Subject: Visual Basic, computer Networking, Accounts, Comp. Graphics, E-commerce.

11 March 2024

SCM: Supply chain Management: (SCM)

components:

(i) In supply Chain Management is the end to end process of planning, implementing and controlling the flow of goods, services, Information and finances as they move from the supplier through to the manufacturer, wholeseller, retailer and ultimately to the end-customer.

(ii) The primary objective of supply chain management is to optimise the supply chain efficiency, reduce cost and improve overall customer satisfaction.

(iii) Supply chain management is the process of planning, implementing and controlling the flow of goods and services, information and finances as they move from the point of Origin to the point of consumption

(iv) A Typical supply chain management involves close collaboration with suppliers, logistics, business partners and other associated stake holders to ensure the smooth flow of goods and services.

(v) The advent of digital technologies and data driven approaches has led to significant advancement in supply chain management providing Greater visibility, real time tracking and predictive analytics to optimise the overall operations.

(vi) The major activities and functions of supply chain management are as follows:

(a) Planning: It is the 1st step of the SCM that focuses on demand and supply planning. In demand planning forecasting and estimating future demand of products and services. are planned properly In supply planning the process of determining how to fulfil the demand as focused in demand planning. (b) Sourcing: This managerial part focuses on supplier selection and procurement availability. In supplier selection approach a system identified, evaluates and selects proper suppliers to fulfil the products demand. In procurement approaches the necessary raw materials

components or finished products are selected from suppliers to fulfil the requirements of customer.

(c) Manufacturing and Production: This part of SCM includes several types of manufacturing process and production of quality content. controlled

(d) logistics, warehousing and distribution:

(i) In this management logistics include planning and executing the movement of goods and services across the supply chain.

(e) The logistics also involve Transportation, order fulfillment and tracking of shipments.

In warehousing a large amount of demand products are managed and stored inside the warehouse that helps in extreme easy distribution weight.

In Distribution section the ordered products are distributed from nearby warehouses.

(f) Inventory Management .. (contd.)

11.03.2024 web Technology.

what is XML?

(i) XML refers to called as Extensible Markup language. Extensible

It is a Text based markup language that enables you to store the data in a structured format by using meaningful Tags. It is a cross platform, Hardware and software Independent Markup language.

XML allows computers to store data in a format that can be interpreted by any other computer system it can be used to transfer structured data between Hetrogeneous systems.

As we know that XML is a markup language which uses Tag to Implicate how a file should look when displayed on a web-page. Some of the example of Markup language are hyperText Markup language. It provides simple and effective way for people to generate readable document

HTML is used for Data presentation whereas XML is used for data description and definition. so the purpose of 2 markup language is completely different

Advantages of XML:
Some of the advantages offered by XML are as follows:
It provides a way of creating domain ~~spec~~ specific vocabulary.
(i) Advantages:
Domain specific vocabulary
It allows data interchange between different computer system.
(ii) It provides user selected View of data.
(iii) Structure of document in which data is to be stored
XML documents is composed of number of components. That can be used for representing information in hierarchical order. These components are as follows:

(a) processing Instruction – An XML document usually begin with the XML declaration statement. which is called processing instruction
It provides information regarding the way in which XML file should be processed.

(b) Tags: Tags are used to specify a name for a given piece of information. Tags
Tags are used to specify, it is a means of identifying data. Data is marked up using tags. A tag consist of an opening and closing angular bracket. These brackets enclose the name of the tag. and each pair of Tag consist of starting tag and ending Tag.
ending tag preceeded with forward slash.

Elements are the basic unit that are used to identify ~~The~~ and describe data in XML. It is the building block of XML Document.
eg. <Author-name Aayush>
Note: XML document must and always have root element and root element contains all other elements in the document

(c) Content: The information that is represented by the element of an XML document is reffered to as the content of that element
<book-name Integrated Core Java>.

