GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, DELHI
BACHELOR OF BUSINESS ADMINISTRATION (BBA)

BBA 106: E-Commerce

L-4, T-0, **Credits: 04** **External Marks: 75**

Objectives: The course imparts understanding of the concepts and various application issues of e-commerce like Internet infrastructure, security over internet, payment systems and various online strategies for e-commerce.

Course Contents

Unit I **(14 Hours)**

Introduction to E-Commerce: Meaning, nature, concepts, advantages, disadvantages and reasons for transacting online, Electronic Commerce, Types of Electronic Commerce, Electronic Commerce Models, Challenges and Barriers in E-Commerce environment; E-Commerce in India : Transition to E-commerce in India, Indian readiness for E-commerce, E-Transition challenges for Indian corporate.

Unit II **(14 Hours)**

HTML: Elements, Tags and basic structure of HTML files, Basic and advanced text formatting, multimedia components in HTML documents, Designing of webpage: Document Layout, List, Tables, Hyperlink, Working with Frames, Forms and Controls.

Unit III **(14 Hours)**

Electronic Payment System: Digital Payment Requirements, Electronic Payment System, Types of Electronic Payment Systems, Concept of e-Money, Infrastructure Issues and Risks in EPS, Electronic Fund Transfer.

Security Issues in E-Commerce: Need and concepts, Electronic Commerce security environment, security threats in E-Commerce environment, Basics of Encryption and Decryption.

Unit IV **(14 Hours)**

E-commerce Applications: E-commerce applications in various industries, Emerging Trends in E-Commerce, Mobile Commerce; Economic, Technological and Social Considerations, Regulatory and Ethical considerations in E-Commerce.

Suggested Readings:

1. Elias M. Awad (3rd Ed.,2007). Electronic Commerce - From Vision to Fulfillment, PHI Learning.
2. Joseph, P.T. and S.J. (4th Ed.,2012). E-Commerce – An Indian Perspective, PHI Learning.
3. Efraim Turban, David King, Dennis Viehland, Jae Lee, (2009): Electronic Commerce – A Managerial Perspective, 4th Edition, Pearson Education.
4. Bharat Bhaskar (4th Ed.,2013). Electronic Commerce- Framework, Technologies and Applications, Tata McGraw Hill.
5. Dave Chaffey (4th Ed.,2013). E-Business and E-Commerce Management- Strategy, Implementation and Practice, Pearson Education.
6. Schneider Gary, (9th Ed.,2014). Electronic Commerce, Cengage Learning.

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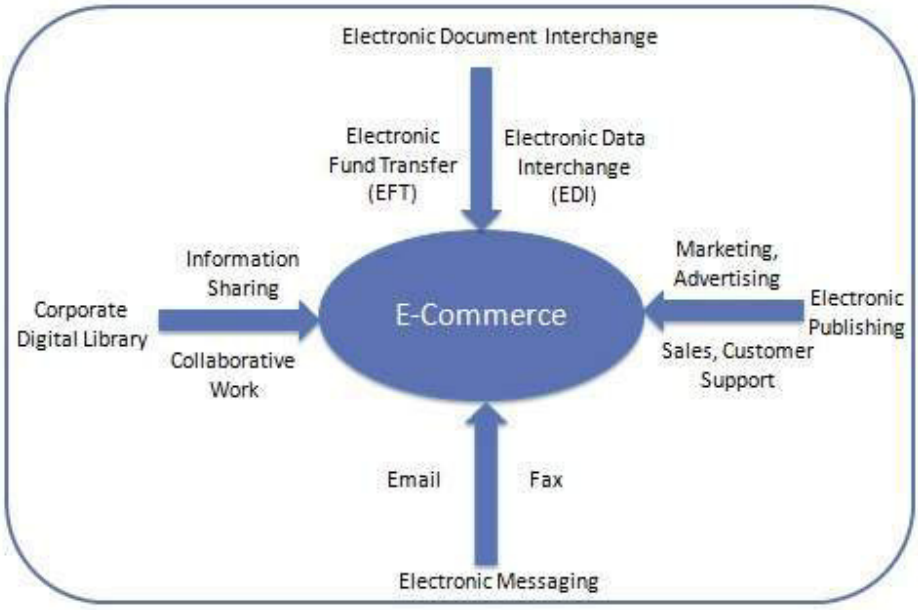
E-Commerce - Overview

E-Commerce or Electronics Commerce is a methodology of modern business, which addresses the need of business organizations, vendors and customers to reduce cost and improve the quality of goods and services while increasing the speed of delivery. Ecommerce refers to the paperless exchange of business information using the following ways –

- Electronic Data Exchange (EDI)
- Electronic Mail (e-mail)
- Electronic Bulletin Boards
- Electronic Fund Transfer (EFT)
- Other Network-based technologies



Features

E-Commerce provides the following features –

- **Non-Cash Payment** – E-Commerce enables the use of credit cards, debit cards, smart cards, electronic fund transfer via bank's website, and other modes of electronics payment.

- **24x7 Service availability –** E-commerce automates the business of enterprises and the way they provide services to their customers. It is available anytime, anywhere.
- **Advertising / Marketing –** E-commerce increases the reach of advertising of products and services of businesses. It helps in better marketing management of products/services.
- **Improved Sales –** Using e-commerce, orders for the products can be generated anytime, anywhere without any human intervention. It gives a big boost to existing sales volumes.
- **Support –** E-commerce provides various ways to provide pre-sales and post-sales assistance to provide better services to customers.
- **Inventory Management –** E-commerce automates inventory management. Reports get generated instantly when required. Product inventory management becomes very efficient and easy to maintain.
- **Communication improvement –** E-commerce provides ways for faster, efficient, reliable communication with customers and partners.

Traditional Commerce v/s E-Commerce

Sr. No.	Traditional Commerce	E-Commerce
1	Heavy dependency on information exchange from person to person.	Information sharing is made easy via electronic communication channels making little dependency on person to person information exchange.
2	Communication/ transaction are done in synchronous way.	Communication or transaction can be done in asynchronous way.

	Manual intervention is required for each communication or transaction.	Electronics system automatically handles when to pass communication to required person or do the transactions.
3	It is difficult to establish and maintain standard practices in traditional commerce.	A uniform strategy can be easily established and maintain in e-commerce.
4	Communications of business depends upon individual skills.	In e-Commerce or Electronic Market, there is no human intervention.
5	Unavailability of a uniform platform as traditional commerce depends heavily on personal communication.	E-Commerce website provides user a platform where al l information is available at one place.
6	No uniform platform for information sharing as it depends heavily on personal communication.	E-Commerce provides a universal platform to support commercial / business activities across the globe.

E-Commerce - Advantages

E-Commerce advantages can be broadly classified in three major categories:

- Advantages to Organizations
- Advantages to Consumers
- Advantages to Society

Advantages to Organizations

- Using e-commerce, organizations can expand their market to national and international markets with minimum capital investment. An organization can easily locate more customers, best suppliers, and suitable business partners across the globe.
- E-commerce helps organizations to reduce the cost to create process, distribute, retrieve and manage the paper based information by digitizing the information.
- E-commerce improves the brand image of the company.
- E-commerce helps organization to provide better customer services.
- E-commerce helps to simplify the business processes and makes them faster and efficient.
- E-commerce reduces the paper work.
- E-commerce increases the productivity of organizations. It supports "pull" type supply management. In "pull" type supply management, a business process starts when a request comes from a customer and it uses just-in-time manufacturing way.

Advantages to Customers

- It provides 24x7 support. Customers can enquire about a product or service and place orders anytime, anywhere from any location.

- E-commerce application provides users with more options and quicker delivery of products.
- E-commerce application provides users with more options to compare and select the cheaper and better options.
- A customer can put review comments about a product and can see what others are buying, or see the review comments of other customers before making a final purchase.
- E-commerce provides options of virtual auctions.
- It provides readily available information. A customer can see the relevant detailed information within seconds, rather than waiting for days or weeks.
- E-Commerce increases the competition among organizations and as a result, organizations provides substantial discounts to customers.

