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College ID: NP01CP4S210210

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I confirm that I understand my coursework needs to be submitted online via Google Classroom under the relevant module page before the deadline in order for my assignment to be accepted and marked. I am fully aware that late submissions will be treated as non-submission and a marks of zero will be awarded.

Abstract

The coursework is asked to design a beautiful catalog for a gift card shop business that include the valuable information regarding the gift cards. The coursework is completed with the use of XML, CSS and XSD. The valuable information about the gift cards voucher that are now accessible in the Gift Hub shop which is stored in XML data. The specific information of the shop includes of name, address, telephone number, website URL and logos with others attributes. The XML document is stored in the Catalog_20048959.xml file, CSS file is stored in Catalog_20048959.css whereas XSD file stored in Catalog_20048959.XSD.

Acknowledgement

I would like to thank my module leader Mr Durbha Sen for giving us this coursework and module tutor Mr Saroj Kumar Yadav who helped me for completing it. I would also like to thank my friends and teachers who helped me in difficulties of this course work.

The coursework is about creating the XML document and giving it design and style with the help of CSS. And the coursework is also about creating the XSD file.

Finally, I have completed this coursework by the hard work and patience. So, I want to thank to my module tutor who helped me while doing and completing it.

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1. Introduction

XML (Extensible Markup Language) is a hierarchical markup language which define data using opening and ending tags. XML is used to store and exchange data, and its utilized for everything from documents to graphics because of its enormous flexibility. The key advantage of xml is that it can be used to convert data from a software such as Microsoft SQL into XML and then share that XML with other programs and platforms. The fundamental factor that makes XML so powerful is its global acceptance. XML interfaces are used by many businesses for databases, programming, office applications, and mobile phones, among other things. This is because of its platform independence. The primary goal of XML design is to achieve simplicity and consistency, making it platform and programming language independent.

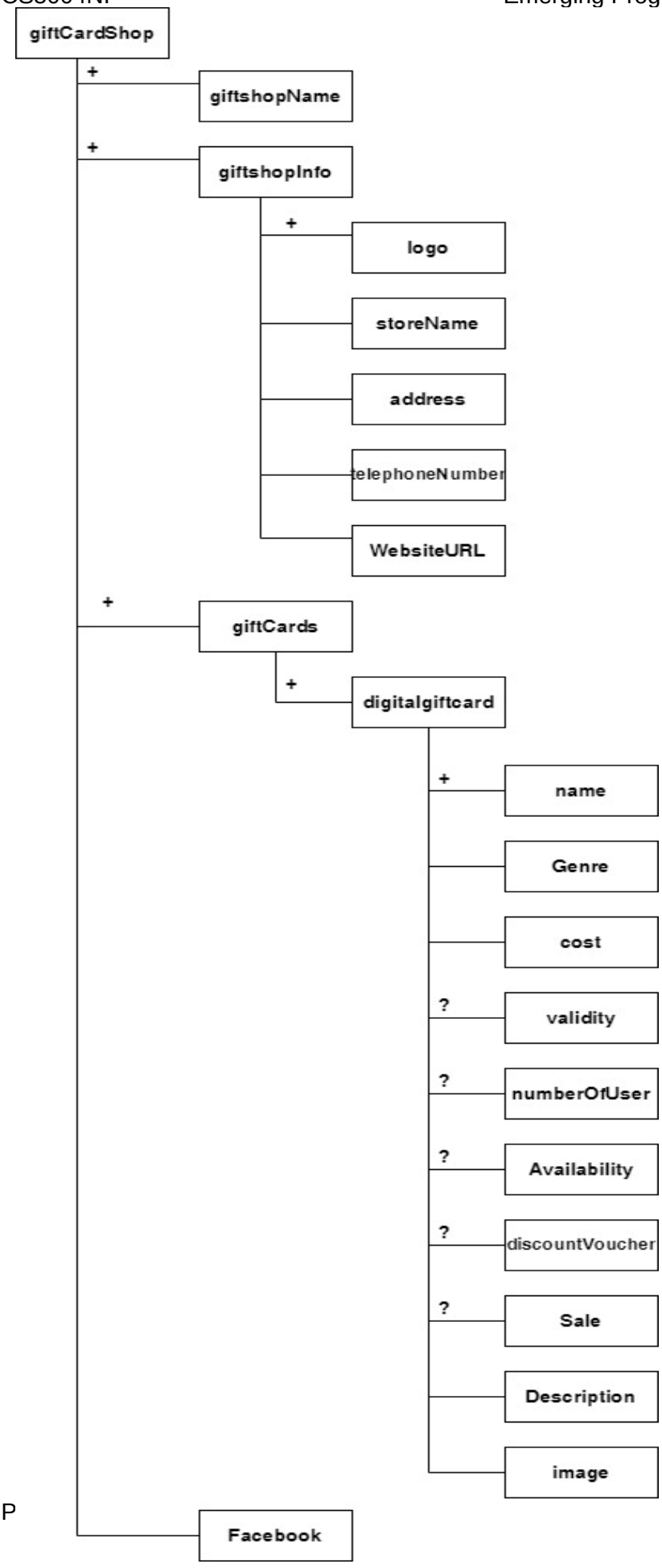
Cascading Style Sheets (CSS) is an acronym for Cascading Style Sheets. It is a language for describing the appearance of Web pages, such as colors, layout, and fonts, in order to make our web sites appealing to users. CSS is a style sheet language for the web. It can be used with any XML-based markup language and is not dependent on HTML. CSS enables Web designers to establish a consistent look across multiple pages of a website. Rather than setting the style of each table and text block within the HTML and XML of a page, commonly used styles can be described once in a CSS sheet.

