**Registration Number: IT22178640**

**Module: IT3031 - Database Systems and Data Driven Applications**

**Practical: 06**

**--Below Practical was done using SQL Server Management Studio.**

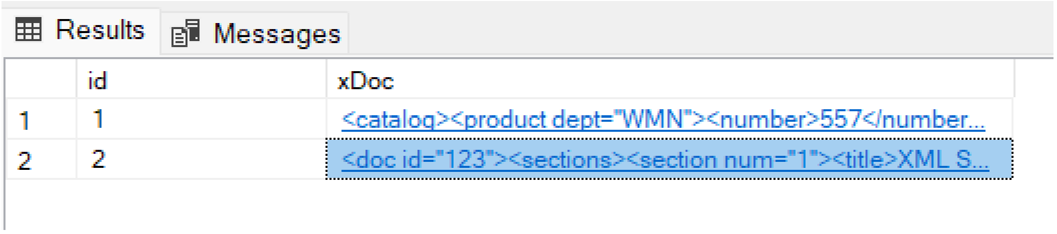
1. **Create the following table with xml type.**

```
-- Example: Untyped XML Column in Table

CREATE TABLE AdminDocs (

id int primary key,

xDoc Xml not null

)


-- Example: Inserting Data into Untyped XML Column

INSERT INTO AdminDocs VALUES (

 1,

 '<catalog>

   <product dept="WMN">

     <number>557</number>

     <name language="en">Fleece Pullover</name>

     <colorChoices>navy black</colorChoices>

   </product>

   <product dept="ACC">

     <number>563</number>

     <name language="en">Floppy Sun Hat</name>

   </product>

   <product dept="ACC">

     <number>443</number>
```

```
      <name language="en">Deluxe Travel Bag</name>
    </product>
    <product dept="MEN">
      <number>784</number>
      <name language="en">Cotton Dress Shirt</name>
      <colorChoices>white gray</colorChoices>
      <desc>Our <i>favorite</i> shirt!</desc>
    </product>
  </catalog>'
);

INSERT INTO AdminDocs VALUES (2,
'<doc id="123">
 <sections>
 <section num="1"><title>XML Schema</title></section>
2 of 4
 <section num="3"><title>Benefits</title></section>
 <section num="4"><title>Features</title></section>
 </sections>
</doc>'
);
```

SELECT * FROM AdminDocs

**OUTPUT:**



|  | id | xDoc |
|---|---|---|
| 1 | 1 | <catalog><product dept="WMN"><number>557</number... |
| 2 | 2 | <doc id="123"><sections><section num="1"><title>XML S... |

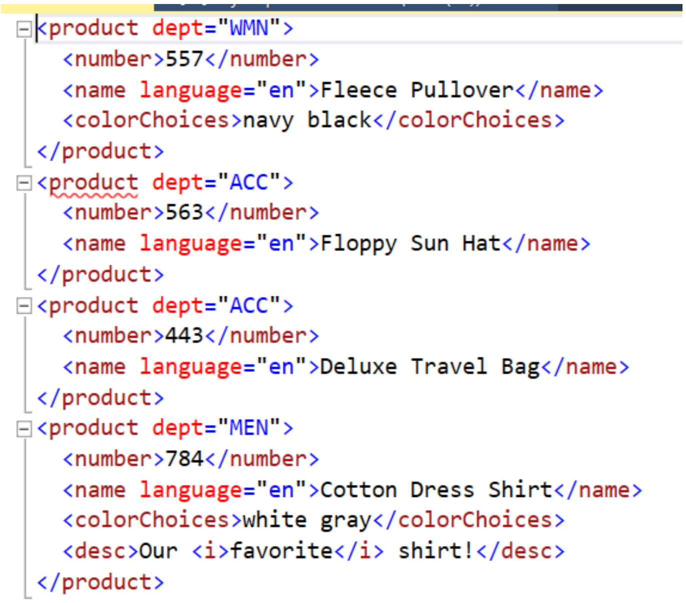
## 2. Practice the following XPath expressions