Advantages to Society

- Customers need not travel to shop a product, thus less traffic on road and low air pollution.
- E-commerce helps in reducing the cost of products, so less affluent people can also afford the products.
- E-commerce has enabled rural areas to access services and products, which are otherwise not available to them.
- E-commerce helps the government to deliver public services such as healthcare, education, social services at a reduced cost and in an improved manner.

E-Commerce - Disadvantages

The disadvantages of e-commerce can be broadly classified into two major categories –

- Technical disadvantages
- Non-Technical disadvantages

Technical Disadvantages

- There can be lack of system security, reliability or standards owing to poor implementation of e-commerce.
- The software development industry is still evolving and keeps changing rapidly.
- In many countries, network bandwidth might cause an issue.
- Special types of web servers or other software might be required by the vendor, setting the e-commerce environment apart from network servers.
- Sometimes, it becomes difficult to integrate an e-commerce software or website with existing applications or databases.
- There could be software/hardware compatibility issues, as some e-commerce software may be incompatible with some operating system or any other component.

Non-Technical Disadvantages

- **Initial cost** – The cost of creating/building an e-commerce application in-house may be very high. There could be delays in launching an e-Commerce application due to mistakes, and lack of experience.
- **User resistance** – Users may not trust the site being an unknown faceless seller. Such mistrust makes it difficult to convince traditional users to switch from physical stores to online/virtual stores.

- **Security/ Privacy –** It is difficult to ensure the security or privacy on online transactions.
- Lack of touch or feel of products during online shopping is a drawback.
- E-commerce applications are still evolving and changing rapidly.
- Internet access is still not cheaper and is inconvenient to use for many potential customers, for example, those living in remote villages.

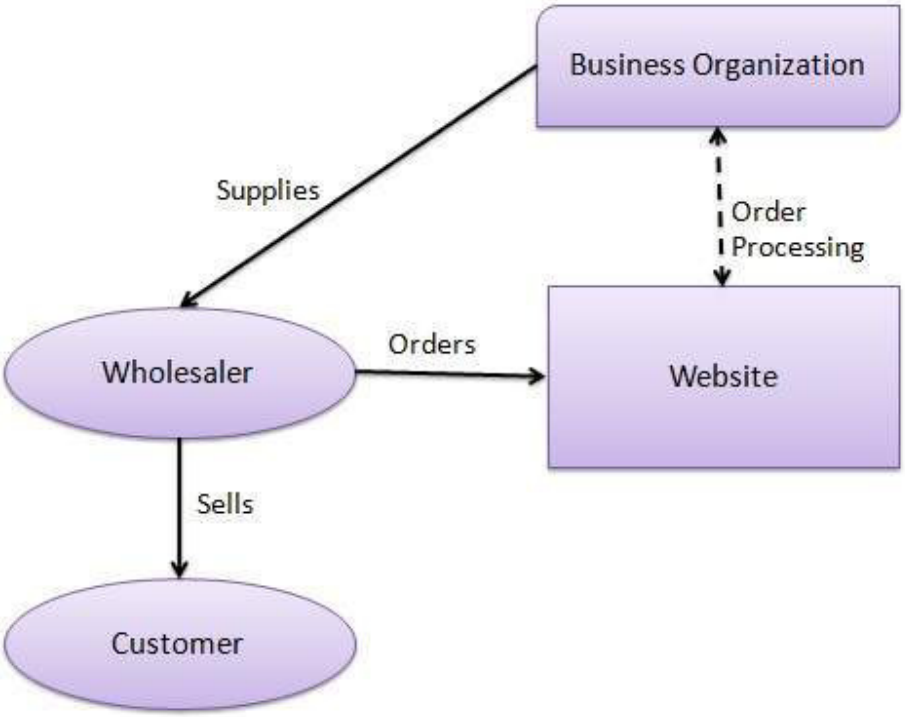
E-Commerce - Business Models

E-commerce business models can generally be categorized into the following categories.

- Business - to - Business (B2B)
- Business - to - Consumer (B2C)
- Consumer - to - Consumer (C2C)
- Consumer - to - Business (C2B)
- Business - to - Government (B2G)
- Government - to - Business (G2B)
- Government - to - Citizen (G2C)

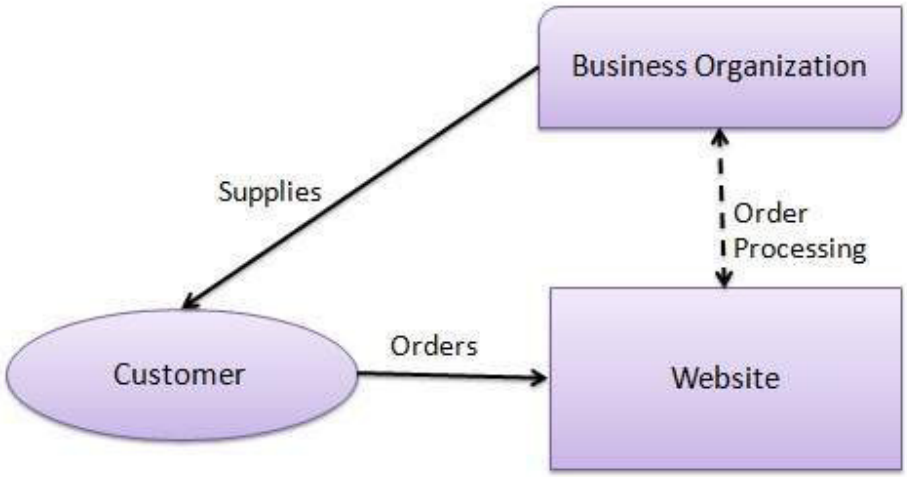
Business - to - Business

A website following the B2B business model sells its products to an intermediate buyer who then sells the product to the final customer. As an example, a wholesaler places an order from a company's website and after receiving the consignment, sells the endproduct to the final customer who comes to buy the product at one of its retail outlets.



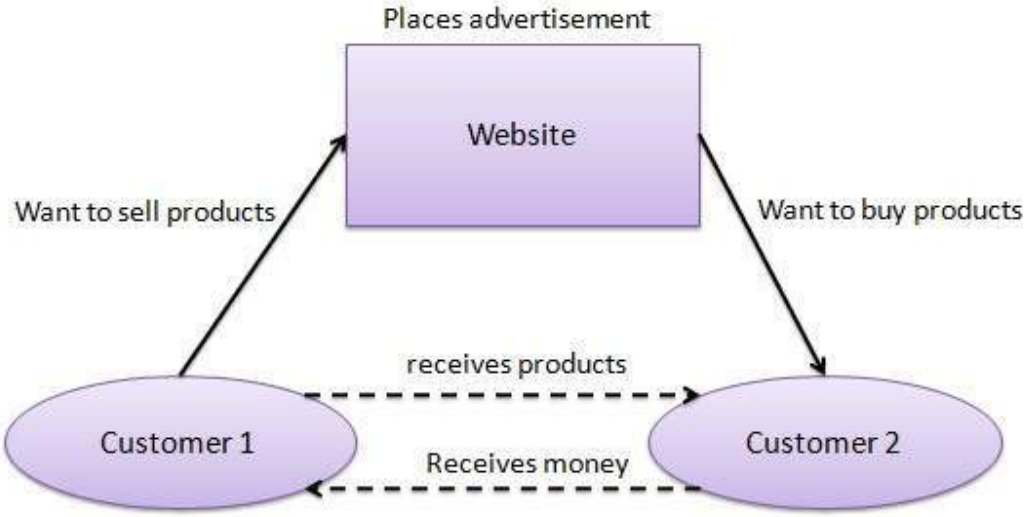
Business - to - Consumer

A website following the B2C business model sells its products directly to a customer. A customer can view the products shown on the website. The customer can choose a product and order the same. The website will then send a notification to the business organization via email and the organization will dispatch the product/goods to the customer.