The current standard schema language for all XML documents and data is the XML Schema Definition (XSD) language. The World Wide Web Consortium (W3C) released XSD in version 1.0 format on May 2, 2001. The structure and data types for XML documents using the XML Schema Definition Language (XSD). The elements, properties, and data types that comply to the World Wide Web Consortium are defined by an XML Schema (W3C) XML Schema is a type of XML document. Type definitions (simple Type and complex Type elements) as well as attribute and element declarations are all contained in the schema element.

2. XML

2.1. Tree Diagram

A tree diagram is a tool used in general mathematics, probability, and statistics to compute the number of alternative outcomes of an event or problem and to organize those potential outcomes. Tree diagrams, sometimes known as probability trees or decision trees, are extremely valuable in a variety of industries, including finance.


giftCardShop
+
giftshopName
+
giftshopInfo
+
logo
storeName
address
telephoneNumber
WebsiteURL
+
giftCards
+
digitalgiftcard
+
name
Genre
cost
?
validity
?
numberOfUser
?
Availability
?
discountVoucher
?
Sale
Description
image
Facebook

P

2.2. XML Content

```
1.  <?xml version="1.0" encoding="UTF-8"?>
2.
3.  <!-- Date: 02/05/2022
4.  Student Name: Pratiush Prasain
5.  London Met ID: 2008959 -->
6.
7.  <?xml-stylesheet type="text/css" href="Catalog_20048959.css"?>
8.
9.  <giftCardShop                    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:noNamespaceSchemaLocation="Catalog_20048959.xsd">
10.
11.
12.    <shopInfo shopID= "101">
13.       <shopname> Gift Hub </shopname>
14.       <logo id= "logo1"/>
15.       <storeName>The Gift Mart. </storeName>
16.       <address> Kathmandu, Nepal</address>
17.       <telephoneNumber>+977-9824536710</telephoneNumber>
18.       <websiteURL>www.patgiftcshop.com</websiteURL>
19.    </shopInfo>
20.
21.    <giftCards type= "Digital Card">
22.       <digitalgiftcard productID="001">
23.          <name> Name: Razer gold gift Card Voucher</name>
24.          <Genre> Genre: Game </Genre>
25.          <cost> Cost: $20 </cost>
26.          <validity> Validity: Use before 2 year of issue </validity>
27.          <numberOfUsers>User: 1 </numberOfUsers>
28.          <Availability> Availability: Yes </Availability>
29.          <discountvoucher> Discount: ---- </discountvoucher>
```

```
30.         <Sale> Sale: No  </Sale>
31.         <description> Description: Razer Gold is the unified virtual credits for gamers worldwide.
32.          Use Razer Gold to buy games and in-game content to get more bang for your buck—
    including
33.           getting rewarded with Razer Silver and exclusive game deals. You can make a purchase
    using
34.             Razer Gold in over 2,000 games and entertainment content. </description>
35.         <image id= "image1"/>
36.       </digitalgiftcard>
37.
38.       <digitalgiftcard productID="002">
39.         <name>Name: Ubisoft </name>
40.         <Genre> Genre: Game </Genre>
41.         <cost>Cost: $50 </cost>
42.         <validity>Validity: Use before 10 month of issue </validity>
43.         <!-- <numberOfUsers>User: 1</numberOfUsers> -->
44.         <Availability> Availability: Yes </Availability>
45.         <discountvoucher>Discount: 2% </discountvoucher>
46.         <Sale> Sale: Yes  </Sale>
47.         <description> Description: You can use your Ubisoft Wallet Funds to purchase credits in
    the game,
48.          but only if you own the game through Ubisoft. You can use the Ubisoft Store website to
    purchase credits,
49.           these will be available to you in your game, no matter what launcher you purchased the
    game from originally. </description>
50.         <image id= "image2"/>
51.       </digitalgiftcard>
52.
53.       <digitalgiftcard productID="003">
54.         <name>Name: Steam </name>
55.         <Genre> Genre: Game </Genre>
56.         <cost>Cost: $50 </cost>
57.         <validity>Validity: Use before 5 month of issue </validity>
```

```
58.         <numberOfUsers>User: 1</numberOfUsers>
59.         <Availability> Availability: Yes </Availability>
60.         <discountvoucher>Discount: ---- </discountvoucher>
61.         <Sale> Sale: No  </Sale>
62.         <description> Description: You can use your Steam Wallet Funds to purchase credits in
    the game,
63.         but only if you own the game through Steam. </description>
64.         <image id= "image3"/>
65.     </digitalgiftcard>
66.
67.     <digitalgiftcard productID="004">
68.         <name>Name: Origin </name>
69.         <Genre> Genre: Game </Genre>
70.         <cost>Cost: $10</cost>
71.         <validity>Validity: Use before 2 year of issue </validity>
72.         <numberOfUsers>User: 1</numberOfUsers>
73.         <Availability> Availability: Yes </Availability>
74.
75.         <Sale> Sale: Yes  </Sale>
76.         <description>Description: An EA Gift Card is a gift card for EA Desktop or Origin.
77.         You can gift one to someone so they can buy what they want, or you can use it to add
    funds to your EA Wallet.
78.          They're available in different amounts, depending on where you live. </description>
79.         <image id= "image4"/>
80.     </digitalgiftcard>
81.
82.     <digitalgiftcard productID="005">
83.         <name>Name: Apple </name>
