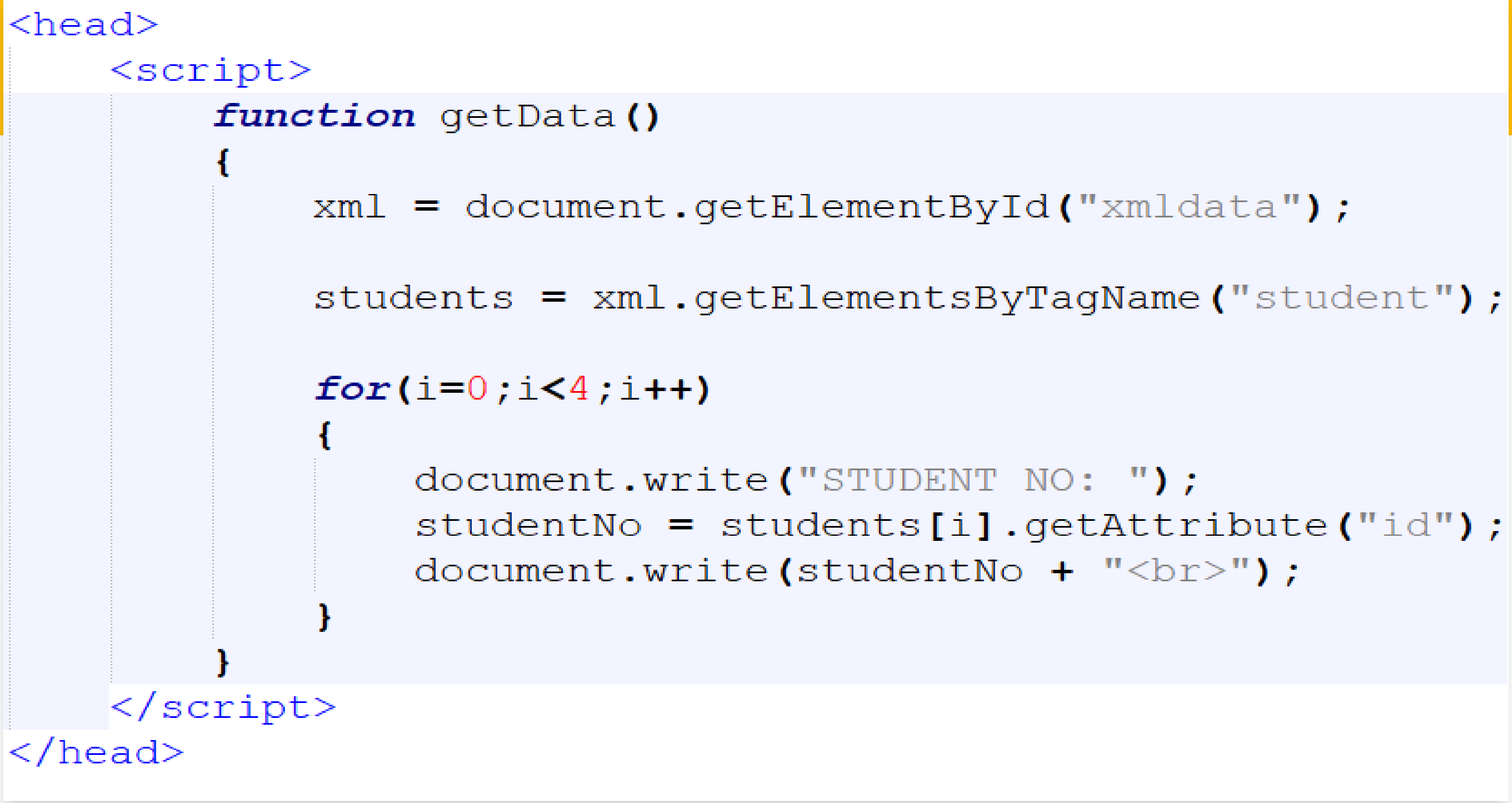


```
<head>
    <script>
        function getData()
        {
            xml = document.getElementById("xmldata");

            students = xml.getElementsByTagName("student");

            for(student of students)
            {
                document.write("STUDENT NO:  ");
                studentNo = student.getAttribute("id");
                document.write(studentNo + "<br>");
            }
        }
    </script>
</head>
```

STEP 2A: CREATE JAVASCRIPT FUNCTION

- Create a JavaScript function that is set to manipulate the XML data in the HTML.

