WEB STACK DEVELOPMENT

LAB-5

Summary

I have created 3 files:
   -travels.xml
   -travels.xsd
   -transform.xsl

The travels.XML file contains travel booking details such as place of travel, flight details, bus details, hotel booking ,etc. The root element <travel> includes multiple <loc> elements and <hotels> elements. <loc > contains <destination>, <flight> and <bus>. <hotels> include different <hotel> entries.
The transform.xsl file is used to transform the XML data in travels.xml into a user friendly format. The XML data has been displayed in a table format with proper headings. The page includes navigation bar. The page shows user travel booking details.
The travles.xsd file validates the xml data. The file uses a namespace "http://abc.com/trav". It defines the structure and data types of XML file elements. Restriction base has been used to limit the value of rating between 0 to 5.

Purpose of XSL
XSL allows us to transform XML documents into Html structure. We can use it to extract data from an XML document and convert it into a desired format.

Purpose of XSD
XSD defines structure and datatypes of XML documents. It ensures that data adheres to specific formats such as element, attribute, order, occurrence, data types, etc. Thus it helps to validate the XML documents. XSD helps to maintain the integrity of the data.

transform.xsl

```xml
<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet xmlns:xsl="http://www.w3.org/1999/XSL/Transform" version="1.0"
                xmlns:trav="www.abc.com/trav">

  <!-- Root template -->
  <xsl:template match="/">
    <html>
      <head>
        <title>Travel Booking Details</title>
        <style>
        body {
          font-family: Arial, sans-serif;
          margin: 20px;
        }
        .main {
          margin-top: 98px;
        }
        h1 {
          text-align: center;
          color: #f11f1f;
        }
        h2 {
          color: #045c7d;
        }
        table {
          width: 100%;
          border-collapse: collapse;
          margin: 20px 0;
        }
        th, td {
          border: 1px solid #ddd;
          padding: 8px;
          text-align: left;
        }
        td:hover { background-color: #cff6f0; }
        th:hover { background-color: #b1fcb5; }

        @media (max-width: 768px) {
          .main {
            margin-top: 90px;
          }
          h1 {
            font-size: 1.5rem;
          }
        }
        </style>

        <link
  href="https://cdn.jsdelivr.net/npm/bootstrap@5.2.3/dist/css/bootstrap.min.css"
  rel="stylesheet"
  integrity="sha384-rbsA2VBKQhggwzxH7pPCaAqO46MgnOM80zW1RWuH61DGLwZJEdK2Kadq2F9CUG65"
  crossorigin="anonymous"
/>
<script
  src="https://cdn.jsdelivr.net/npm/@popperjs/core@2.11.6/dist/umd/popper.min.js"
  integrity="sha384-oBqDVmMz9ATKxIep9tiCxS/Z9fNfEXiDAYTujMAeBAsjFuCZSmKbSSUnQlmh/jp3"
  crossorigin="anonymous"
></script>
<script
  src="https://cdn.jsdelivr.net/npm/bootstrap@5.2.3/dist/js/bootstrap.min.js"
  integrity="sha384-cuYeSxntonz0PPNlHhBs68uyIAVpIIOZZ5JqeqvYYIcEL727kskC66kF92t6Xl2V"
  crossorigin="anonymous"
></script>
      </head>
      <body>

        <nav class="navbar navbar-expand-sm bg-success fixed-top">
          <div class="container">
            <a href="#" class="navbar-brand text-dark display-5 fw-bold p-4">TraveleX</a>
            <button class="navbar-toggler ms-auto" type="button" data-bs-toggle="collapse" data-bs-target="#n_bar"
            aria-controls="navbarNavAltMarkup" aria-label="Toggle navigation">
                <span class="navbar-toggler-icon"></span>
            </button>
            <div class="collapse navbar-collapse" id="n_bar">
                <ul class="navbar-nav">
                    <li class="nav-item active"><a class="nav-link text-dark" href="transform.xsl">Booking</a></li>
                    <li class="nav-item"><a class="nav-link text-dark" href="#">Home</a></li>
                    <li class="nav-item"><a class="nav-link text-dark" href="#">Book</a></li>
                    <li class="nav-item"><a class="nav-link text-dark" href="#">Login</a></li>