84.         <Genre> Genre: E-Commerce </Genre>
85.         <cost>Cost: $50</cost>
86.         <validity>Validity: Use before 2 year of issue </validity>
87.         <!-- <numberOfUsers>User: 1</numberOfUsers> -->
88.         <Availability> Availability: Yes </Availability>
```

```
89.
90.         <Sale> Sale: No  </Sale>
91.         <description> Description: Redeem Apple Gift Cards or add money directly into your
    Apple Account Balance anytime.
92.          Apple Gift Cards are solely for the purchase of goods and services from the Apple Store,
    the Apple Store app,
93.          apple.com, the App Store, iTunes, Apple Music, Apple TV, Apple Books, and other
    Apple properties. </description>
94.         <image id= "image5"/>
95.       </digitalgiftcard>
96.
97.       <digitalgiftcard productID="006">
98.         <name>Name: Xbox Voucher </name>
99.         <Genre> Genre: Game </Genre>
100.          <cost>Cost: $20 </cost>
101.          <validity>Validity: Use before 2 year of issue </validity>
102.          <numberOfUsers>User: 1</numberOfUsers>
103.          <Availability> Availability: Not Available  </Availability>
104.          <discountvoucher>Discount: ---- </discountvoucher>
105.          <Sale> Sale: Yes  </Sale>
106.          <description> Description: With a Microsoft or Xbox gift card, you let the lucky
    recipient choose the gift they want.
107.           There are no fees or expiration dates, and either card can be used to buy: Subscriptions
    such as: Xbox Live Gold. </description>
108.          <image id= "image6"/>
109.       </digitalgiftcard>
110.
111.       <digitalgiftcard productID="007">
112.         <name>Name: Playstation Online Code </name>
113.         <Genre> Genre: Game </Genre>
114.         <cost>Cost: $20 </cost>
115.         <validity>Validity: Use before 2 year of issue </validity>
116.         <numberOfUsers>User: 1</numberOfUsers>
```

```
117.        <Availability> Availability: Yes </Availability>
118.        <discountvoucher>Discount: ---- </discountvoucher>
119.        <Sale> Sale: Yes  </Sale>
120.        <description> Description: A gift card you can use towards the purchase of whatever is
    sold on the PSN store. Movies, games etc.
121.         The 12 month membership is a subscription that gives you access to free monthly games
    and discounts throughout the length of your
122.         subscription on the PSN store.. </description>
123.        <image id= "image7"/>
124.    </digitalgiftcard>
125.
126.    <digitalgiftcard productID="008">
127.        <name>Name: FIFA</name>
128.        <Genre> Genre: Game </Genre>
129.        <cost>Cost: $15</cost>
130.        <validity>Validity: Use before 2 year of issue </validity>
131.        <numberOfUsers>User: 1</numberOfUsers>
132.        <Availability>Availability: Yes </Availability>
133.        <discountvoucher>Discount: ---- </discountvoucher>
134.        <Sale> Sale: Yes  </Sale>
135.        <description> Description: FIFA is a saga of football video games published annually
    by Electronic Arts under the EA Sports label.
136.         Like many other videogame companies, EA offers gift cards for FIFA. These are an
    option for any FIFA game lover. Here's how to get these cards,
137.          what they are for and their price. </description>
138.        <image id= "image8"/>
139.    </digitalgiftcard>
140.
141.    <digitalgiftcard productID="009">
142.        <name>Name: Disney+ </name>
143.        <Genre> Genre: Entertainment </Genre>
144.        <cost>Cost: $10</cost>
145.        <validity>Validity: Use before 2 year of issue </validity>
```

```
146.            <numberOfUsers>User: 1</numberOfUsers>
147.            <Availability>Availability: Not Available  </Availability>
148.            <discountvoucher>Discount: ---- </discountvoucher>
149.            <Sale> Sale: No  </Sale>
150.            <description> Description: A Disney+ gift subscription is an easy way to give one year
    of Disney+ to someone special.
151.             When you purchase the gift subscription for $79.99, you'll be paying for their first year
    of Disney+.
152.             After a year, they'll have the option to add their own payment details and continue their
    subscription. </description>
153.            <image id= "image9"/>
154.        </digitalgiftcard>
155.        <digitalgiftcard productID="010">
156.            <name>Name: Epic Coupon </name>
157.            <Genre> Genre: Game </Genre>
158.            <cost>Cost: $10</cost>
159.            <validity>Validity: Use before 2 year of issue </validity>
160.            <numberOfUsers>User: 1</numberOfUsers>
161.            <!-- <Availability>Availability: Yes </Availability> -->
162.            <discountvoucher>Discount: 4% </discountvoucher>
163.            <Sale> Sale: Yes  </Sale>
164.            <description> Description: Epic Coupons are non-transferrable and may not be resold,
    bartered, auctioned, or redeemed for cash,
165.             and they have no equivalent cash value. You can only redeem one (1) Epic Coupon per
    transaction, and an Epic Coupon, if one is available,
166.              will be automatically applied to your next eligible transaction. </description>
167.            <image id= "image10"/>
168.        </digitalgiftcard>
169.
170.    </giftCards>
171.    <Facebook> @2022 Pratiush Prasain </Facebook>
172. </giftCardShop>
```