(d) attributes: Attributes provides additional information about the element for which they are declared.
An Attribute consist of a name value pairs
Element can have one or more attributes.
Attributes values can be either mandatory or optional

(e) Entities:

An entity can be described as a shortcut to a set of information. It is a name that is associated with a block of data. This data can be text or a reference to an external file that contain Textual information. ~~Then~~ when an entity is used in ~~an~~ the XML file. it is expands to its full definition.
XML support the use of three kinds of entities: Internals ~~external~~ general and parameter entities.

(f) Comments: comments are statements that are used to explain the quote. They are also used to provide documentation information about an XML File.

Example:
<!-- Certain Text: This is a description -->

12 march 2024.

E-Commerce

Inventory management in SCM balance the cost of holding inventory with associated risk. It also helps in maintaining the buffer stock to prevent shortage and maintain the demand or supply.

(ii) Demand Management:
This chain of SCM fulfils order management and customer relationship management (CRM).
In order management part it manages the customer orders regarding their products till the final delivery.
In CRM part the SCM builds and maintains a strong relationship with the customers by fulfilling their problems or requirements.

(iii) Technology and Information systems: This part of SCM provides latest technologies used in supplying the products to the customer.
In this part supply chain s/w, IOT (Internet of Things), Blockchain Technology, different E-commerce s/w are helpful to manage the supply chain system.

(iv) By using these Technologies a system can enhance supply chain visibility, communication and data analysis work.

(v) Here Blockchain and IOT Technology are useful in Tracing the products status in a supply chain.

Supplier and vender management.

(vi) In this part of SCM suppliers try to access and update information related to orders, inventory and demand.

(vii) This management maintains a strong relationship with suppliers and vendors which is fruitful for a system.

(viii) Risk Management: This part of SCM analyse and handles different types of risk factors associated with supply chain.
It ensures the supply chain activities.
by meeting regulatory and compliance requirements

(ix) This part of SCM managing and focusing various types of cost used in a supply chain system.
that mainly includes transportation cost, warehousing cost, inventory cost, staffs involvement cost, Different types of wages,

maintenance cost and other related cost.

(x) Customer Service and support / Service Management:
In this management customer ~~is~~ enquiries and issues related to purchase order and delivery are performed. It also provides support and maintenance regarding services after successful ~~del~~ product delivery.

CRM... (contd.)

Web Tech.

DTD

~~DDT~~ Defines the Document Type Definition / It.
allow you to store data in a constraint format.
it specifies the element that can be present in the xml ~~document~~ document.
Attributes of these elements and their arrangement with relation to each other. It is similar to creating a Table in database, we specify the structure of data by declaring elements to denote the data.
This is similar to creating columns in a table. XML allows you to create your own DTD's for Application.
This is gives you complete control over the process over checking the content or the structure of xml documents created for Application. This checking process is called validation.
↓ an
Declaring elements in a DTD after identifying the elements that can be used for storing structure data they can be declared in a dtd.

(a) The XML documents can then be checked against the dtd. In a dtd element are declared using following syntax. In the given syntax:
Element name specifies the name of the elements content

(b) content Type specifies whether the elements: textual data, or other elements. while declaring elements or attributes we must consider some naming rules.
- (a) The name consists of atleast one letter A-Z / or a-z.
- (b) An element may start with an underscore
- (c) one or more letter, digits, hyphens - or fullstop.
- (d) can follow the initial letters.

(e) space and tabs are not allowed in elements names.

There are two types of DTD which is known as Internal DTD's and External DTD.

Internal DTD

This dtd is a part of xml document. This dtd can be used only by the document. in which is created and cannot be used across multiple documents.

External DTD

(i) This DTD is maintained as a seperate file as a reference to this file included in the xml document.

(ii) This DTD can be used across multiple documents.

XML Schema :-

To defines the list of elements and attributes that can be used in XML documents. ~~Schema can be used to.~~

In addition to the list of documents XML schema specifies the order in which these elements appear in the xml document and their data types. microsoft has developed a language that is used to define the schema of an XML document. This language is called XML Schema Definition: XSD language

XML Schemas have now become W3C recommendation for creating valid XML document.