**-- Example: Using Query() Method**

SELECT id, xDoc.query('/catalog/product')

FROM AdminDocs

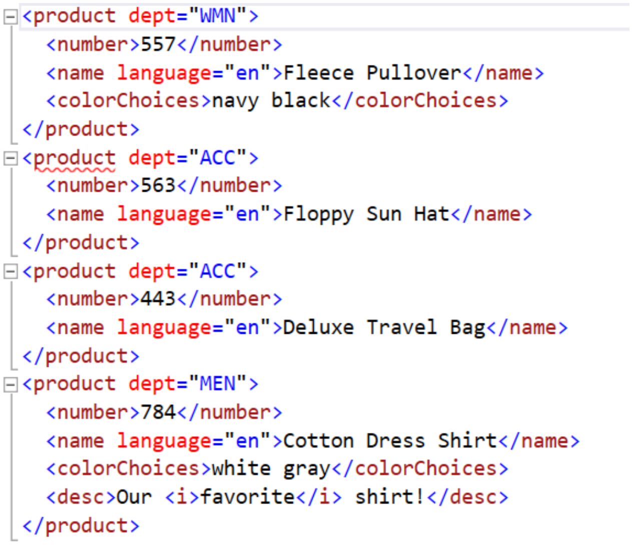
**OUTPUT: Retreives all the products**



```
<product dept="WMN">
  <number>557</number>
  <name language="en">Fleece Pullover</name>
  <colorChoices>navy black</colorChoices>
</product>
<product dept="ACC">
  <number>563</number>
  <name language="en">Floppy Sun Hat</name>
</product>
<product dept="ACC">
  <number>443</number>
  <name language="en">Deluxe Travel Bag</name>
</product>
<product dept="MEN">
  <number>784</number>
  <name language="en">Cotton Dress Shirt</name>
  <colorChoices>white gray</colorChoices>
  <desc>Our <i>favorite</i> shirt!</desc>
</product>
```

SELECT id, xDoc.query('//product')
FROM AdminDocs

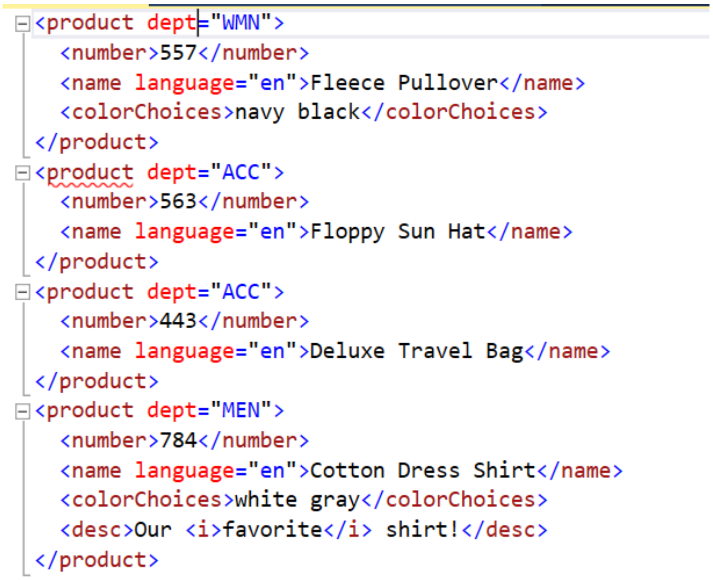
**OUTPUT:**



```
<product dept="WMN">
  <number>557</number>
  <name language="en">Fleece Pullover</name>
  <colorChoices>navy black</colorChoices>
</product>
<product dept="ACC">
  <number>563</number>
  <name language="en">Floppy Sun Hat</name>
</product>
<product dept="ACC">
  <number>443</number>
  <name language="en">Deluxe Travel Bag</name>
</product>
<product dept="MEN">
  <number>784</number>
  <name language="en">Cotton Dress Shirt</name>
  <colorChoices>white gray</colorChoices>
  <desc>Our <i>favorite</i> shirt!</desc>
</product>
```