2.3. Schema Content

```
1. <xs:schema attributeFormDefault="unqualified" elementFormDefault="qualified"
   xmlns:xs="http://www.w3.org/2001/XMLSchema">
2.   <xs:element name="giftCardShop">
3.     <xs:annotation>
4.       <xs:documentation> Date: 02/05/2022
5.  Student Name: Pratiush Prasain
6.  London Met ID: 2008959 </xs:documentation>
7.     </xs:annotation>
8.     <xs:complexType>
9.       <xs:sequence>
10.        <xs:element type="xs:string" name="shopname"/>
11.        <xs:element name="shopInfo">
12.          <xs:complexType>
13.            <xs:sequence>
14.              <xs:element name="logo">
15.                <xs:complexType>
16.                  <xs:simpleContent>
17.                    <xs:extension base="xs:string">
18.                      <xs:attribute type="xs:string" name="id"/>
19.                    </xs:extension>
20.                  </xs:simpleContent>
21.                </xs:complexType>
22.              </xs:element>
23.              <xs:element type="xs:string" name="storeName"/>
24.              <xs:element type="xs:string" name="address"/>
25.              <xs:element type="xs:string" name="telephoneNumber"/>
26.              <xs:element type="xs:anyURI" name="websiteURL"/>
27.            </xs:sequence>
28.            <xs:attribute type="xs:byte" name="shopID"/>
29.          </xs:complexType>
30.        </xs:element>
31.        <xs:element name="giftCards">
32.          <xs:complexType>
```

```
<xs:sequence>
  <xs:element name="digitalgiftcard" maxOccurs="unbounded" minOccurs="0">
    <xs:complexType>
      <xs:sequence>
        <xs:element type="xs:string" name="name"/>
        <xs:element type="xs:string" name="Genre"/>
        <xs:element type="xs:string" name="cost"/>
        <xs:element type="xs:string" name="validity" minOccurs="0" maxOccurs = "1"/>
        <xs:element type="xs:string" name="numberOfUsers" minOccurs="0" maxOccurs = "1" />
        <xs:element type="xs:string" name="Availability" minOccurs="0" maxOccurs = "1"/>
        <xs:element type="xs:string" name="discountvoucher" minOccurs="0" maxOccurs = "1"/>
        <xs:element type="xs:string" name="Sale" minOccurs="0" maxOccurs = "1" />
        <xs:element type="xs:string" name="description"/>
        <xs:element name="image">
          <xs:complexType>
            <xs:simpleContent>
              <xs:extension base="xs:string">
                <xs:attribute type="xs:string" name="id" use="optional"/>
              </xs:extension>
            </xs:simpleContent>
          </xs:complexType>
        </xs:element>
      </xs:sequence>
      <xs:attribute type="xs:byte" name="productID" use="optional"/>
    </xs:complexType>
  </xs:element>
</xs:sequence>
<xs:attribute type="xs:string" name="type"/>
</xs:complexType>
</xs:element>
<xs:element type="xs:string" name="Facebook"/>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:schema>
```

3. Testing

3.1. Testing 1: Run XML in Browser

Test Number	1
Action	Inserting the XML document in the browser for checking the formation of the XML document
Expected Result	XML document should run properly without any errors
Actual Result	XML document run successfully in Browser.
Test Result	The test was successful.