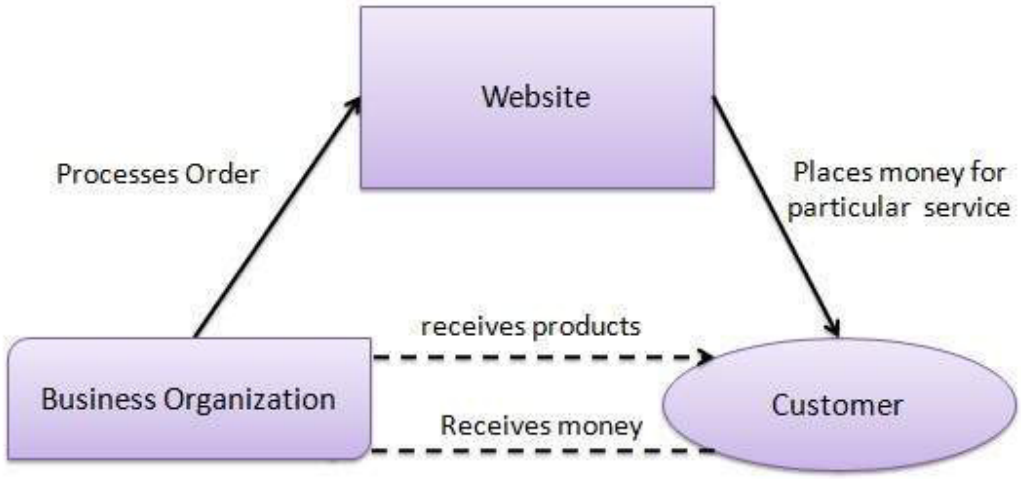
Consumer - to - Consumer

A website following the C2C business model helps consumers to sell their assets like residential property, cars, motorcycles, etc., or rent a room by publishing their information on the website. Website may or may not charge the consumer for its services. Another consumer may opt to buy the product of the first customer by viewing the post/advertisement on the website.



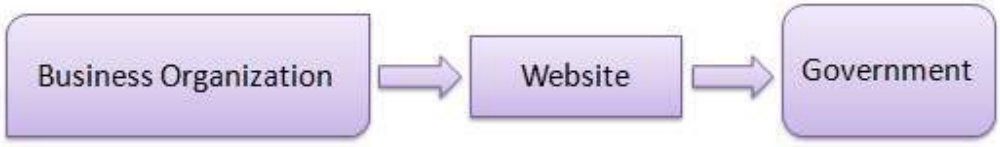
Consumer - to - Business

In this model, a consumer approaches a website showing multiple business organizations for a particular service. The consumer places an estimate of amount he/she wants to spend for a particular service. For example, the comparison of interest rates of personal loan/car loan provided by various banks via websites. A business organization who fulfills the consumer's requirement within the specified budget, approaches the customer and provides its services.



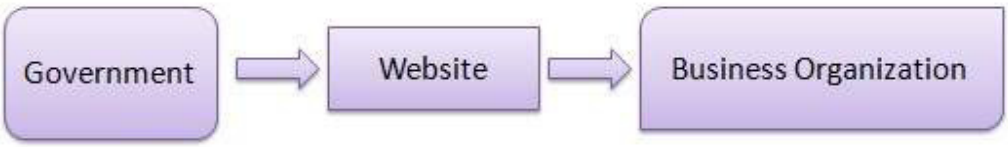
Business - to - Government

B2G model is a variant of B2B model. Such websites are used by governments to trade and exchange information with various business organizations. Such websites are accredited by the government and provide a medium to businesses to submit application forms to the government.



Government - to - Business

Governments use B2G model websites to approach business organizations. Such websites support auctions, tenders, and application submission functionalities.



Government - to - Citizen

Governments use G2C model websites to approach citizen in general. Such websites support auctions of vehicles, machinery, or any other material. Such website also provides services like registration for birth, marriage or death certificates. The main objective of G2C websites is to reduce the average time for fulfilling citizen's requests for various government services.

E-Commerce - Payment Systems

E-commerce sites use electronic payment, where electronic payment refers to paperless monetary transactions. Electronic payment has revolutionized the business processing by reducing the paperwork, transaction costs, and labor cost. Being user friendly and less time-consuming than manual processing, it helps business organization to expand its market reach/expansion. Listed below are some of the modes of electronic payments –

- Credit Card
- Debit Card
- Smart Card
- E-Money
- Electronic Fund Transfer (EFT)

Credit Card

Payment using credit card is one of most common mode of electronic payment. Credit card is small plastic card with a unique number attached with an account. It has also a magnetic strip embedded in it which is used to read credit card via card readers. When a customer purchases a product via credit card, credit card issuer bank pays on behalf of the customer and customer has a certain time period after which he/she can pay the credit card bill. It is usually credit card monthly payment cycle. Following are the actors in the credit card system.

- **The card holder –** Customer
- **The merchant –** seller of product who can accept credit card payments.
- **The card issuer bank –** card holder's bank
- **The acquirer bank –** the merchant's bank
- **The card brand –** for example , visa or Mastercard.

Credit Card Payment Proces

Step	Description
Step 1	Bank issues and activates a credit card to the customer on his/her request.
Step 2	The customer presents the credit card information to the merchant site or to the merchant from whom he/she wants to purchase a product/service.
Step 3	Merchant validates the customer's identity by asking for approval from the card brand company.
Step 4	Card brand company authenticates the credit card and pays the transaction by credit. Merchant keeps the sales slip.
Step 5	Merchant submits the sales slip to acquirer banks and gets the service charges paid to him/her.
Step 6	Acquirer bank requests the card brand company to clear the credit amount and gets the payment.
Step 6	Now the card brand company asks to clear the amount from the issuer bank and the amount gets transferred to the card brand company.

Debit Card

Debit card, like credit card, is a small plastic card with a unique number mapped with the bank account number. It is required to have a bank account before getting a debit card from the bank. The major difference between a debit card and a credit card is that in case of payment through debit card, the amount gets deducted from the card's bank account immediately and there should be sufficient balance in the bank account for the transaction to get completed; whereas in case of a credit card transaction, there is no such compulsion.

Debit cards free the customer to carry cash and cheques. Even merchants accept a debit card readily. Having a restriction on the amount that can be withdrawn in a day using a debit card helps the customer to keep a check on his/her spending.

Smart Card

Smart card is again similar to a credit card or a debit card in appearance, but it has a small microprocessor chip embedded in it. It has the capacity to store a customer's work-related and/or personal information. Smart cards are also used to store money and the amount gets deducted after every transaction.

Smart cards can only be accessed using a PIN that every customer is assigned with. Smart cards are secure, as they store information in encrypted format and are less expensive/provides faster processing. Mondex and Visa Cash cards are examples of smart cards.

E-Money

E-Money transactions refer to situation where payment is done over the network and the amount gets transferred from one financial body to another financial body without any involvement of a middleman. E-money transactions are faster, convenient, and saves a lot of time.

Online payments done via credit cards, debit cards, or smart cards are examples of emoney transactions. Another popular example is e-cash. In case of e-cash, both customer and merchant have to sign up with the bank or company issuing e-cash.

Electronic Fund Transfer

It is a very popular electronic payment method to transfer money from one bank account to another bank account. Accounts can be in the same bank or different banks. Fund transfer can be done using ATM (Automated Teller Machine) or using a computer.

Nowadays, internet-based EFT is getting popular. In this case, a customer uses the website provided by the bank, logs in to the bank's website and registers another bank account. He/she then places a request to transfer certain amount to that account. Customer's bank transfers the amount to other account if it is in the same bank, otherwise the transfer request is forwarded to an ACH (Automated Clearing House) to transfer the amount to other account and the amount is deducted from the customer's account. Once the amount is transferred to other account, the customer is notified of the fund transfer by the bank.

E-Commerce - Security Systems

Security is an essential part of any transaction that takes place over the internet. Customers will lose his/her faith in e-business if its security is compromised. Following are the essential requirements for safe e-payments/transactions –

- **Confidentiality –** Information should not be accessible to an unauthorized person. It should not be intercepted during the transmission.
- **Integrity –** Information should not be altered during its transmission over the network.
- **Availability –** Information should be available wherever and whenever required within a time limit specified.
- **Authenticity –** There should be a mechanism to authenticate a user before giving him/her an access to the required information.
- **Non-Repudiability –** It is the protection against the denial of order or denial of payment. Once a sender sends a message, the sender should not be able to deny sending the message. Similarly, the recipient of message should not be able to deny the receipt.
- **Encryption –** Information should be encrypted and decrypted only by an authorized user.
- **Auditability –** Data should be recorded in such a way that it can be audited for integrity requirements.