Advantage of XML Schemas:

An XML schema created using XSD is very similar to DTD which is also used for defining the structure of XML document.

However an XML schema created using XSD has many advantages over dtd some of the advantages are as follows:

(i) XSD provides more control over the type of data that can be assigned to elements and attributes as compared to dtd.

(ii) DTD does not enable you define your own customised datatype. XSD enables you to create your own datatype. This features enhances the flexibility of defining the structure of the XML documents.

(iii) XSD also allows you to specify restriction on data.

13.03.2024.

XML

Create the xml schema : The schema elements :

The integration of various components of XSD is done using the schema elements. Using the schema elements for eg. The XML schema for the product data structure must be given below:

```
1
2
3
4
5
6
7
8
9
10
11
12
13
14.
```

As shown in the above code, the declaration of an XML Schema start with the schema elements. The schema elements uses : XMLNS attribute to specify the namespace associated with the document. The namespace is a string that is used to refer to unique resource identifiers. and the definition of the keywords and datatypes are used in the schema is stored.

Create an XML document conforming to the schema.

In order to create a data structure that confirms to the XML schema we should create XML document and associate with it. The XML schema unlike the case of dtd where we can directly associate the XML file with the dtd. by using the Doctype declaration.

An xml file cannot be directly associated with the XML schema file.

<Product Data>
< product>
- <Productname> Barbie Doll </product name>.
- < description > This Doll is used for children aged 11 and above </ description>.
- <price > 200 </price>
- < quantity > 12 </quantity>.
- </ product>

</ Product data>.

Identifying the method for declaring an attribute for:

The attribute element

The attribute further classifies the element and restrict the scope and usage of user defined attribute. The syntax for declaring the attribute that is given below:

< attribute name = "attribute name" default = "default value" fixed = "fixed value" ref = "attribute-name" type = " data type name" use = "value" />

In the above code following attributes specify such as:

(a) name-attribute: The name attribute is used to specify the name of the user defined attribute. This attribute must be used when the schema element is the parent element of the attribute element

(a) The value of the name attribute cannot include the colon symbol.

(b) default attribute: The default attribute is used to specify a default value for the attribute. If the value of the attribute is not specified in the xml document. The default value is a way of ensuring that an attribute is always set to some value.

(c) fixed attribute: The fixed attribute is used to provide a fixed value to an attribute. If you provide a fixed value to an attribute. The value of an attribute cannot be changed. In the xml document we cannot use the default and fixed attribute together in an attribute declaration.

(d) The ref: attribute: The ref attribute is used to reference a user defined attribute.

(e) The type attribute: The type attribute takes a value which specify the data type of user defined attribute

Consider the following example.

<XSD: attribute name = "product id" type = "XSD: String" />

The use attribute: The use attribute specify the way in which an attribute can be used in an XML document. The values that can be assigned to the use attribute are optional and required.

XML Namespace

XML is an extensible language that means we can create our own tags. And these tags are specified in the schema.

The element and attributes declare in a schema can also be called the vocabulary for an XML document.

The namespace can be declared in an XSD document by using the XML'NS Keyword. This keyword is an attribute of the schema elements.

which is declared at the beginning of the document.
XMLNS is the name of the attribute and it is followed by namespace prefix.
There are two kinds of namespace:
Declaration default and explicity.

Default Declaration:
The default declaration statements enables you to declare a default namespace.
for a document.
In case of default namespace you need to specify the prefix.
We need not to specify the prefix.
All elements and attributes belonging to the default name space can be used without any prefix.

<element name = "Book" Type="Book type" />

Explicit declaration:
In an explicit declaration the XMLNS keyword associates a prefix with a namespace URI

<XSD: schema XMLNS: XSD = "http://www.w3.org/2001/XML" />

2
3
4 </XSD: schema>.

In default declaration
<Schema xmlns = " " />

2
3
4 </ schema>.

write a program in advjava to insert a value in database using jdbc API.

Student sname Scourse.
sid.

