

VBSCRIPT

VBScript("Microsoft Visual Basic Scripting Edition") is an Active Scripting language developed by Microsoft that is modeled on Visual Basic. It allows Microsoft Windows system administrators to generate powerful tools for managing computers with error handling, subroutines, and other advanced programming constructs. It can give the user complete control over many aspects of their computing environment.

VBScript uses the Component Object Model to access elements of the environment within which it is running; for example, the FileSystemObject (FSO) is used to create, read, update and delete files. VBScript has been installed by default in every desktop release of Microsoft Windows since Windows 98;^[1] in Windows Server since Windows NT 4.0 Option Pack;^[2] and optionally with Windows CE (depending on the device it is installed on).

A VBScript script must be executed within a host environment, of which there are several provided with Microsoft Windows, including: Windows Script Host (WSH), Internet Explorer (IE), and Internet Information Services (IIS).^[3] Additionally, the VBScript hosting environment is embeddable in other programs, through technologies such as the Microsoft Script Control (msscript.ocx).

JavaScript

JavaScript is a programming language commonly used in web development. It was originally developed by Netscape as a means to add dynamic and interactive elements to websites. While JavaScript is influenced by Java, the syntax is more similar to C and is based on ECMAScript, a scripting language developed by Sun Microsystems.

JavaScript is a client-side scripting language, which means the source code is processed by the client's web browser rather than on the web server. This means JavaScript functions can run after a web page has loaded without communicating with the server. For example, a JavaScript function may check a web form before it is submitted to make sure all the required fields have been filled out. The JavaScript code can produce an error message before any information is actually transmitted to the server.

Like server-side scripting languages, such as PHP and ASP, JavaScript code can be inserted anywhere within the HTML of a webpage. However, only the output of server-side code is displayed in the HTML, while JavaScript code remains fully visible in the source of the webpage. It can also be referenced in a separate .JS file, which may also be viewed in a browser.

Below is an example of a basic JavaScript function that adds two numbers. The function is called with the parameters 7 and 11. If the code below were included in the HTML of a webpage, it would display the text "18" in an alert box.

```
<script>

function sum(a,b)
{
    return a + b;
}
```

```
}  
  
vartotal=sum(7,11);  
  
alert(total);  
  
</script>
```

JavaScript functions can be called within `<script>` tags or when specific events take place. Examples include `onClick`, `onMouseDown`, `onMouseUp`, `onKeyDown`, `onKeyUp`, `onFocus`, `onBlur`, `onSubmit`, and many others. While standard JavaScript is still used for performing basic client-side functions, many web developers now prefer to use JavaScript libraries like jQuery to add more advanced dynamic elements to websites.

Document type definition

A document type definition (DTD) is a set of markup declarations that define a document type for an SGML-family markup language (GML, SGML, XML, HTML).

A DTD defines the valid building blocks of an XML document. It defines the document structure with a list of validated elements and attributes. A DTD can be declared inline inside an XML document, or as an external reference.

XML uses a subset of SGML DTD. As of 2009, newer XML namespace-aware schema languages (such as W3C XML Schema and ISO RELAX NG) have largely superseded DTDs. A namespace-aware version of DTDs is being developed as Part 9 of ISO DSDL. DTDs persist in applications that need special publishing characters, such as the XML and HTML Character Entity References, which derive from larger sets defined as part of the ISO SGML standard effort.

HTML is a forgiving language. It tolerates a host of sins, from imprecise markup to altogether missing elements, and can still generate a webpage in the browser. XML, on the other hand, is basically a tyrant. Violate even the most trivial rule, and the browser or your application will crash. Some people find comfort in the uncompromising nature of XML, because it won't work unless you build it correctly. It's great to get instant feedback when you do something wrong!

There are nine basic rules for building good XML:

1. All XML must have a root element.
2. All tags must be closed.
3. All tags must be properly nested.
4. Tag names have strict limits.
5. Tag names are case sensitive.
6. Tag names cannot contain spaces.
7. Attribute values must appear within quotes ("").
8. White space is preserved.