Measures to ensure Security

Major security measures are following –

- **Encryption –** It is a very effective and practical way to safeguard the data being transmitted over the network. Sender of the information encrypts the data using a secret code and only the specified receiver can decrypt the data using the same or a different secret code.

- **Digital Signature** – Digital signature ensures the authenticity of the information. A digital signature is an e-signature authenticated through encryption and password.
- **Security Certificates** – Security certificate is a unique digital id used to verify the identity of an individual website or user.

Security Protocols in Internet

We will discuss here some of the popular protocols used over the internet to ensure secured online transactions.

Secure Socket Layer (SSL)

It is the most commonly used protocol and is widely used across the industry. It meets following security requirements –

- Authentication
- Encryption
- Integrity
- Non-reputability

"https://" is to be used for HTTP urls with SSL, where as "http:/" is to be used for HTTP urls without SSL.

Secure Hypertext Transfer Protocol (SHTTP)

SHTTP extends the HTTP internet protocol with public key encryption, authentication, and digital signature over the internet. Secure HTTP supports multiple security mechanism, providing security to the end-users. SHTTP works by negotiating encryption scheme types used between the client and the server.

Secure Electronic Transaction

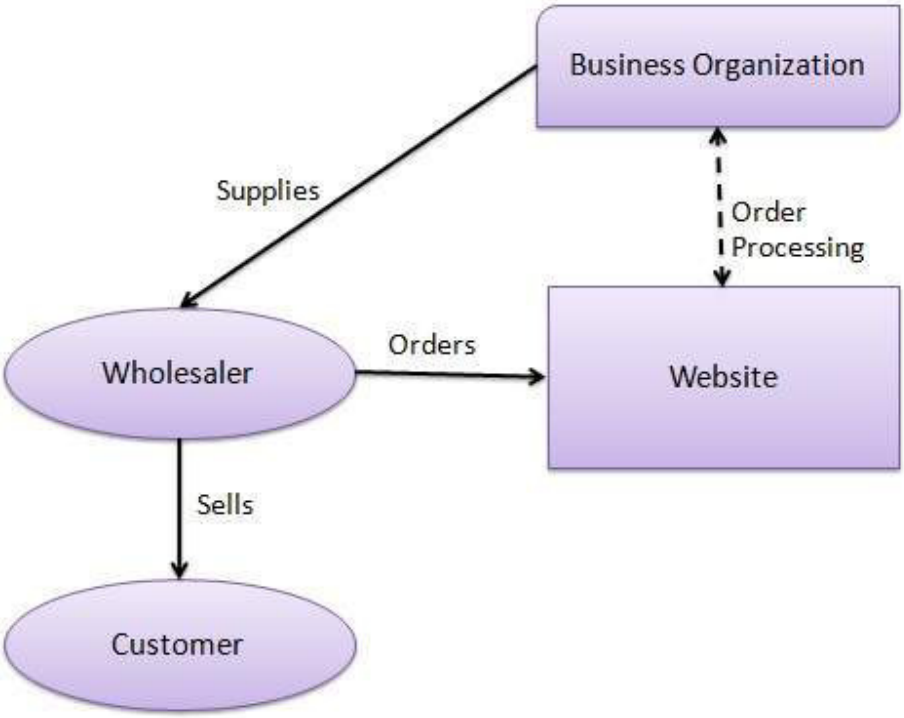
It is a secure protocol developed by MasterCard and Visa in collaboration. Theoretically, it is the best security protocol. It has the following components –

- **Card Holder's Digital Wallet Software** – Digital Wallet allows the card holder to make secure purchases online via point and click interface.

- **Merchant Software –** This software helps merchants to communicate with potential customers and financial institutions in a secure manner.
- **Payment Gateway Server Software –** Payment gateway provides automatic and standard payment process. It supports the process for merchant's certificate request.
- **Certificate Authority Software –** This software is used by financial institutions to issue digital certificates to card holders and merchants, and to enable them to register their account agreements for secure electronic commerce.

E-Commerce - B2B Model

A website following the B2B business model sells its products to an intermediate buyer who then sells the products to the final customer. As an example, a wholesaler places an order from a company's website and after receiving the consignment, it sells the endproduct to the final customer who comes to buy the product at the wholesaler's retail outlet.



B2B identifies both the seller as well as the buyer as business entities. B2B covers a large number of applications, which enables business to form relationships with their distributors, re-sellers, suppliers, etc. Following are the leading items in B2B eCommerce.

- Electronics
- Shipping and Warehousing

- Motor Vehicles
- Petrochemicals
- Paper
- Office products
- Food
- Agriculture

Key Technologies

Following are the key technologies used in B2B e-commerce –

- **Electronic Data Interchange (EDI) –** EDI is an inter-organizational exchange of business documents in a structured and machine processable format.
- **Internet –** Internet represents the World Wide Web or the network of networks connecting computers across the world.
- **Intranet –** Intranet represents a dedicated network of computers within a single organization.
- **Extranet –** Extranet represents a network where the outside business partners, suppliers, or customers can have a limited access to a portion of enterprise intranet/network.
- **Back-End Information System Integration –** Back-end information systems are database management systems used to manage the business data.

Architectural Models

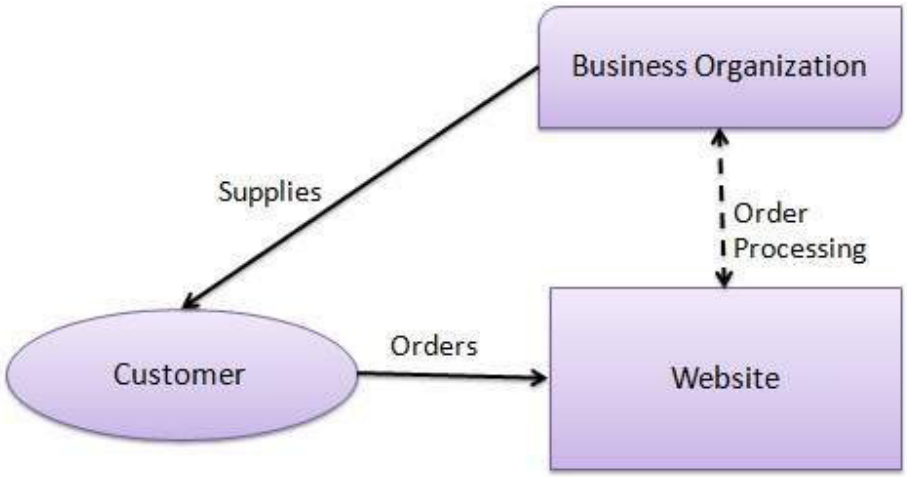
Following are the architectural models in B2B e-commerce –

- **Supplier Oriented marketplace –** In this type of model, a common marketplace provided by supplier is used by both individual customers as well as business users. A supplier offers an e-stores for sales promotion.

- **Buyer Oriented marketplace –** In this type of model, buyer has his/her own market place or e-market. He invites suppliers to bid on product's catalog. A Buyer company opens a bidding site.
- **Intermediary Oriented marketplace –** In this type of model, an intermediary company runs a market place where business buyers and sellers can transact with each other.

E-Commerce - B2C Model

In B2C model, a business website is a place where all the transactions take place directly between a business organization and a consumer.



In the B2C model, a consumer goes to the website, selects a catalog, orders the catalog, and an email is sent to the business organization. After receiving the order, goods are dispatched to the customer. Following are the key features of the B2C model –

- Heavy advertising required to attract customers.
- High investments in terms of hardware/software.
- Support or good customer care service.