Create table student (
sid. Integer Primary Key,
Sname varchar(20),

14. march 2024. E- Commerce

Customer Relationship Management:

CRM stands for customer Relationship management
CRM refers to a set of practices, strategies, technologies and tools that e-commerce business used to manage and analyse customer interactions and data throughout the customer life cycle.

The primary goal of a CRM is to build and maintain strong customer relationship and enhance customer satisfaction which can lead to increased customer loyalty and ultimately improved business performance.

CRM plays a vital role in enhancing customer experience, streamline business operation, streamlining business operations and boosting sales and customer retention

CRM is a versatile software tool used by a wide range of industries and businesses of all sizes to manage customer relationships effectively.

Effective CRM management or implementation can result in improved customer satisfaction, higher customer retention or loyalty, increased sales, and enhanced operational efficiency. The concept of CRM helps in to understanding the business especially customers in better form.

components of CRM: (1) Customers Data Management: CRM systems collect, store and manage customer information including contact details, purchase history, preferences, setting, communication through (email, social sites, whatsapp) meetings, touch points,

Sales management:
CRM systems provide tools for managing sales opportunities etc by the sales team who can use CRM to track delivery status, forecast revenue and prioritise sales activities.

Marketing management: A typical CRM system is mostly integrated with marketing automation tools to manage marketing campaigns, major campaign effectiveness; Tracking provided schemes and offers. etc.

Customer support and services (customer care)
This component of CRM helps the organisation to manage customer support request, tracking service interactions and ensure timely issue resolution.

Analytics and reporting management:
This part of CRM offer analytics and reporting features that allow business to gain the customer behaviours, sales performance, customer service facilities, etc.
This data can inform decision making and strategic planning for the E-commerce system.

Scalability (contd.)

14.03.2024 XML

Apply the CSS to xml document
Style sheet
To view selective details of a product such as product Id., name and rate from an xml document we need to associate the xml document with the XSLT file that rendered the required data and this can be done using following syntax:

```
<?XML - Stylesheet type="text/xsl"
    href="path-name"?>
```

In the above syntax:

(a) XML style sheet Instruct the browser that the xml document style sheet instruct the browser, uses style sheet is CSS.

(b) Type specifies the type of formatting used XSL is used for formatting data, the type attribute is said to XSL HREF specifies the path and the name of the XSLT file used for formatting XML document.

```
<?xml version="1.0"?>
<?xml-stylesheet type="text/xsl" href="product1.xsl"?>
<productData>
    <product prodId="P001" category="Toy">
    <ProductName> Mini Bus </ProductName>
    <Description> This is a toy for children aged 4 and
      above </description>
    <Price> 75 </Price>
    <Quantity> 54 </Quantity>
    </Product>
      |
      |
      |
      |
      |
    </productData>
```

Diff b/w html and xhtml.

html is a markup language that was used to build the web-page existing this webpage was created There have been lot of modification and variation done in the HTML language such as Adding the concept of vector handling, adding the new feature like table etc.

Both languages are used to build webpage and android application but there are some major difference between html and xhtml.

Xhtml stands for extensible hypertext markup language. It is an extension of html.

Difference:

HTML	Xhtml
(1) html is an sgml based language it defines the standard for generalizing the markup languages for documents	(1) Xhtml is an XML based language which means it manipulates and process data using XML Technologies

(i) HTML is not a case sensitive language.

(ii) HTML empty elements do not require a closing Tag at the end not even a forward slash symbol to signify the end of the tag.

(iii) The tags and attributes in HTML can be specified either in lowercase / uppercase since it is not case sensitive

(iv) The HTML document requires a min. of 4 tags to create an HTML page that is <HTML>, <head>, <Title>, <body> etc. The DOCTYPE declaration is not necessary for HTML.

(v) Some HTML elements may function properly without a closing tag.

(vi) Some elements in HTML may be improperly nested that is they do not need to be closed in the order in which they are opened ~~All~~

(vii) It is not mandatory to put quotes while using the attributes

(i) XHTML is a Case-Sensitive language.