9. HTML tags should be avoided(optional).

XML Applications

We've seen a lot of theory in this chapter, so I'm going to spend the rest of this chapter taking a look at how XML is used today in the real world. The world of XML is huge these days; in fact, XML is now used internally even in Netscape and Microsoft products, as well as in installations of programming languages such as Perl. You can find a good list of organizations that produce their own XML-based languages at http://www.xml.org/xml/marketplace_company.jsp.

It's useful and encouraging to see how XML is being used today in these XML-based languages. Here's a new piece of terminology: As you know, XML is a meta-markup language, so it's actually used to create languages. The languages so created are applications of XML; as a result, they're called XML applications.

The term XML application means an application of XML to a specific domain, such as MathML, the mathematics markup language; it does not refer to a program that uses XML (a fact that causes a lot of confusion among people who know nothing about XML).

URL

A Uniform Resource Locator (URL), colloquially termed a web address,^[1] is a reference to a web resource that specifies its location on a computer network and a mechanism for retrieving it. A URL is a specific type of Uniform Resource Identifier (URI),^{[2][3]} although many people use the two terms interchangeably.^{[4][a]} URLs occur most commonly to reference web pages (http), but are also used for file transfer (ftp), email (mailto), database access (JDBC), and many other applications.

ABOUT EMAIL NETWORKS

eMail Networks is a San Diego based company that provides self service and full service, permission based (opt in) email marketing and e-communication services for businesses and organizations around the globe. We provide the experience, technology, and strategic planning necessary to ensure that our clients have successful email marketing campaigns.

Why Use Us?

Our email marketing system is the industry leader, serving many types of organizations by providing them with cost effective email communications. The system allows organizations to spend pennies on the dollar while utilizing technology that will change the future of business and school communications.

Our Technology

We provide a hosted, web based application (ASP) for planning, executing and measuring email campaigns.

Our Experience

We have over 10 years of email communication experience and marketing experience working with many types of organizations.

Our Service

We provide a level of service and training that will meet or exceed your expectations.

The eMail Networks system allows you to deliver your information and messages to your subscribers using your existing logos and organization's "look and feel". eMail Networks will work with your organization to build a customizable form that captures the email addresses and interests of clients, customers and members. You will have the ability to better understand how to service your consumers' needs. You will also have the ability to segment and communicate to specific clients, customers and members.

E-mail Protocols

E-mail Protocols are set of rules that help the client to properly transmit the information to or from the mail server. Here in this tutorial, we will discuss various protocols such as SMTP, POP, and IMAP.

SMTP

SMTP stands for Simple Mail Transfer Protocol. It was first proposed in 1982. It is a standard protocol used for sending e-mail efficiently and reliably over the internet.

Key Points:

- SMTP is application level protocol.
- SMTP is connection oriented protocol.
- SMTP is text based protocol.
- It handles exchange of messages between e-mail servers over TCP/IP network.
- Apart from transferring e-mail, SMTP also provides notification regarding incoming mail.
- When you send e-mail, your e-mail client sends it to your e-mail server which further contacts the recipient mail server using SMTP client.
- These SMTP commands specify the sender's and receiver's e-mail address, along with the message to be send.
- The exchange of commands between servers is carried out without intervention of any user.
- In case, message cannot be delivered, an error report is sent to the sender which makes SMTP a reliable protocol.

SMTP Commands

The following table describes some of the SMTP commands:

S.N. Command Description

1 HELLO

This command initiates the SMTP conversation.

2 EHELLO

This is an alternative command to initiate the conversation. ESMTP indicates that the sender server wants to use extended SMTP protocol.

3 MAIL FROM

This indicates the sender's address.

4 RCPT TO

It identifies the recipient of the mail. In order to deliver similar message to multiple users this command can be repeated multiple times.

5 SIZE

This command let the server know the size of attached message in bytes.