Consumer Shopping Procedure

Following are the steps used in B2C e-commerce –

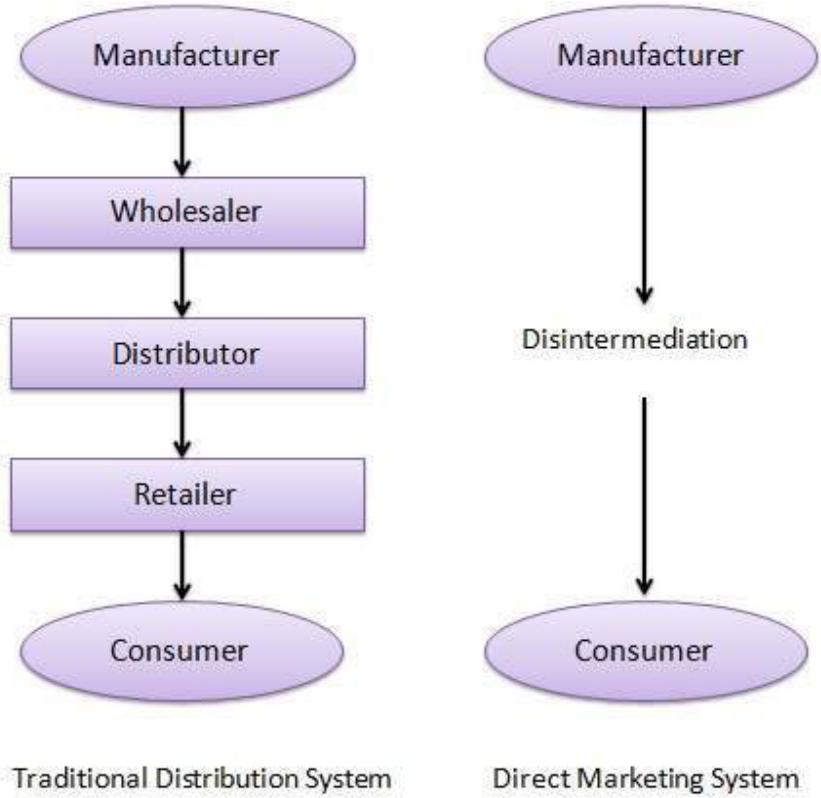
A consumer –

- determines the requirement.
- searches available items on the website meeting the requirment.

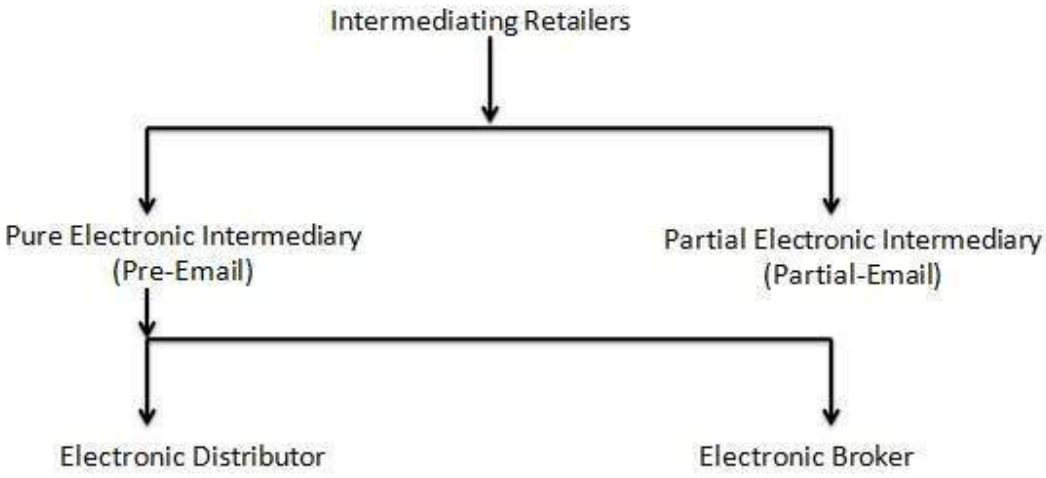
- compares similar items for price, delivery date or any other terms.
- places the order.
- pays the bill.
- receives the delivered item and review/inspect them.
- consults the vendor to get after service support or returns the product if not satisfied with the delivered product.

Disintermediation and Re-intermediation

In traditional commerce, there are intermediating agents like wholesalers, distributors, and retailers between the manufacturer and the consumer. In B2C websites, a manufacturer can sell its products directly to potential consumers. This process of removal of business layers responsible for intermediary functions is called **disintermediation**.

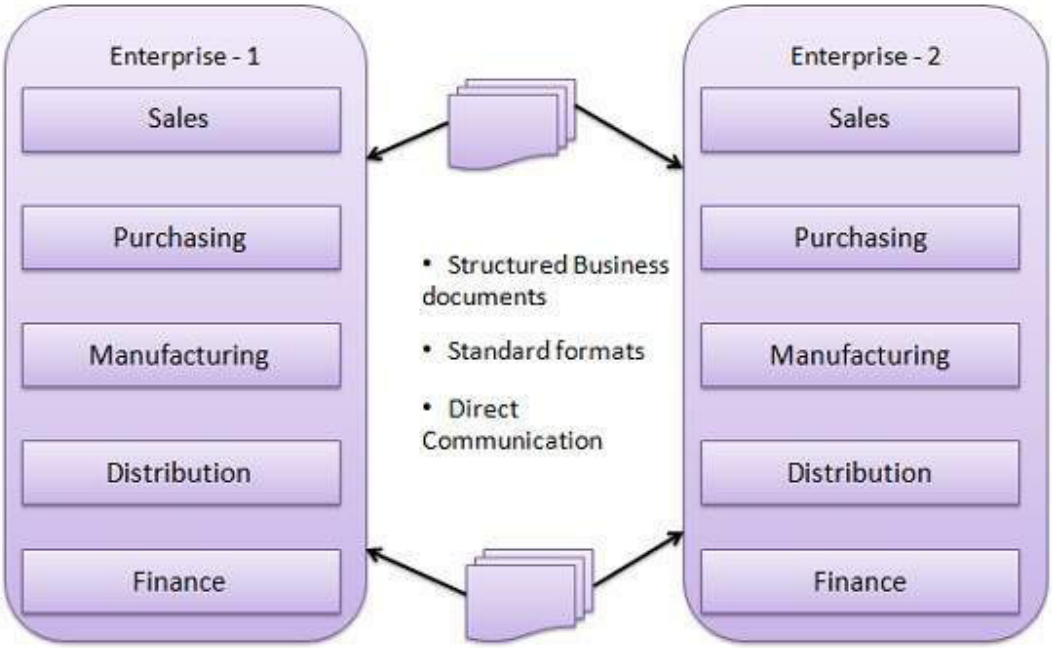


Nowadays, new electronic intermediary breeds such as e-mall and product selection agents are emerging. This process of shifting of business layers responsible for intermediary functions from traditional to electronic mediums is called **re-intermediation**.



E-Commerce - EDI

EDI stands for Electronic Data Exchange. EDI is an electronic way of transferring business documents in an organization internally, between its various departments or externally with suppliers, customers, or any subsidiaries. In EDI, paper documents are replaced with electronic documents such as word documents, spreadsheets, etc.



EDI Documents

Following are the few important documents used in EDI –

- Invoices
- Purchase orders
- Shipping Requests
- Acknowledgement

- Business Correspondence letters
- Financial information letters

Steps in an EDI System

Following are the steps in an EDI System.

- A program generates a file that contains the processed document.
- The document is converted into an agreed standard format.
- The file containing the document is sent electronically on the network.
- The trading partner receives the file.
- An acknowledgement document is generated and sent to the originating organization.

Advantages of an EDI System

Following are the advantages of having an EDI system.

- **Reduction in data entry errors. –** Chances of errors are much less while using a computer for data entry.
- **Shorter processing life cycle –** Orders can be processed as soon as they are entered into the system. It reduces the processing time of the transfer documents.
- **Electronic form of data –** It is quite easy to transfer or share the data, as it is present in electronic format.
- **Reduction in paperwork –** As a lot of paper documents are replaced with electronic documents, there is a huge reduction in paperwork.
- **Cost Effective –** As time is saved and orders are processed very effectively, EDI proves to be highly cost effective.
- **Standard Means of communication –** EDI enforces standards on the content of data and its format which leads to clearer communication.