NOTE: JavaScript could be internal or external.

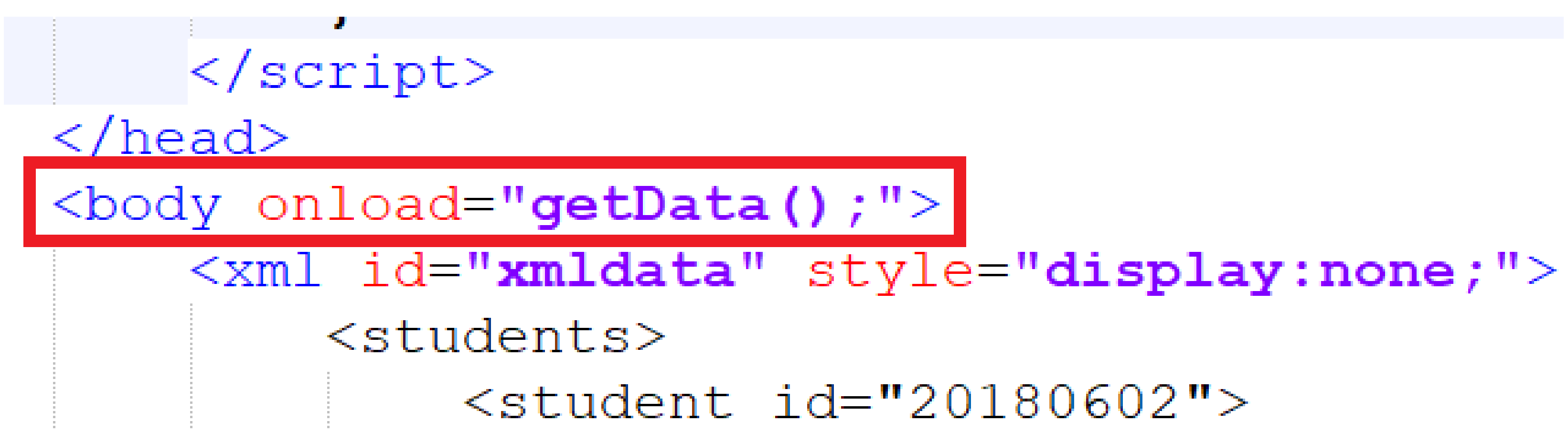


```
<head>
    <script>
        function getData()
        {
            xml = document.getElementById("xmldata");

            students = xml.getElementsByTagName("student");

            for(i=0;i<4;i++)
            {
                document.write("STUDENT NO:  ");
                studentNo = students[i].getAttribute("id");
                document.write(studentNo + "<br>");
            }
        }
    </script>
</head>
```

STEP 2B: CREATE JAVASCRIPT FUNCTION

- Create a JavaScript function that is set to manipulate the XML data in the HTML.

NOTE: JavaScript could be internal or external.