SELECT id, xDoc.query('/*/product')
FROM AdminDocs

**OUTPUT:**

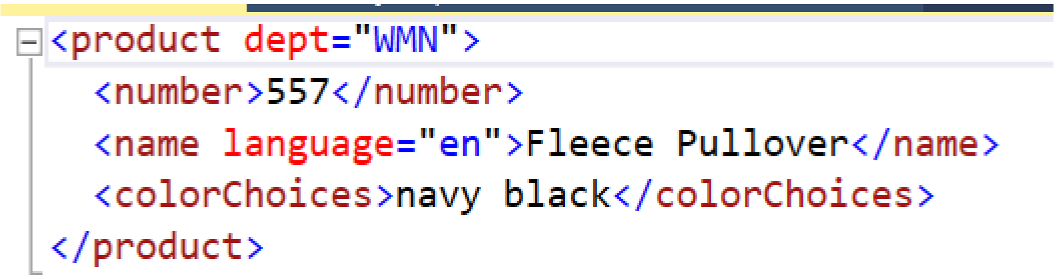


```
<product dept="WMN">
  <number>557</number>
  <name language="en">Fleece Pullover</name>
  <colorChoices>navy black</colorChoices>
</product>
<product dept="ACC">
  <number>563</number>
  <name language="en">Floppy Sun Hat</name>
</product>
<product dept="ACC">
  <number>443</number>
  <name language="en">Deluxe Travel Bag</name>
</product>
<product dept="MEN">
  <number>784</number>
  <name language="en">Cotton Dress Shirt</name>
  <colorChoices>white gray</colorChoices>
  <desc>Our <i>favorite</i> shirt!</desc>
</product>
```

SELECT id, xDoc.query('/*/product[@dept="WMN"]')

FROM  AdminDocs

**OUTPUT:**

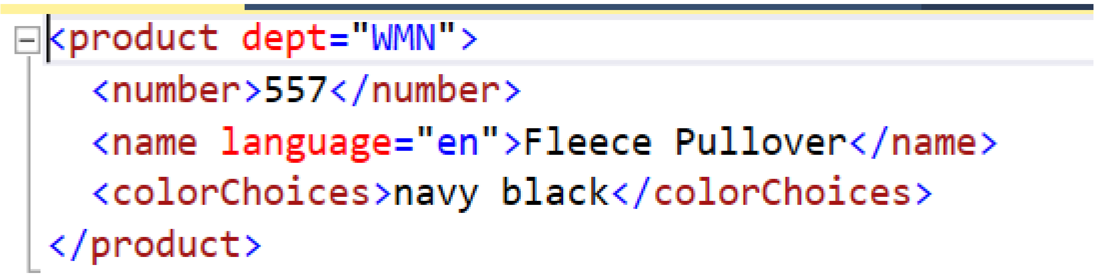


```
<product dept="WMN">
  <number>557</number>
  <name language="en">Fleece Pullover</name>
  <colorChoices>navy black</colorChoices>
</product>
```

SELECT id, xDoc.query('/*/child::product[attribute::dept="WMN"]')

FROM  AdminDocs

**OUTPUT:**

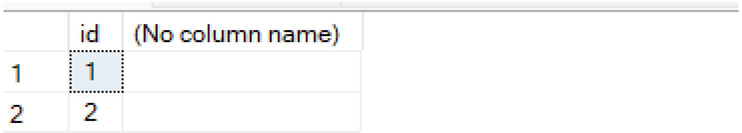


```
<product dept="WMN">
  <number>557</number>
  <name language="en">Fleece Pullover</name>
  <colorChoices>navy black</colorChoices>
</product>
```