What is HTML

HTML is an acronym which stands for Hyper Text Markup Language. Let's see what is Hyper Text and what is Markup Language?

Hyper Text: Hyper Text simply means "Text within Text". A text has a link within it, is a hypertext. Every time when you click on a word which brings you to a new webpage, you have clicked on a hypertext.

Markup language: A markup language is a programming language that is used make text more interactive and dynamic. It can turn a text into images, tables, links etc.

An HTML document is made of many HTML tags and each HTML tag contains different content.

Let's see a simple example of HTML.

```
<!DOCTYPE>

<html>

<body>

<h1>Write Your First Heading</h1>

<p>Write Your First Paragraph.</p>

</body>

</html>
```

Description of HTML Example

DOCTYPE: It defines the document type.

html : Text between html tag describes the web document.

body : Text between body tag describes the body content of the page that is visible to the end user.

h1 : Text between h1 tag describes the heading of the webpage.

p : Text between p tag describes the paragraph of the webpage.

Brief History of HTML

In the late 1980's , A physicist, Tim Berners-Lee who was a contractor at CERN, proposed a system for CERN researchers. In 1989, he wrote a memo proposing an internet based hypertext system.

Tim Berners-Lee is known as *father of HTML*. The first available description of HTML was a document called "HTML Tags" proposed by Tim in late 1991.

Features of HTML

1) It is a very **easy and simple** language. It can be easily understood and modified.

2) It is very easy to make **effective presentation** with HTML because it has a lot of *formatting tags*.

3) It is a **markup language** so it provides a flexible way to design web pages along with the text.

4) It facilitates programmers to add **link** on the web pages (by *html anchor tag*) , so it enhances the interest of browsing of the user.

5) It is **platform-independent** because it can be displayed on any platform like Windows, Linux and Macintosh etc.

6) It facilitates the programmer to add **Graphics, Videos, and Sound** to the web pages which makes it more attractive and interactive.

HTML Tags

HTML tags contain three main parts: opening tag, content and closing tag. But some HTML tags are unclosed tags.

When a web browser reads an HTML document, browser reads it from top to bottom and left to right. HTML tags are used to create HTML documents and render their properties. Each HTML tags have different properties.

Syntax

<tag> content </tag>

HTML Tag Examples

Note: HTML Tags are always written in lowercase letters. The basic HTML tags are given below:

 Paragraph Tag

<h2> Heading Tag </h2>

 Bold Tag

 Italic Tag

<u> Underline Tag</u>

Unclosed HTML Tags

Some HTML tags are not closed, for example br and hr.

**
 Tag**: br stands for break line, it breaks the line of the code.

<hr> Tag: hr stands for Horizontal Rule. This tag is used to put a line across the webpage.

HTML Meta Tags

DOCTYPE, title, link, meta and style

HTML Text Tags

, <h1>, <h2>, <h3>, <h4>, <h5>, <h6>, , , <abbr>, <acronym>, <address>, <bdo>, <blockquote>, <cite>, <q>, <code>, <ins>, <del>, <dfn>, <kbd>, <pre>, <samp>, <var> and

HTML Link Tags

<a> and <base>

HTML Image and Object Tags

<img>, <area>, <map>, <param> and <object>

HTML List Tags

, <ol>, <li>, <dl>, <dt> and <dd>

HTML Table Tags

table, tr, td, th, tbody, thead, tfoot, col, colgroup and caption

HTML Form Tags

form, input, textarea, select, option, optgroup, button, label, fieldset and legend

HTML Scripting Tags

script and noscript

HTML Formatting

HTML Formatting

HTML Formatting is *a process of formatting text for better look and feel*. There are many formatting tags in HTML. These tags are used to make text bold, italicized, or underlined. There are almost 12 options available that how text appears in HTML and XHTML.

Here, we are going to learn 12 HTML formatting tags.

1) Bold Text

If you write anything within ..... element, is shown in bold letters.

See this example:

1. ** **Write Your First Paragraph in bold text.** **

Output:

Write Your First Paragraph in bold text.

2) Italic Text

If you write anything within ..... element, is shown in italic letters.

See this example:

1. ** **Write Your First Paragraph in italic text.** **

Output:

Write Your First Paragraph in italic text.

3) HTML Marked formatting

If you want to mark or highlight a text, you should write the content within <mark>.....</mark>.

See this example:

1. **<h2>** I want to put a **<mark>** Mark**</mark>** on your face**</h2>**

Output:

I want to put a Mark on your face

4) Underlined Text

If you write anything within <u>.....</u> element, is shown in underlined text.

See this example:

1. ** <u>**Write Your First Paragraph in underlined text.**</u> **

Output:

<u>Write Your First Paragraph in underlined text.</u>

5) Strike Text

Anything written within <strike>.....</strike> element is displayed with strikethrough. It is a thin line which cross the statement.

See this example:

```
1.  <p> <strike>Write Your First Paragraph with strikethrough</strike>.</p>
```

Output:

~~Write Your First Paragraph with strikethrough.~~

6) Monospaced Font

If you want that each letter has the same width then you should write the content within <tt>.....</tt> element.

Note: We know that most of the fonts are known as variable-width fonts because different letters have different width. (for example: 'w' is wider than 'i'). Monospaced Font provides similar space among every letter.

See this example:

```
1.  <p>Hello <tt>Write Your First Paragraph in monospaced font.</tt></p>
```

Output:

Hello Write Your First Paragraph in monospaced font.

7) Superscript Text

If you put the content within ^{.....} element, is shown in superscript ; means it is displayed half a character's height above the other characters.

See this example:

```
1. <p>Hello <sup>Write Your First Paragraph in superscript.</sup></p>
```

Output:

Hello Write Your First Paragraph in superscript.

8) Subscript Text

If you put the content within _{.....} element, is shown in subscript ; means it is displayed half a character's height below the other characters.

See this example:

```
1. <p>Hello <sub>Write Your First Paragraph in subscript.</sub></p>
```

Output:

Hello Write Your First Paragraph in subscript.

9) Deleted Text

Anything that puts within ~~.....~~ is displayed as deleted text.

See this example:

1. ** **Hello **~~**Delete your first paragraph.**~~ **

Output:

Hello ~~Delete your first paragraph.~~

10) Inserted Text

Anything that puts within <ins>.....</ins> is displayed as inserted text.

See this example:

1. ** ~~**Delete your first paragraph.**~~<ins>**Write another paragraph.

**</ins> **

Output:

~~Delete your first paragraph.~~Write another paragraph.

11) Larger Text

If you want to put your font size larger than the rest of the text then put the content within <big>.....</big>. It increase one font size larger than the previous one.

See this example:

1. ** **Hello **<big>**Write the paragraph in larger font.**</big> **

Output:

Hello Write the paragraph in larger font.

12) Smaller Text

If you want to put your font size smaller than the rest of the text then put the content within <small>.....</small>tag. It reduces one font size than the previous one.

See this example:

1. ** **Hello **<small>**Write the paragraph in smaller font.**</small> **

Test it Now

Output:

Hello Write the paragraph in smaller font.

HTML Heading

HTML Heading

A HTML heading or HTML h tag can be defined as a title or a subtitle which you want to display on the webpage. When you place the text within the heading tags <h1>.....</h1>, it is displayed on the browser in the bold format and size of the text depends on the number of heading.

There are six different HTML headings which are defined with the <h1> to <h6> tags.

h1 is the largest heading tag and h6 is the smallest one. So h1 is used for most important heading and h6 is used for least important.

See this example:

```
<h1>Heading no. 1</h1>
<h2>Heading no. 2</h2>
<h3>Heading no. 3</h3>
<h4>Heading no. 4</h4>
<h5>Heading no. 5</h5>
<h6>Heading no. 6</h6>
```

Output:

Heading no. 1

Heading no. 2

Heading no. 3

Heading no. 4

Heading no. 5

Heading no. 6

HTML Paragraph

HTML paragraph or HTML p tag is used to define a paragraph in a webpage. Let's take a simple example to see how it work. It is a notable point that a browser itself add an empty line before and after a paragraph.

