

## Tutorial 4 – XML Databases

Consider the following XML document that contains information on a collection of books.

```
'<?xml version="1.0" encoding="UTF-8"?>
<planes>
  <plane>
    <year> 1977 </year>
    <make> Cessna </make>
    <model> Skyhawk </model>
    <color> Light blue and white </color>
  </plane>
  <plane>
    <year> 1975 </year>
    <make> Piper </make>
    <model> Apache </model>
    <color> White </color>
  </plane>
  <plane>
    <year> 1960 </year>
    <make> Cessna </make>
    <model> Centurian </model>
    <color> Yellow and white </color>
  </plane>
  <plane>
    <year> 1956 </year>
    <make> Piper </make>
    <model> Tripacer </model>
    <color> Blue </color>
  </plane>
</planes>')
```

Note that the above XML document stored in *Planes(xText XML)* table created in MS SQL Server and it contains an only single record.

- a. Write an XQuery (FLWOR) expression to retrieve the models made before 1970. Produce the following output.

```
<oldPlanes>
  <make> Cessna </make>
  <model> Centurian </model>
  <make> Piper </make>
  <model> Tripacer </model>
</oldPlanes>
```

- b. What would be the output of the following XQuery expression?

```
SELECT xText.query (' let $planes := /planes/plane
return <results>
```

```

{
  for $x in $planes
  where $x/year >= 1970
  order by ($x/year)[1]
  return ($x/make, $x/model,$x/year )
}
</results>
')
FROM planes

```

- c. Write an XQuery expression to extract data from books XML document and create an HTML table containing the model of all the planes along with their color. Use the following HTML tags in your answer.

```

<table>
  <tr>
    <th>Model</th>
    <th>Color</th>
  </tr>
  ... ..
  <tr>
    <td> Tripacer </td>
    <td> Blue </td>
  </tr>
</table>

```