Table 1: Run XML in Browser

Screenshots

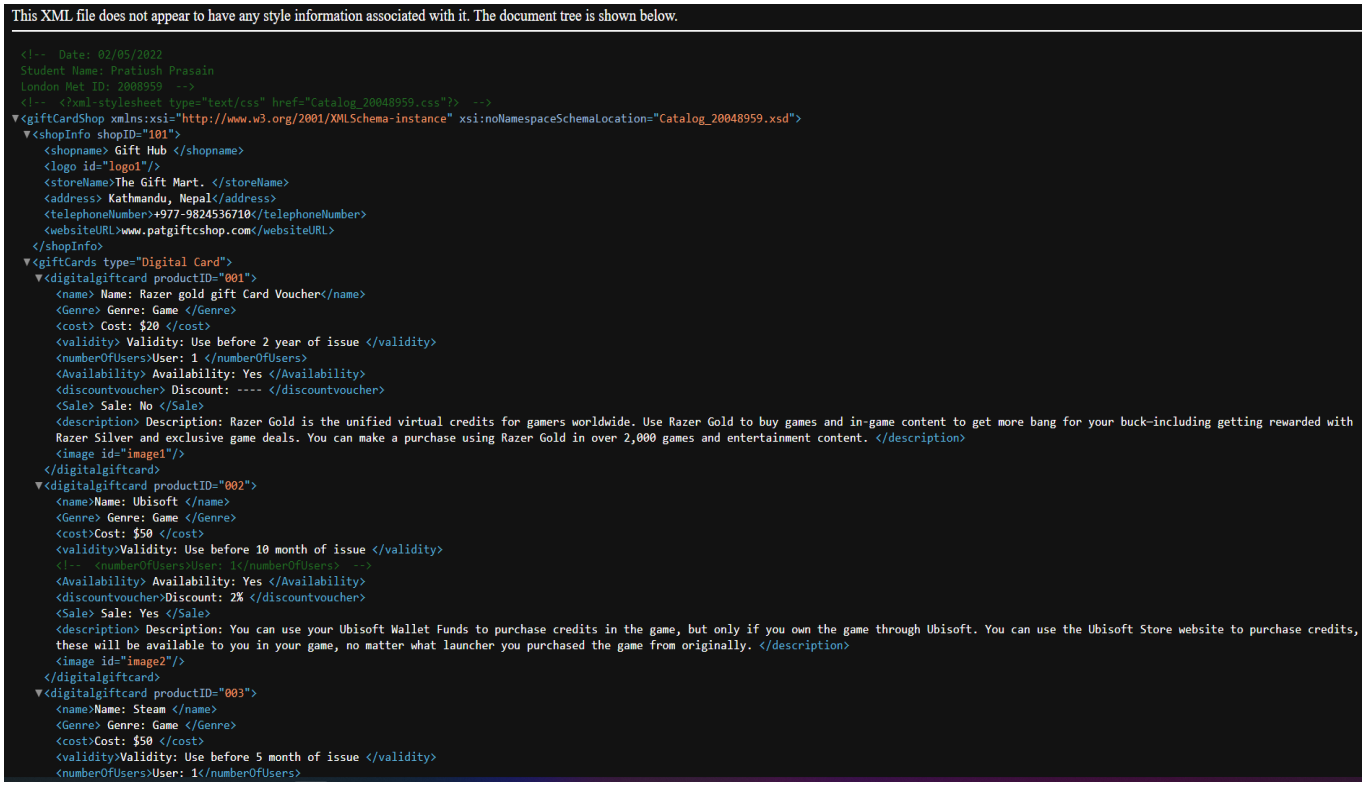


Figure 1: Run XML in Browser

3.2. Testing 2: Validate the XSD document

Test Number	2
Action	Validate the XSD document using site “https://www.xmlvalidation.com/index.php?id=1&L=0”
Expected Result	XML document should validate without showing any errors
Actual Result	Was validated successfully without any error
Test Result	The test was successful.