See this example:

```
1. <p>This is first paragraph.</p>
2. <p>This is second paragraph.</p>
3. <p>This is third paragraph.</p>
```

Test it Now

Output:

This is first paragraph.

This is second paragraph.

This is third paragraph.

Space inside HTML Paragraph

If you put a lot of spaces inside the HTML p tag, browser removes extra spaces and extra line while displaying the page. The browser counts number of spaces and lines as a single one.

<p>

I am

going to provide

you a tutorial on HTML

and hope that it will

be very beneficial for you.

** **

** **

Look, I put here a lot

of spaces but I know, Browser will ignore it.

** **

** **

You cannot determine the display of HTML** **

** **because resized windows may create different result.

** **

Output:

I am going to provide you a tutorial on HTML and hope that it will be very beneficial for you.

Look, I put here a lot of spaces but I know, Browser will ignore it.

You cannot determine the display of HTML

because resized windows may create different result.

As you can see, all the extra lines and unnecessary spaces are removed by the browser.

HTML Anchor

The **HTML anchor tag** defines *a hyperlink that links one page to another page*. The "href" attribute is the most important attribute of the HTML a tag.

href attribute of HTML anchor tag

The href attribute is used to define the address of the file to be linked. In other words, it points out the destination page.

The syntax of HTML anchor tag is given below.

 Link Text

Let's see an example of HTML anchor tag.

```
1.  <a href="second.html">Click for Second Page</a>
```

Appearance of HTML anchor tag

An **unvisited link** is displayed underlined and blue.

A **visited link** displayed underlined and purple.

An **active link** is underlined and red.

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HTML Image

HTML img tag is used to display image on the web page. HTML img tag is an empty tag that contains attributes only, closing tags are not used in HTML image element.

Let's see an example of HTML image.

```
<h2>HTML Image Example</h2>

<img src="good_morning.jpg" alt="Good Morning Friends"/>
```

Output:

Attributes of HTML img tag

The src and alt are important attributes of HTML img tag. All attributes of HTML image tag are given below.

1) src

It is a necessary attribute that describes the source or path of the image. It instructs the browser where to look for the image on the server.

The location of image may be on the same directory or another server.

2) alt

The alt attribute defines an alternate text for the image, if it can't be displayed. The value of the alt attribute describe the image in words. The alt attribute is considered good for SEO prospective.

3) width

It is an optional attribute which is used to specify the width to display the image. It is not recommended now. You should apply CSS in place of width attribute.

4) height

It specifies the height of the image. The HTML height attribute also supports iframe, image and object elements. It is not recommended now. You should apply CSS in place of height attribute.

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HTML Table

HTML table tag is used to display data in tabular form (row * column). There can be many columns in a row.

HTML tables are used to manage the layout of the page e.g. header section, navigation bar, body content, footer section etc. But it is recommended to use div tag over table to manage the layout of the page .

HTML Table Tags

Tag	Description
<table>	It defines a table.
<tr>	It defines a row in a table.
<th>	It defines a header cell in a table.
<td>	It defines a cell in a table.
<caption>	It defines the table caption.
<colgroup>	It specifies a group of one or more columns in a table for formatting.
<col>	It is used with <colgroup> element to specify column properties for each column.
<tbody>	It is used to group the body content in a table.
<thead>	It is used to group the header content in a table.
<tfooter>	It is used to group the footer content in a table.

HTML Table Example

Let's see the example of HTML table tag. It output is shown above.

<table>

```
<tr><th>First_Name</th><th>Last_Name</th><th>Marks</th></tr>

<tr><td>Sonoo</td><td>Jaiswal</td><td>60</td></tr>

<tr><td>James</td><td>William</td><td>80</td></tr>

<tr><td>Swati</td><td>Sironi</td><td>82</td></tr>

<tr><td>Chetna</td><td>Singh</td><td>72</td></tr>

</table>
```

Output:

First_Name	Last_Name	Marks
Sonoo	Jaiswal	60
James	William	80
Swati	Sironi	82
Chetna	Singh	72

In the above html table, there are 5 rows and 3 columns = 5 * 3 = 15 values.

HTML Table with Border

There are two ways to specify border for HTML tables.

1. By border attribute of table in HTML
2. By border property in CSS

1) HTML Border attribute

You can use border attribute of table tag in HTML to specify border. But it is not recommended now.

```
<table border="1">

<tr><th>First_Name</th><th>Last_Name</th><th>Marks</th></tr>

<tr><td>Sonoo</td><td>Jaiswal</td><td>60</td></tr>

<tr><td>James</td><td>William</td><td>80</td></tr>

<tr><td>Swati</td><td>Sironi</td><td>82</td></tr>

<tr><td>Chetna</td><td>Singh</td><td>72</td></tr>

</table>
```

Output:

First_Name	Last_Name	Marks
Sonoo	Jaiswal	60
James	William	80
Swati	Sironi	82
Chetna	Singh	72

---

2) CSS Border property

It is now recommended to use border property of CSS to specify border in table.

```
<style>
table, th, td {
   border: 1px solid black;
}
</style>
```

You can collapse all the borders in one border by border-collapse property.

```
<style>
```

```
table, th, td {
border: 2px solid black;
border-collapse: collapse;
}
</style>
```

Output:

Name	Last Name	Marks
Sonoo	Jaiswal	60
James	William	80
Swati	Sironi	82
Chetna	Singh	72

HTML Table with cell padding

You can specify padding for table header and table data by two ways:

1. By cellpadding attribute of table in HTML

2. By padding property in CSS

The cellpadding attribute of HTML table tag is obselete now. It is recommended to use CSS. So let's see the code of CSS.

```
<style>

table, th, td {

   border: 1px solid pink;

   border-collapse: collapse;

}

th, td {

   padding: 10px;

}

</style>
```

Output:

Name	Last Name	Marks

Sonoo	Jaiswal	60
James	William	80
Swati	Sironi	82
Chetna	Singh	72

HTML Table with colspan

If you want to make a cell span more than one column, you can use the colspan attribute.

Let's see the example that span two columns.

CSS code:

```
<style>

table, th, td {

  border: 1px solid black;
```

```
    border-collapse: collapse;
}
th, td {
    padding: 5px;
}
</style>
```

HTML code:

```
<table style="width:100%">
  <tr>
    <th>Name</th>
    <th colspan="2">Mobile No.</th>
  </tr>
  <tr>
    <td>Ajeet Maurya</td>
    <td>7503520801</td>
    <td>9555879135</td>
```

```
</tr>
</table>
```

Output:

Name	**Mobile No.**	
Ajeet Maurya	7503520801	9555879135

HTML Table with rowspan

If you want to make a cell span more than one row, you can use the rowspan attribute.

Let's see the example that span two rows.

CSS code:

```
<style>
table, th, td {
  border: 1px solid black;
  border-collapse: collapse;
```

```
}
th, td {
    padding: 10px;
}
</style>
```

HTML code:

```
<table>
<tr><th>Name</th><td>Ajeet Maurya</td></tr>
<tr><th rowspan="2">Mobile No.</th><td>7503520801</td></tr>
<tr><td>9555879135</td></tr>
</table>
```

Output:

Name	Ajeet Maurya

Mobile No.	7503520801
	9555879135

HTML table with caption

HTML caption is diplayed above the table. It must be used after table tag only.

```
<table>
<caption>Student Records</caption>
<tr><th>First_Name</th><th>Last_Name</th><th>Marks</th></tr>
<tr><td>Vimal</td><td>Jaiswal</td><td>70</td></tr>
<tr><td>Mike</td><td>Warn</td><td>60</td></tr>
<tr><td>Shane</td><td>Warn</td><td>42</td></tr>
<tr><td>Jai</td><td>Malhotra</td><td>62</td></tr>
</table>
```

Styling HTML table even and odd cells

CSS code:

```
<style>
table, th, td {
    border: 1px solid black;
    border-collapse: collapse;
}
th, td {
    padding: 10px;
}
table#alter tr:nth-child(even) {
    background-color: #eee;
}
table#alter tr:nth-child(odd) {
    background-color: #fff;
}
table#alter th {
```

```
    color: white;
    background-color: gray;
}
</style>
```