(ii) XHTML empty element must always be closed that is there must be a forward slash symbol at the end of the element.

(iii) All XHtml elements & attributes must be in lower case. since it is a case sensitive language

(iv) An XHTML document must contain doctype declaration followed by the <HTML>, <head>, <Title>, <Body> tags in its document to create a webpage.

(v) All the xhtml elements must be closed even the element ~~xx~~ also require a empty closing tag.

(vi) All Xhtml element must be properly nested with each other

(vii) mandatory to put quotes in attributes in XHTML.

15 Feb 2024.

E- commerce

Scalability:

(i) CRM components of E-commerce provides a scalable solution to accomodate the growth and changing needs of businesses. from small startups to large enterprises

(ii) Data security: CRM also protects customer data to ensure the confidentiality and integrity of customer information which is helpful for both the customer and E-commerce business.

(iii) feedback and surveys.
CRM system also helps in feedback and survey work by collecting customer feedbacks through various types of surveys and evaluation.
that is helpful for and service improvements in the favour of customer.

(iv) Integration: At present time CRM systems can integrate with other businesses and related applications (such as ERP)
To provide a broader view of customer interactions and business process. Thus a CRM system integrates with other related system increases the efficiency too much

(v) Mobile accessibility: At present Time many CRM system offer mobile apps or responsive way interfaces to access ecommerce business and required customer information very easily from any location anytime.

E-Governance.

(i) E-Governance stands for Electronic Governance. Governance refers to using Electronic and digital technologies to improve and enhance the delivery of government services and information to the citizens, country's business and other related Government agencies.

(iii) E-Governance includes a wide range of Activities such as online portals and websites for accessing Government Information, schemes, Offers and services.
for this several digital communication channels are used for citizen engagement

(iii) It can also involve the use of social media and other digital platforms for citizen feedback and participation.

(iv) The benefits of E-Governance Include:
- ☑ Increased efficiency
- ☑ reduced corruption
- ☑ Improved services.
- ☑ Improved transparency
- ☑ Improved accountability,
- ☑ Improved Citizen engagement and participation in the government services.

Web Technology.

Document object model.

DOM is a programming Interface for HTML and XML documents. It defines the logical structure of documents and the way a document is accessed and manipulated. So we can say that DOM is an API. that represents an interact with HTML or XML document.

HTML is used to structure the web pages. and javascript is used to add behavior to our pages when an html file is loaded into the browser the javascript cannot understand the html document directly. So It interprets and interacts. with document object model which is created by browser based on HTML document.

DOM is basically the representation of same html document but in a tree like structure composed of object. Javascript can't understand the tags in html document but can understand object-ls in document object model.

Document object model is essential for web development for the following reasons:

Dynamic web page: It allows you to create dynamic web page. It enables the Javascript to access and manipulate page content, structure and style dynamically which gives ~~dynamic~~ interactive and responsive web-experience.

Interactivity: with document object model, it respond to user actions like clicks, inputs or scroll and modify the webpages accordingly.

content update:- when you want to update the content without refreshing the entire page, the DOM enables targeted changes making the web application more efficient and user friendly.

Cross Browser - compatibility: Different browsers may render html and CSS in different ways. the dom provides a standardised way to interact with web page elements.

Documents are modelled using objects and model includes not only the structure of a document but also the behavior of a document and the object of which it is composed like tag elements with attributes in html.

Properties of DOM:

① window object: window object of the browser which always at top of the hierarchy

It is like an API that is used to set and access all the properties and methods of the browser.

It is automatically created by the browser. Document object: When an HTML document is loaded, into a window it becomes a document object.

Form object: It is represented by Form tags, Link object: It is represented by link tag.

Anchor object: It is represented by href tag.

Various methods of document object:

~~right~~ "
~~write~~ " write("writes given string on the document");

getElementById(" It returns the element having the given id value.")

getElementByName(" It returns the ~~elem~~ all the elements having the given name value)

getElementByTagName( ) It returns all the elements having the given tag name.

getElementByClassName( ) It returns all the elements having the given class name.