



# Database Systems

B.Sc. (Hons) in IT

## Laboratory Worksheet 06

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### Practical 6 – XML

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>
    <section num="3"><title>Benefits</title></section>
    <section num="4"><title>Features</title></section>
    </sections>
</doc>')

```

```

select *
from AdminDocs

```

## 2. Practice the following XPath expressions

-- Example: Using Query() Method

```

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

```

```

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

```

```

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

```

```

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

```

```

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

```

```

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

```

```

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

```

```

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

```

```

SELECT id, xDoc.query('//product/number[. gt 500]')
FROM AdminDocs
where id=1

```

```

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

```

```
FROM AdminDocs
where id=1
```

```
SELECT id, xDoc.query('//product[number > 500][@dept="ACC"]')
FROM AdminDocs
where id=1
```

```
SELECT id, xDoc.query('//product[number > 500][1]')
FROM AdminDocs
where id=1
```

3. Practice the following XQuery expressions.

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

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

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

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

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

```

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

```

```

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

```

4. Practice the following XML DML XQuery expressions.

--Example: Insertion of Subtree into XML Instances

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

```

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"]')

```