| Course Title: | Fundamental of Data Engineering |
|---|---|
| Course Number: | COE848 |
| Semester/Year (e.g.F2016) | W2022 |

| Instructor: | Faezeh Ensan |
|---|---|

| Assignment/Lab Number: | 6 |
|---|---|
| Assignment/Lab Title: | Semi-structured data |

| Submission Date  : | April. 11. 2022 |
|---|---|
| Due Date: | April. 11.2022 |

| Student LAST Name | Student FIRST Name | Student Number | Section | Signature* |
|---|---|---|---|---|
| Chen | Rick | 500909131 | 02 | |
| | | | | |
| | | | | |

## XML data to validate

```
241    <sysReqGame>
242        <sysReqGameID>4</sysReqGameID>
243        <videoGameID>4</videoGameID>
244        <sysReqID>2</sysReqID>
245    </sysReqGame>
246
247    <sysReqGame>
248        <sysReqGameID>5</sysReqGameID>
249        <videoGameID>5</videoGameID>
250        <sysReqID>4</sysReqID>
251    </sysReqGame>
252
253 </videoGameData>
```

## XML schema (XSD) data

```
125                <xs:element name="OS" type="xs:string"/>
126            </xs:sequence>
127        </xs:complexType>
128    </xs:element>
129
130    <xs:element name="characterGame">
131        <xs:complexType>
132            <xs:sequence>
133                <xs:element name="characterGameID" type="xs:integer"/>
134                <xs:element name="videoGameID" type="xs:integer"/>
135                <xs:element name="charID" type="xs:integer"/>
136            </xs:sequence>
137        </xs:complexType>
```

Validate

Document Valid

Query1.

# Video games played on PC

| video game |
| --- |
| Dark Soul 3 |
| Sekiro |
| Total War: Three Kingdom |

```html
<h2>Video games played on PC</h2>
<table border="1">
    <tr bgcolor="#9acd32">
        <th style="text-align:left">video game</th>
    </tr>
    <xsl:for-each select="videoGameData/VideoGame[platform = 'PC']">
        <tr>
            <td><xsl:value-of select="gameName"/></td>
        </tr>
    </xsl:for-each>
</table>
```

Query2.

# The video game with ARPG type

| video game |
|---|
| Dark Soul 3 |
| NieR: Automata |

```
<h2>The video game with ARPG type</h2>
<table border="1">
    <tr bgcolor="#9acd32">
        <th>video game</th>
    </tr>
    <xsl:for-each select="videoGameData/VideoGame">
        <tr>
        <xsl:variable name="tempGameName" select="gameName"/>
        <xsl:variable name="tempGenreID" select="genreID"/>
        <xsl:variable name="tempCharGame" select="//videoGameData/genre[type = 'ARPG' and genreID = $tempGenreID] " />

        <xsl:if test="$tempCharGame">
            <td><xsl:value-of select="gameName"/></td>
        </xsl:if>
        </tr>
    </xsl:for-each>
</table>
```

Query3.

**All the characters in the the database**

| Character | Best line |
|---|---|
| Siegward | Yhorm, old friend. I, Siegward of the Knights of Catarina, have come to fulfill my promise. Let the sun shine upon this Lord of Cinder! |
| Patches | Every age, it seems, is tainted by the greed of men. Rubbish, to one such as I, devoid of all worldly wants! Hmmm, I dunno, maybe it's just the way we are. I'll stick you in my prayers. A fine dark soul, to you.. |
| Kroos | Kokodayo |
| Isshin Ashina | Hesitation is defeat |
| Pod 153 | Everything that lives is designed to end. They are perpetually trapped in a never-ending spiral of life and death. However, life is all about the struggle within this cycle. That is what `we` believe. |

```
<h2>All the characters in the the database</h2>
<table border="1">
    <tr bgcolor="#9acd32">
        <th style="text-align:left">Character</th>
        <th style="text-align:left">Best line</th>
    </tr>
    <xsl:for-each select="videoGameData/character">
        <tr>
            <td><xsl:value-of select="charName"/></td>
            <td><xsl:value-of select="bestLine"/></td>
        </tr>
    </xsl:for-each>
</table>
```

Query4.

# Release date of the all the video games

| Video game | Release date |
|---|---|
| Dark Soul 3 | 2016/04/12 |
| Arknights | 2019/05/01 |
| Sekiro | 2019/03/22 |
| NieR: Automata | 2017/03/17 |
| Total War: Three Kingdom | 2019/05/11 |

```html
<h2>Release date of the all the video games</h2>
<table border="1">
    <tr bgcolor="#9acd32">
        <th style="text-align:left">Video game</th>
        <th style="text-align:left">Release date</th>
    </tr>
    <xsl:for-each select="videoGameData/VideoGame">
        <tr>
            <td><xsl:value-of select="gameName"/></td>
            <td><xsl:value-of select="releaseDate"/></td>
        </tr>
    </xsl:for-each>
</table>
```

Query5.

# Most expensive game in the database

| Video game | Price |
|---|---|
| Arknights | 0 |
| NieR: Automata | 54 |
| Dark Soul 3 | 66 |
| Sekiro | 80 |
| Total War: Three Kingdom | 80 |

```
<h2>Most expensive game in the database</h2>
<table border="1">
    <tr bgcolor="#9acd32">
        <th style="text-align:left">Video game</th>
        <th style="text-align:left">Price</th>
    </tr>
    <xsl:for-each select="videoGameData/VideoGame">
        <xsl:sort select="price"/>
        <tr>
            <td><xsl:value-of select="gameName"/></td>
            <td><xsl:value-of select="price"/></td>
        </tr>
    </xsl:for-each>
</table>
```