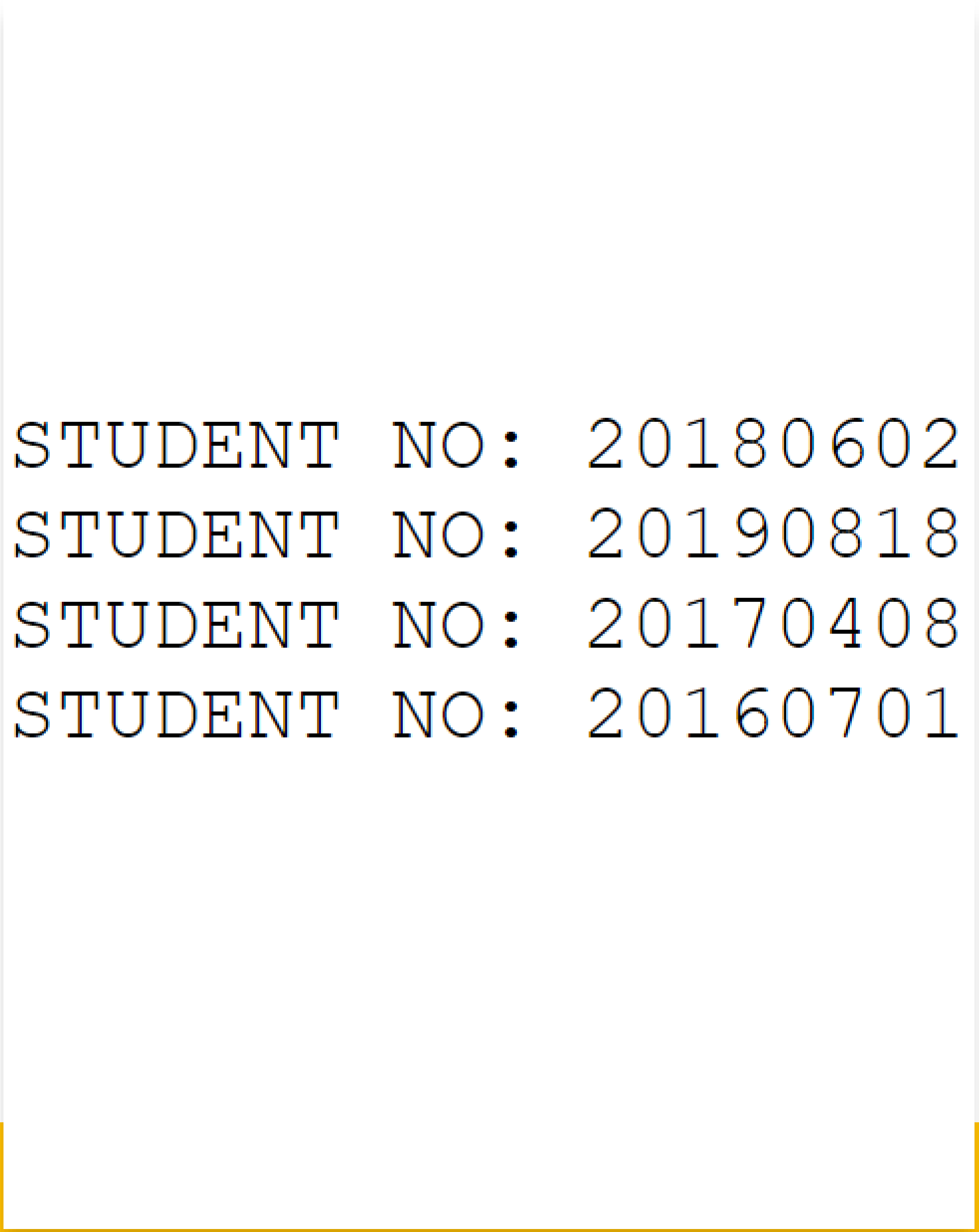
```
        ;
    </script>
</head>
<body onload="getData();">
    <xml id="xmldata" style="display:none;">
        <students>
            <student id="20180602">
```

STEP 3: TRIGGER EVENT TO ACCESS XML DATA

- Add an event to any tags on your HTML, except for the <xml> tag.
- onload event is added to the <body> tag to manipulate the XML data.
- Set the value of the onload event to getData(), the function created in JavaScript.

OUTPUT

- After setting the onload event, run the code using any browser.



```
STUDENT NO: 20180602
STUDENT NO: 20190818
STUDENT NO: 20170408
STUDENT NO: 20160701
```

```
LIST OF STUDENTS

NAME: John Dela Cruz
BIRTHDAY: January 1, 1998
COURSE: BSIT

NAME: Jane Santos
BIRTHDAY: June 12, 1999
COURSE: BSIT

NAME: Ryan Reyes
BIRTHDAY: May 8, 1997
COURSE: BSIT

NAME: Carlo Ople
BIRTHDAY: July 1, 1996
COURSE: BSIT
```

END OF LESSON