SELECT id, xDoc.query('//product[dept="WMN"]')

FROM  AdminDocs

**OUTPUT**:

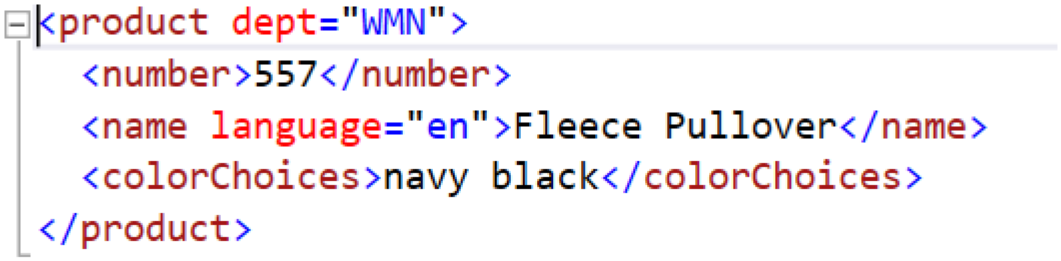


|   | id | (No column name) |
|---|----|------------------|
| 1 | 1 |  |
| 2 | 2 |  |

SELECT id, xDoc.query('descendant-or-self::product[attribute::dept="WMN"]')

FROM   AdminDocs

**OUTPUT:**



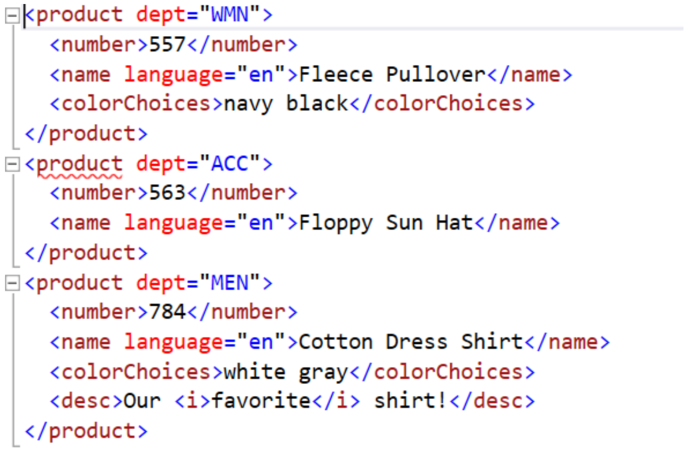
```
<product dept="WMN">
  <number>557</number>
  <name language="en">Fleece Pullover</name>
  <colorChoices>navy black</colorChoices>
</product>
```

SELECT id, xDoc.query('//product[number > 500]')

FROM   AdminDocs

where id=1

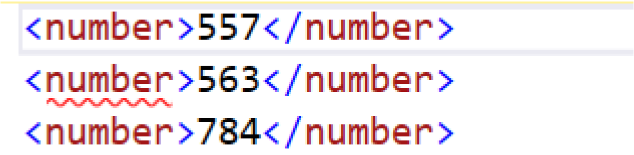
**OUTPUT:**



```
<product dept="WMN">
  <number>557</number>
  <name language="en">Fleece Pullover</name>
  <colorChoices>navy black</colorChoices>
</product>
<product dept="ACC">
  <number>563</number>
  <name language="en">Floppy Sun Hat</name>
</product>
<product dept="MEN">
  <number>784</number>
  <name language="en">Cotton Dress Shirt</name>
  <colorChoices>white gray</colorChoices>
  <desc>Our <i>favorite</i> shirt!</desc>
</product>
```

```
SELECT id, xDoc.query('//product/number[. gt 500]')

FROM   AdminDocs

where id=1
```