Table 2: Validate XSD file

Screenshots

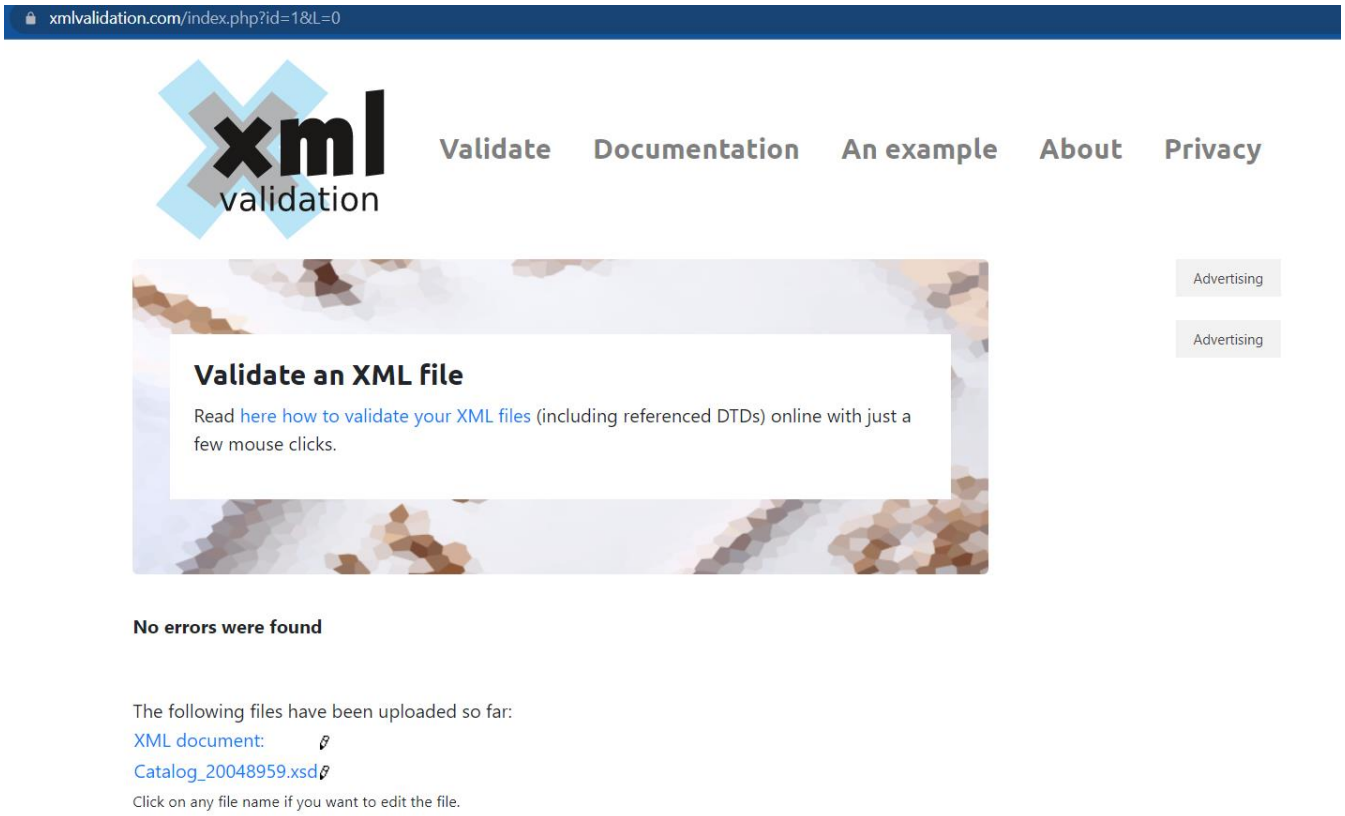


Figure 2: Validate XSD file

3.3. Testing 3: Implementation of CSS

Test Number	3
Action	Implementing CSS file in Chrome Browser
Expected Result	CSS file should be proper, stylish and well designed and implemented successfully in Browser.
Actual Result	The CSS file successfully run in browser without showing any error.
Test Result	The test was successful.