Output:

First_Name	Last_Name	Marks
Sonoo	Jaiswal	60
James	William	80
Swati	Sironi	82
Chetna	Singh	72

HTML Lists

HTML Lists are used to specify lists of information. All lists may contain one or more list elements. There are three different types of HTML lists:

1. Ordered List or Numbered List (ol)
2. Unordered List or Bulleted List (ul)
3. Description List or Definition List (dl)

HTML Ordered List or Numbered List

In the ordered HTML lists, all the list items are marked with numbers. It is known as numbered list also. The ordered list starts with <ol> tag and the list items start with <li> tag.

```
<ol>
 <li>Aries</li>
 <li>Bingo</li>
 <li>Leo</li>
 <li>Oracle</li>
```

```
</ol>
```

Output:

1. Aries
2. Bingo
3. Leo
4. Oracle

HTML Unordered List or Bulleted List

In HTML Unordered list, all the list items are marked with bullets. It is also known as bulleted list also. The Unordered list starts with <ul> tag and list items start with the <li> tag.

```
<ul>
 <li>Aries</li>
 <li>Bingo</li>
 <li>Leo</li>
 <li>Oracle</li>
</ul>
```

Output:

- Aries
- Bingo
- Leo
- Oracle

HTML Description List or Definition List

HTML Description list is also a list style which is supported by HTML and XHTML. It is also known as definition list where entries are listed like a dictionary or encyclopedia.

The definition list is very appropriate when you want to present glossary, list of terms or other name-value list.

The HTML definition list contains following three tags:

1. **<dl> tag** defines the start of the list.
2. **<dt> tag** defines a term.
3. **<dd> tag** defines the term definition (description).

<dl>

```
<dt>Aries</dt>
<dd>-One of the 12 horoscope sign.</dd>
<dt>Bingo</dt>
<dd>-One of my evening snacks</dd>
<dt>Leo</dt>
<dd>-It is also an one of the 12 horoscope sign.</dd>
<dt>Oracle</dt>
<dd>-It is a multinational technology corporation.</dd>
</dl>
```

Output:

Aries

-One of the 12 horoscope sign.

Bingo

-One of my evening snacks

Leo

-It is also an one of the 12 horoscope sign.

Oracle

-It is a multinational technology corporation.

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HTML Ordered List | HTML Numbered List

HTML Ordered List or Numbered List displays elements in numbered format. The HTML ol tag is used for ordered list. There can be different types of numbered list:

- Numeric Number (1, 2, 3)
- Capital Roman Number (I II III)
- Small Romal Number (i ii iii)
- Capital Alphabet (A B C)
- Small Alphabet (a b c)

To represent different ordered lists, there are 5 types of attributes in <ol> tag.

Type	**Description**
Type "1"	This is the default type. In this type, the list items are numbered with numbers.
Type "I"	In this type, the list items are numbered with upper case roman numbers.
Type "i"	In this type, the list items are numbered with lower case roman numbers.
Type "A"	In this type, the list items are numbered with upper case letters.
Type "a"	In this type, the list items are numbered with lower case letters.

HTML Ordered List Example

Let's see the example of HTML ordered list that displays 4 topics in numbered list. Here we are not defining type="1" because it is the default type.

```
<ol>
 <li>HTML</li>
 <li>Java</li>
 <li>JavaScript</li>
 <li>SQL</li>
</ol>
```

Output:

1. HTML
2. Java
3. JavaScript
4. SQL

ol type="I"

Let's see the example to display list in roman number uppercase.

```
<ol type="I">
 <li>HTML</li>
 <li>Java</li>
 <li>JavaScript</li>
 <li>SQL</li>
</ol>
```

Test it Now

Output:

I. HTML
II. Java
III. JavaScript
IV. SQL

ol type="i"

Let's see the example to display list in roman number lowercase.

```
<ol type="i">
```

```
<li>HTML</li>
<li>Java</li>
<li>JavaScript</li>
<li>SQL</li>
</ol>
```

Output:

i. HTML
ii. Java
iii. JavaScript
iv. SQL

ol type="A"

Let's see the example to display list in alphabet uppercase.

```
<ol type="A">
<li>HTML</li>
<li>Java</li>
```

```
<li>JavaScript</li>
<li>SQL</li>
</ol>
```

Output:

A. HTML

B. Java

C. JavaScript

D. SQL

ol type="a"

Let's see the example to display list in alphabet lowercase.

```
<ol type="a">
<li>HTML</li>
<li>Java</li>
<li>JavaScript</li>
<li>SQL</li>
```

```
</ol>
```

Output:

a. HTML

b. Java

c. JavaScript

d. SQL

start attribute

The start attribute is used with ol tag to specify from where to start the list items.

<ol type="1" start="5"> : It will show numeric values starting with "5".

<ol type="A" start="5"> : It will show capital alphabets starting with "E".

<ol type="a" start="5"> : It will show lower case alphabets starting with "e".

<ol type="I" start="5"> : It will show Roman upper case value starting with "V".

<ol type="i" start="5"> : It will show Roman lower case value starting with "v".

```
<ol type="i" start="5">
 <li>HTML</li>
```

```
<li>Java</li>

<li>JavaScript</li>

<li>SQL</li>

</ol>
```

Output:

v. HTML

vi. Java

vii. JavaScript

viii. SQL

HTML Unordered List | HTML Bulleted List

HTML Unordered List or Bulleted List displays elements in bulleted format. The HTML ul tag is used for the unordered list. There can be 4 types of bulleted list:

- disc
- circle
- square
- none

To represent different ordered lists, there are 4 types of attributes in <ul> tag.

Type	Description
Type "disc"	This is the default style. In this style, the list items are marked with bullets.
Type "circle"	In this style, the list items are marked with circles.
Type "square"	In this style, the list items are marked with squares.
Type "none"	In this style, the list items are not marked .

HTML Unordered List Example

```
<ul>
 <li>HTML</li>
 <li>Java</li>
```

```
<li>JavaScript</li>

<li>SQL</li>

</ul>
```

Output:

- HTML
- Java
- JavaScript
- SQL

HTML Description List & HTML Definition List

HTML Description List or Definition List displays elements in definition form like in dictionary. The <dl>, <dt> and <dd> tags are used to define description list.

The 3 HTML description list tags are given below:

1. **<dl> tag** defines the description list.
2. **<dt> tag** defines data term.
3. **<dd> tag** defines data definition (description).

```
<dl>
 <dt>HTML</dt>
 <dd>is a markup language</dd>
 <dt>Java</dt>
 <dd>is a programming language and platform</dd>
<dt>JavaScript</dt>
<dd>is a scripting language</dd>
 <dt>SQL</dt>
 <dd>is a query language</dd>
```

```
</dl>
```

Output:

HTML
    is a markup language
Java
    is a programming language and platform
JavaScript
    is a scripting language
SQL
    is a query language

HTML Form

An **HTML form** is *a section of a document* which contains controls such as text fields, password fields, checkboxes, radio buttons, submit button, menus etc.

An HTML form facilitates the user to enter data that is to be sent to the server for processing.

Why use HTML Form

HTML forms are required if you want to collect some data from of the site visitor.

For example: If a user want to purchase some items on internet, he/she must fill the form such as shipping address and credit/debit card details so that item can be sent to the given address.

HTML Form Syntax

```
<form action="server url" method="get|post">

 //input controls e.g. textfield, textarea, radiobutton, button

</form>
```

HTML Form Tags

Let's see the list of HTML 5 form tags.

Tag	Description
<form>	It defines an HTML form to enter inputs by the used side.
<input>	It defines an input control.
<textarea>	It defines a multi-line input control.
<label>	It defines a label for an input element.
<fieldset>	It groups the related element in a form.
<legend>	It defines a caption for a <fieldset> element.
<select>	It defines a drop-down list.
<optgroup>	It defines a group of related options in a drop-down list.
<option>	It defines an option in a drop-down list.
<button>	It defines a clickable button.

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