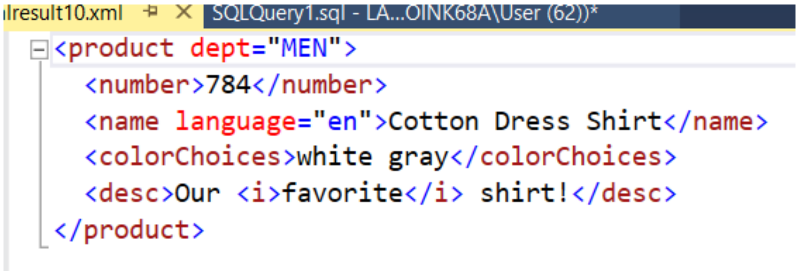
**OUTPUT:**



```
<number>557</number>
<number>563</number>
<number>784</number>
```

```
SELECT id, xDoc.query('/catalog/product[4]')

FROM   AdminDocs

where id=1
```

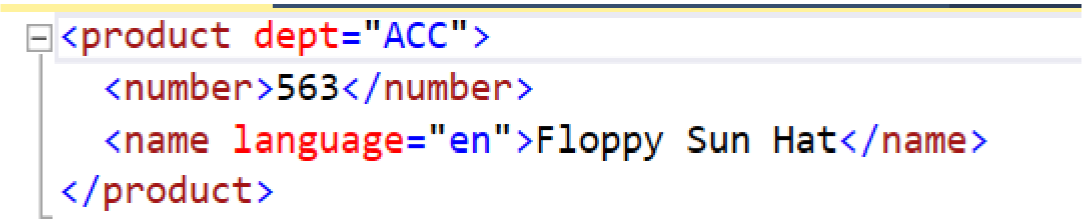
**OUTPUT:**



```
<product dept="MEN">
  <number>784</number>
  <name language="en">Cotton Dress Shirt</name>
  <colorChoices>white gray</colorChoices>
  <desc>Our <i>favorite</i> shirt!</desc>
</product>
```

```
 SELECT id, xDoc.query('//product[number > 500][@dept="ACC"]')

FROM   AdminDocs

where id=1
```

**OUTPUT:**



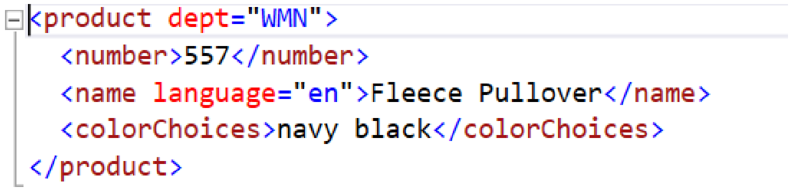
```
<product dept="ACC">
  <number>563</number>
  <name language="en">Floppy Sun Hat</name>
</product>
```

SELECT id, xDoc.query('//product[number > 500][1]')

FROM   AdminDocs

where id=1

**OUTPUT:**

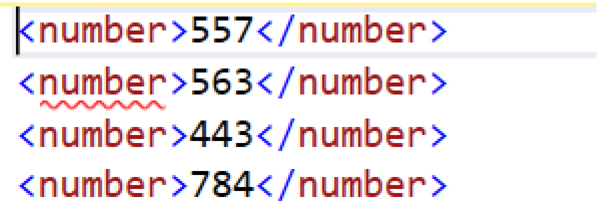


```
<product dept="WMN">
  <number>557</number>
  <name language="en">Fleece Pullover</name>
  <colorChoices>navy black</colorChoices>
</product>
```

3. **Practice the following XQuery expressions.**

```
SELECT xDoc.query(' for $prod in //product
  let $x:=$prod/number
  return $x')
FROM   AdminDocs
where id=1
```

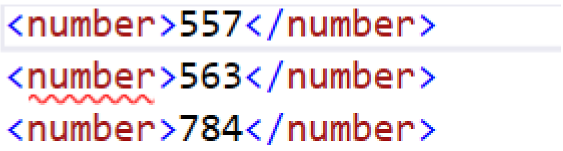
**OUTPUT:**



```
<number>557</number>
<number>563</number>
<number>443</number>
<number>784</number>
```

```
SELECT xDoc.query(' for $prod in //product
  let $x:=$prod/number
  where $x>500
  return $x')
FROM   AdminDocs
where id=1
```