Table 3: Implementation of CSS

Screenshots

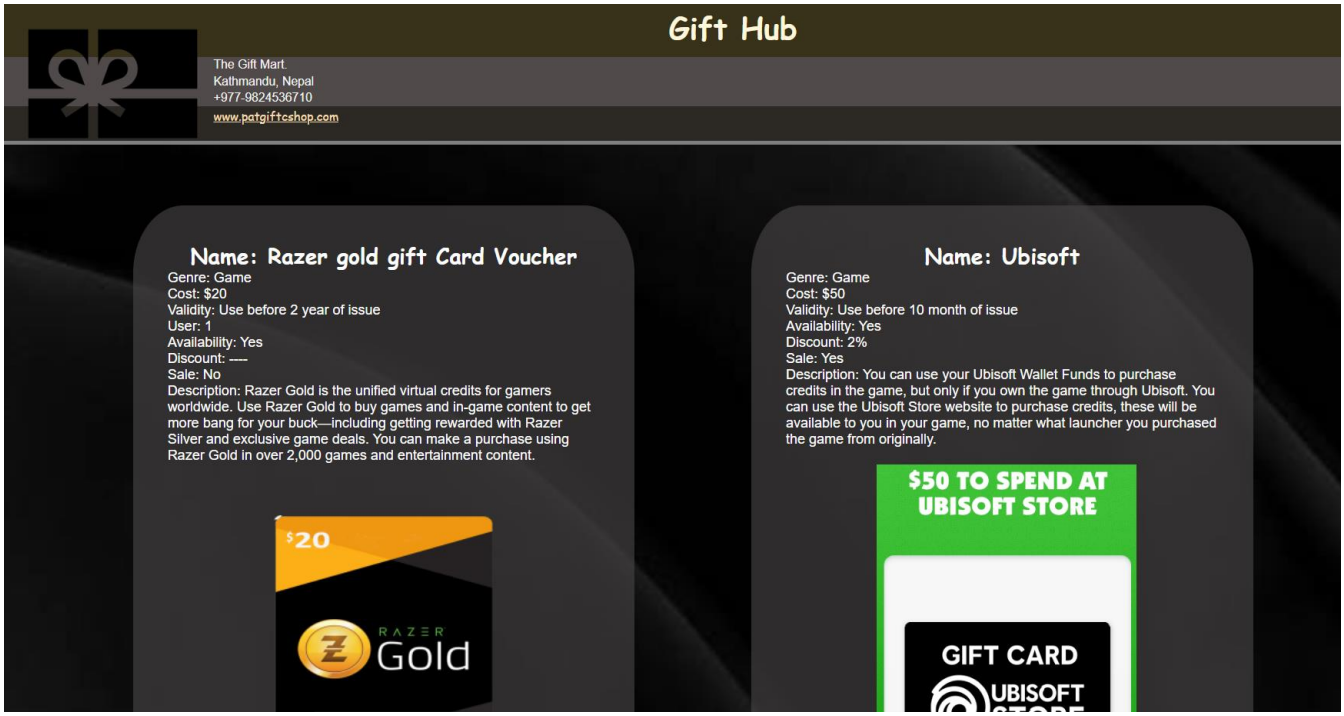


Figure 3: Implementation of CSS

3.4. Testing 4: Add Hover Feature in Image

Test Number	4
Action	Adding Hover feature in image
Expected Result	The image flows up when the curser keeps in front of image.
Actual Result	The image flows up.
Test Result	The test was successful.

Table 4: Add Hovering feature in Image

Screenshots

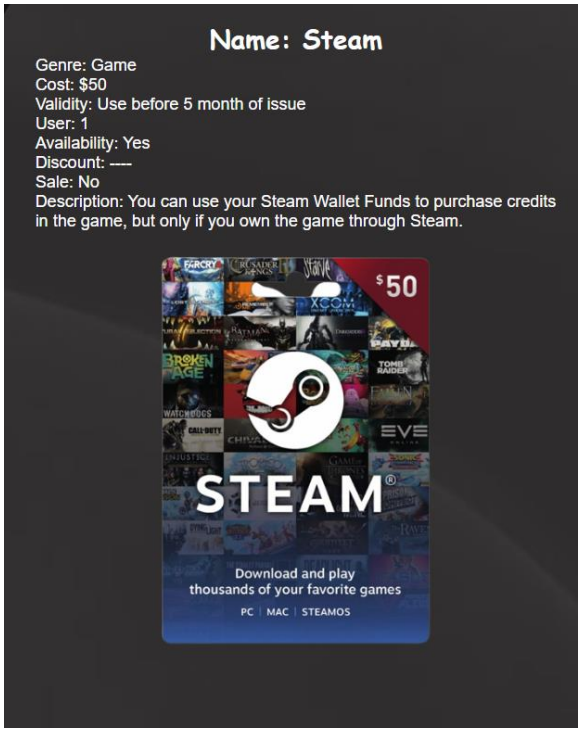


Figure 4: Add hovering feature in image

3.5. Testing 5: Adding image in Apple gift Voucher

Test Number	5
Action	Adding image in Apple gift voucher
Expected Result	The image needs to be shown up in Apple gift voucher section
Actual Result	The image shown up in Apple gift voucher section
Test Result	The test was successful.