6 DATA

The DATA command signifies that a stream of data will follow. Here stream of data refers to the body of the message.

7 QUIT

This commands is used to terminate the SMTP connection.

8 VERFY

This command is used by the receiving server in order to verify whether the given username is valid or not.

9 EXPN

It is same as VRFY, except it will list all the users name when it used with a distribution list.

IMAP

IMAP stands for Internet Mail Access Protocol. It was first proposed in 1986. There exist five versions of IMAP as follows:

1. Original IMAP

2. IMAP2

3. IMAP3

4. IMAP2bis

5. IMAP4

Key Points:

- IMAP allows the client program to manipulate the e-mail message on the server without downloading them on the local computer.
- The e-mail is hold and maintained by the remote server.
- It enables us to take any action such as downloading, delete the mail without reading the

mail.It enables us to create, manipulate and delete remote message folders called mail boxes.

- IMAP enables the users to search the e-mails.
- It allows concurrent access to multiple mailboxes on multiple mail servers.

IMAP Commands

The following table describes some of the IMAP commands:

S.N. Command Description

1 IMAP_LOGIN

This command opens the connection.

2 CAPABILITY

This command requests for listing the capabilities that the server supports.

3 NOOP

This command is used as a periodic poll for new messages or message status updates during a period of inactivity.

4 SELECT

This command helps to select a mailbox to access the messages.

5 EXAMINE

It is same as SELECT command except no change to the mailbox is permitted.

6 CREATE

It is used to create mailbox with a specified name.

7 DELETE

It is used to permanently delete a mailbox with a given name.

8 RENAME

It is used to change the name of a mailbox.

9 LOGOUT

This command informs the server that client is done with the session. The server must send BYE untagged response before the OK response and then close the network connection.

POP

POP stands for Post Office Protocol. It is generally used to support a single client. There are several versions of POP but the POP 3 is the current standard.

Key Points

- POP is an application layer internet standard protocol.
- Since POP supports offline access to the messages, thus requires less internet usage time.
- POP does not allow search facility.
- In order to access the messaged, it is necessary to download them.

- It allows only one mailbox to be created on server.
- It is not suitable for accessing non mail data.
- POP commands are generally abbreviated into codes of three or four letters. Eg. STAT.

POP Commands

The following table describes some of the POP commands:

S.N.	Command	Description
1	LOGIN	This command opens the connection.
2	STAT	It is used to display number of messages currently in the mailbox.
3	LIST	It is used to get the summary of messages where each message summary is shown.
4	RETR	This command helps to select a mailbox to access the messages.
5	DELE	It is used to delete a message.
6	RSET	It is used to reset the session to its initial state.
7	QUIT	It is used to log off the session.

Comparison between POP and IMAP

S.N.	POP	IMAP
1	Generally used to support single client.	Designed to handle multiple clients.
2	Messages are accessed offline.	Messages are accessed online although it also supports offline mode.
3	POP does not allow search facility.	It offers ability to search emails.
4	All the messages have to be downloaded.	It allows selective transfer of messages to the client.
5	Only one mailbox can be created on the server.	Multiple mailboxes can be created on the server.
6	Not suitable for accessing non-mail data.	Suitable for accessing non-mail data i.e. attachment.
7	POP commands are generally abbreviated into codes of three or four letters. Eg. STAT.	IMAP commands are not abbreviated, they are full. Eg. STATUS.
8	It requires minimum use of server resources.	Clients are totally dependent on server.
9	Mails once downloaded cannot be accessed from some other location.	Allows mails to be accessed from multiple locations.
10	The e-mails are not downloaded automatically.	Users can view the headings and sender of e-mails and then decide to download.
11	POP requires less internet usage time.	IMAP requires more internet usage time.

TELNET

Telnet is an application protocol used on the Internet or local area network to provide a bidirectional interactive text-oriented communication facility using a virtual terminal connection. User data is interspersed in-band with Telnet control information in an 8-bit byte oriented data connection over the Transmission Control Protocol (TCP).