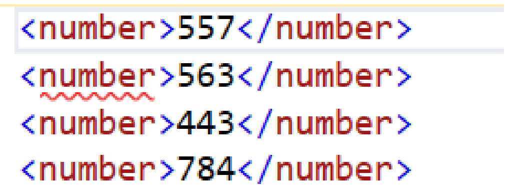
**OUTPUT:**



```
<number>557</number>
<number>563</number>
<number>784</number>
```

```
SELECT xDoc.query(' for $prod in //product
 let $x:=$prod/number
 return $x')
FROM   AdminDocs
where id=1
```

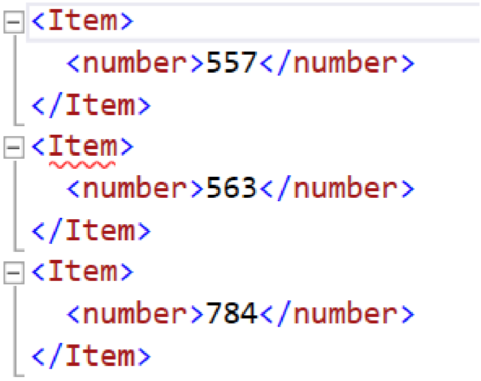
**OUTPUT:**



```
<number>557</number>
<number>563</number>
<number>443</number>
<number>784</number>
```

```
SELECT xDoc.query(' for $prod in //product
  let $x:=$prod/number
  where $x>500
  return (<Item>{$x}</Item>)')
FROM  AdminDocs
where  id=1
```

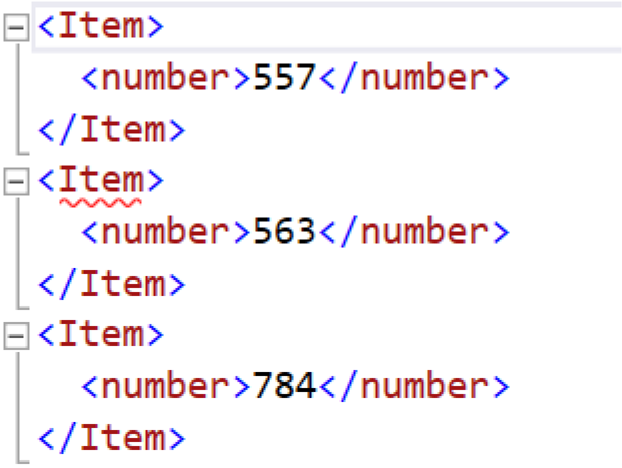
**OUTPUT:**



```
<Item>
  <number>557</number>
</Item>
<Item>
  <number>563</number>
</Item>
<Item>
  <number>784</number>
</Item>
```

```
SELECT xDoc.query(' for $prod in //product[number > 500]
  let $x:=$prod/number
  return (<Item>{$x}</Item>)')
FROM  AdminDocs
where  id=1
```

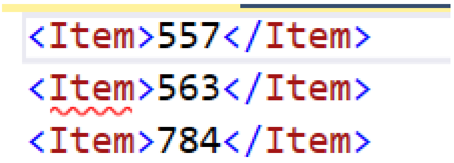
**OUTPUT:**



```
<Item>
  <number>557</number>
</Item>
<Item>
  <number>563</number>
</Item>
<Item>
  <number>784</number>
</Item>
```

```
SELECT xDoc.query(' for $prod in //product

let $x:=$prod/number

where $x>500

return (<Item>{data($x)}</Item>)')

FROM  AdminDocs

where  id=1
```