Table 5: Add image in Apple gift Voucher

Screenshots

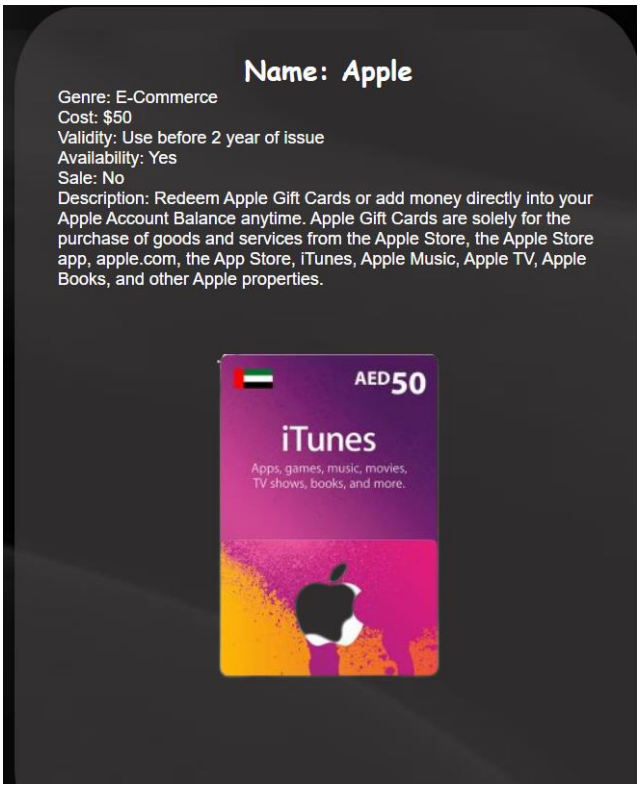


Figure 5: Add image in Apple gift Voucher

4. Difference between Schema and DTD

Schema	DTD
XSD stands for XML Schema Definition	DTD stands for Document Type Definition.
A schema is a means to explain the structure of an XML document by defining the rules for all of its properties and elements.	DTD is a document that specifies the structure of an XML document and is used to properly specify the XML language's attributes.
XML is used for writing XSD.	SGML syntax is used for DTD.
The order of child components is defined by XSD.	The order of child items is not specified in the DTD.
XSD is simple to learn since it does not need the learning of a new language.	DTD is a challenging language to learn.
It allows us to have more control over an XML document's structure.	It doesn't provide us much control over the structure of the XML document.
It supports namespace.	It does not support namespace.
XSD can be extended	The DTD is not expandable.
The XSD format allows for more control over XML.	The DTD has less control over XML than the DTD.
It does not contain hard-coded keywords and tags.	It has its own set of keywords for defining schema.

5. Tools Used while doing coursework

The sources of the tools and materials utilized in the production of this coursework are listed below.

Visual Studio Code is a graphical programming environment.

Visual Studio Code is a desktop-based source code editor for Windows, macOS, and Linux that is both lightweight and capable. It comes with built-in support for JavaScript, TypeScript, and Node.js, as well as a thriving ecosystem of extensions for other languages and runtimes (including C++, C#, Java, Python, PHP, and Go) (such as .NET and Unity). Start with Visual Studio Code and go to www.xmlvalidation.com from there.

Draw.io

Draw.io is a free, open-source Windows software that allows you to make diagrams both offline and online. Depending on the type of chart, you can save or import it to other apps or your software. Draw.io is used for creating the tree structure of the XML document.

XML Validator

The www.xmlvalidation.com service validates XML documents used in process data. It can check for well-formedness or validate the document against a schema or a DTD.

6. Critical Analysis

The foundation for web-based technologies like XML is SGML (Standard Generalized Markup Language). In web browsers, HTML is used to show data, whereas XML is used to store and transmit data. They were designed with these objectives in mind, and they must be used accordingly. Forcing the usage of a technology on platforms that aren't built for it will lead to incompatibility and technical problems.

Using XML, CSS, and DTD as well as other technologies. I can see why they're being produced in the first place and why they're needed. Each technique was developed to achieve a certain aim. It is more sensible to develop newer technology that satisfies the need rather than imposing patchwork when it reaches its limit or confronts incompatibility. For example, in this project, putting interactive and intelligible data from XML onto the browser using CSS is a difficulty. Because these technologies were not developed for that purpose, my attempts were useless and unrealistic. As a result, technologies and their functions must be well comprehended and applied.

7. Conclusion

The coursework was completed using the various web-based technologies. This project really aided my understanding of numerous web-based technologies. XML, DTD, XML Schema, CSS, and name spacing are examples of markup languages. While gathering material, I was able to learn a lot about XML, CSS, and how they are extensively used thanks to the internet.

After much research and effort, I have finally finished my project in which I developed an Xml file, a Schema file, and a CSS file for an online gift shop. This website is intended to look through a gift shop. Gift cards with various details such as name, price, discount, and so on are available in the store. I was able to grasp the fundamentals of XML, Schema, and CSS attributes after completing this training.

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