                    <li class="nav-item"><a class="nav-link text-dark" href="#">SignUp</a></li>
                    <li class="nav-item"><a class="nav-link text-dark" href="#">About</a></li>
                </ul>
            </div>
          </div>
        </nav>
        <div class="main">
          <h1> Your Travel Booking Information</h1>
          <h2>Destination-Flight</h2>
```

```xml
        <table>
          <tr>
            <th>City</th>
            <th>Country</th>
            <th>Airline</th>
            <th>Departure Date</th>
            <th>Arrival Date</th>
            <th>Amount</th>
            <th>Stay(Hotel)</th>
            <th>Hotel Price</th>
          </tr>
          <xsl:for-each select="travel/loc">
            <tr>
              <td><xsl:value-of select="destination/city"/></td>
              <td><xsl:value-of select="destination/country"/></td>
              <td><xsl:value-of select="flight/airline"/></td>
            <td><xsl:value-of select="flight/departure"/></td>
            <td><xsl:value-of select="flight/arrival"/></td>
            <td><xsl:value-of select="flight/amount"/></td>
            <td><xsl:value-of select="destination/hotel"/></td>
            <td><xsl:value-of select="destination/hotel_rent"/></td>
            </tr>
          </xsl:for-each>
      </table>
        <h2>Hotel</h2>
        <table>
          <tr>
            <th>Name</th>
            <th>Stars</th>
            <th>Price (per night)</th>
          </tr>
```

```xml
        <h2>Hotel</h2>
        <table>
          <tr>
            <th>Name</th>
            <th>Stars</th>
            <th>Price (per night)</th>
          </tr>
            <tr>
              <td><xsl:value-of select="hotel/name"/></td>
              <td><xsl:value-of select="hotel/stars"/></td>
              <td><xsl:value-of select="hotel/price"/></td>
            </tr>
        </table>
        <h2>Bus</h2>
        <table>
          <tr>
            <th>Boarding</th>
            <th>Departure Date</th>
            <th>Arrival Date</th>
            <th>Amount</th>
            <th>Dropping</th>
          </tr>
          <xsl:for-each select="travel/loc">
            <tr>
              <td><xsl:value-of select="bus/boarding"/></td>
              <td><xsl:value-of select="bus/departure"/></td>
              <td><xsl:value-of select="bus/arrival"/></td>
              <td><xsl:value-of select="bus/amount"/></td>
              <td><xsl:value-of select="bus/dropping"/></td>
            </tr>
          </xsl:for-each>
        </table>
```

```xml
        <h2>Bus</h2>
        <table>
          <tr>
            <th>Boarding</th>
            <th>Departure Date</th>
            <th>Arrival Date</th>
            <th>Amount</th>
            <th>Dropping</th>
          </tr>
          <xsl:for-each select="travel/loc">
            <tr>
              <td><xsl:value-of select="bus/boarding"/></td>
              <td><xsl:value-of select="bus/departure"/></td>
              <td><xsl:value-of select="bus/arrival"/></td>
              <td><xsl:value-of select="bus/amount"/></td>
              <td><xsl:value-of select="bus/dropping"/></td>
            </tr>
          </xsl:for-each>
        </table>
      </div>
      </body>
    </html>
  </xsl:template>

</xsl:stylesheet>
```

Test Validation

1.

```xml
    </loc>
    <hotels>
      <hotel>
        <name>Grand Central Hotel</name>
        <stars>4</stars>
        <price>Abcd</price>
      </hotel>
    </hotels>
  </travel>
```

Here, price is of type decimal, so it generates error on giving string values.

2.

```xml
  <hotels>
    <hotel>
      <name>Grand Central Hotel</name>
      <stars>10</stars>
      <price>1000</price>
    </hotel>
  </hotels>
</travel>
```

Here, it shows error as stars element have restriction and can have values between 0 to 5 only.

3.

```xml
  <destination id="2">
    <city>Paris</city>
    <country>France</country>
    <hotel>Shuanza</hotel>
    <hotel_rent>16500</hotel_rent>
  </destination>
```

Here, the error is because I have set the element country to take values "USA" and "India" only.