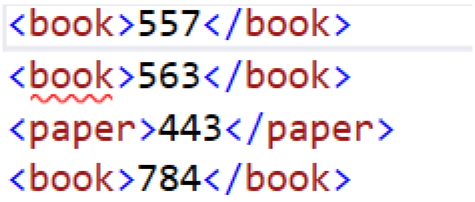
**OUTPUT:**



```
<Item>557</Item>
<Item>563</Item>
<Item>784</Item>
```

```
SELECT xDoc.query(' for $prod in //product

let $x:=$prod/number

return  if  ($x>500)

then <book>{data($x)}</book>

else <paper>{data($x)}</paper>')

FROM  AdminDocs

where  id=1
```

**OUTPUT:**



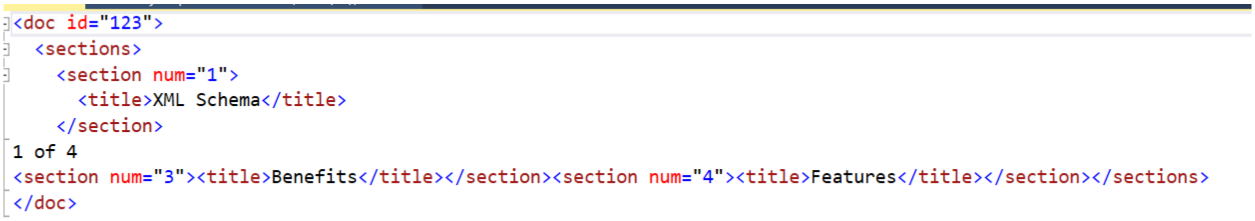
```
<book>557</book>
<book>563</book>
<paper>443</paper>
<book>784</book>
```

4. **Practice the following XML DML XQuery expressions.**

**--Example: Insertion of Subtree into XML Instances**

```
select *
from AdminDocs
where id=2
```

**OUTPUT:**

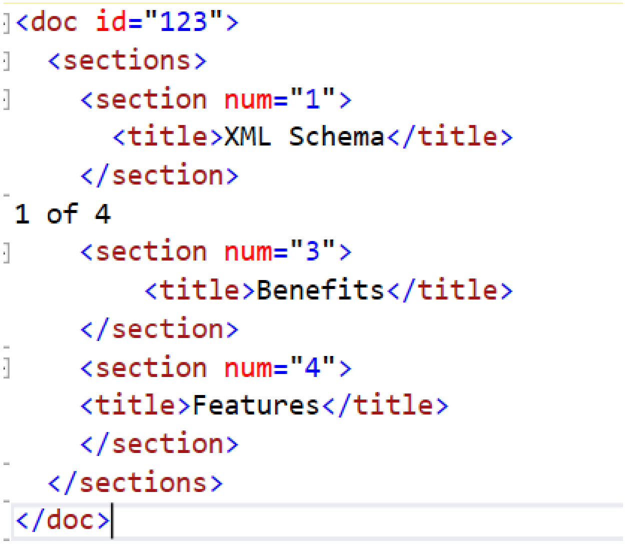


```
<doc id="123">
  <sections>
    <section num="1">
      <title>XML Schema</title>
    </section>
1 of 4
<section num="3"><title>Benefits</title></section><section num="4"><title>Features</title></section></sections>
</doc>
```

```
UPDATE AdminDocs
SET xDoc.modify('
                    insert
                    <section num="2">
                    <title>Background</title>
                    </section>
                    after (/doc//section[@num=1])[1]')
```

```
UPDATE AdminDocs
SET xDoc.modify(' delete //section[@num="2"]')
```

**OUTPUT AFTER DELETION:**



```
<doc id="123">
  <sections>
    <section num="1">
      <title>XML Schema</title>
    </section>
1 of 4
    <section num="3">
        <title>Benefits</title>
    </section>
    <section num="4">
    <title>Features</title>
    </section>
  </sections>
</doc>
```