Telnet was developed in 1969 beginning with RFC 15, extended in RFC 855, and standardized as Internet Engineering Task Force (IETF) Internet Standard STD 8, one of the first Internet standards. The name stands for "teletype network".[1][2]

Historically, Telnet provided access to a command-line interface on a remote host. However, because of serious security concerns when using Telnet over an open network such as the Internet, its use for this purpose has waned significantly in favor of SSH.

The term telnet is also used to refer to the software that implements the client part of the protocol. Telnet client applications are available for virtually all computer platforms. Telnet is also used as a verb. To telnet means to establish a connection using the Telnet protocol, either with a command line client or with a graphical interface. For example, a common directive might be: "To change your password, telnet into the server, log in and run the passwd command." In most cases, a user would be telnetting into a Unix-like server system or a network device (such as a router).

public-domain software

Public-domain software refers to any program that is not copyrighted. Public-domain software is free and can be used without restrictions. The term public-domain software is often used incorrectly to include freeware, free software that is nevertheless copyrighted.

World Wide Web

The World Wide Web (WWW), commonly known as the Web, is an information system where documents and other web resources are identified by Uniform Resource Locators (URLs, such as <https://www.example.com/>), which may be interlinked by hypertext, and are accessible over the Internet.[1][2] The resources of the WWW are transferred via the Hypertext Transfer Protocol (HTTP) and may be accessed by users by a software application called a web browser and are published by a software application called a web server.

English scientist Tim Berners-Lee invented the World Wide Web in 1989. He wrote the first web browser in 1990 while employed at CERN near Geneva, Switzerland.[3][4] The browser was released outside CERN in 1991, first to other research institutions starting in January 1991 and then to the general public in August 1991. The World Wide Web has been central to the development of the Information Age and is the primary tool billions of people use to interact on the Internet.[5][6][7][8][9]

Web resources may be any type of downloaded media, but web pages are hypertext media that have been formatted in Hypertext Markup Language (HTML).[10] Such formatting allows for embedded hyperlinks that contain URLs and permit users to navigate to other web resources. In addition to text, web pages may contain references to images, video, audio, and software components which are displayed in the user's web browser as coherent pages of multimedia content.

Multiple web resources with a common theme, a common domain name, or both, make up a website. Websites are stored in computers that are running a program called a web server that responds to requests made over the Internet from web browsers running on a user's computer. Website content can be largely provided by a publisher, or interactively where users contribute content or the content depends upon the users or their actions. Websites may be provided for a myriad of informative, entertainment, commercial, governmental, or non-governmental reasons.

Web Browser

A web browser, or simply "browser," is an application used to access and view websites. Common web browsers include Microsoft Internet Explorer, Google Chrome, Mozilla Firefox, and Apple Safari.

The primary function of a web browser is to render HTML, the code used to design or "mark up" webpages. Each time a browser loads a web page, it processes the HTML, which may include text, links, and references to images and other items, such as cascading style sheets and JavaScript functions. The browser processes these items, then renders them in the browser window.

Early web browsers, such as Mosaic and Netscape Navigator, were simple applications that rendered HTML, processed form input, and supported bookmarks. As websites have evolved, so have web browser requirements. Today's browsers are far more advanced, supporting multiple types of HTML (such as XHTML and HTML 5), dynamic JavaScript, and encryption used by secure websites.

The capabilities of modern web browsers allow web developers to create highly interactive websites. For example, Ajax enables a browser to dynamically update information on a webpage without the need to reload the page. Advances in CSS allow browsers to display a responsive website layouts and a wide array of visual effects. Cookies allow browsers to remember your settings for specific websites.

While web browser technology has come a long way since Netscape, browser compatibility issues remain a problem. Since browsers use different rendering engines, websites may not appear the same across multiple browsers. In some cases, a website

may work fine in one browser, but not function properly in another. Therefore, it is smart to install multiple browsers on your computer so you can use an alternate browser if necessary.