WEB PROGRAMMING TECHNOLOGIES

Thursday, December 7, 2023 10:25 AM

1. Standalone vs distributed applications
2. 2 tier , 3 tier , n-tier applications
3. Different functionalities of each tier
4. Different technologies used in each tier

Client - Server in a Distributed application
IP - address = the number given to a machine in a network
= find / identify a machine in a network
= 192. 168.100.1 } LAN
252.198.120.12 } GLOBAL IP ADDRESS } on internet
PORT = the unique number that identified a program within a machine
= 3306 , 80 , 8080, 3000, 4500
= We can assign a port number to our program OR ELSE OS assigns next unique number

client = Program running on some IP and PORT
= it may hve any IP and port
= it will make a request to the server
= it will collect the resposne from the server

server = Program running on a FIXED IP and PORT
= Server runs continuously waiting for client request
= when request arrives -- server will process the request - send the response

The client and the server should AGREE upon **some rules** of
sending request and response to each other = PROTOCOL

HTTP = Hyper Text Transfer Protocol
RULES define the format of HTTP Request and format of HTTP Response

WEB CLIENT --- WEB SERVER }}}}} WEB APPLICATION

Web Client ------ HTTP Client ------ BROWSER
= Program running on some IP and PORT
= it may hve any IP and port
= it will make a request to the server
= it will collect the resposne from the server

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Request MUST be in HTTP format

Web Server --------- HTTP Server

Business Layer Technology	Web Server
Spring boot / Java	Tomcat , Oracle -weblogic , JBOSS, Glassfish
Exprees /Node	Express Server
DOT NET	IIS server
PHP	WAMP , XAMP
Python	Django , Flask

Program running on a FIXED IP and PORT

= Server runs continuously waiting for client request

= when request arrives -- server will process the request - send the response

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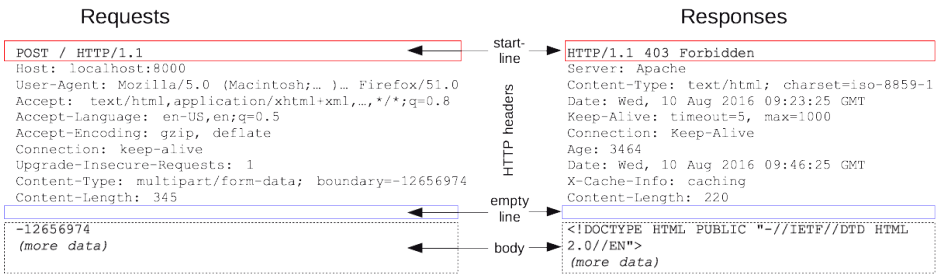
It understands HTTP request and sends
Http Response

Format of Http Request and Http Response



Presentation Layer = FRONT- END = UI

HTML = Hyper Text Markup Language

Markup = we will mark the text using TAGS
HTML processor will display the text as per the MARKUP
Where will the html be displayed ? BROWSER
Where will we WRITE the html ? File in some editor

WRITE THE FILE----
Open Editor --- VSCode
Create a SOURCE FILE for html = first.html [extensions could be .htm or .html]
Write text and markup tags in the file
Save the file in a d:\WPT\html

RUN THE FILE---
Open the file in the browser - automatically html processor
will read the file and **display** on the browser as per the tags/markup

Opening tag	<Tag>
Closing tag	</Tag>
Attributes are within opening tag	<Tag attrib1="v1" >
Tag can have 0 to n attributes	
Tag body is between opening and closing tag	Text OR other tags

<Tag attribute1="value" attribute2="value" > TAG BODY </Tag>

Html 5 has PREDEFINED TAGS !!!

Tags	
<html>	Root tag of html **DOCUMENT**

<head>	Subtag of <html> ---information about other files and titles
<body>	CONTENT to be displayed on browser content-space
<title>	The tag is included in <head> displays the title of the TAB
<b> <u> <i>	Bold underline and italics
 	Adding a line break , it is a self closing tag - No TAGBODY
	Partition the body of html and add a new line in the beginning
<p>	Paragraph - it adds new lines before and after the content
	This is simply a logical partition - no special view effects
<hr>	It is a self closing tag - it draws a line horizontally
<h1>…<h6>	Heading tags -- for different fonts
<pre>	This is a partition where source file enters and tabs are displayed on The browser
<img>	
Lists	
	Ordered list
	Unordered list
<table>	

HTML = markup language = it is used to decorate TEXT, **RENDER the text in display format**

Javascript = Vanilla Javascript = JS= add programming capacity = programming language

JS is an interpreted language!!
JS interpreter ---

1. Inbuilt in BROWSER
2. Node

To create a variable in JS

1. Variables are not strongly typed
2. Types of variables
   --- types are INFERRED as per the value assigned to variable
   --if variable is not assigned value then the value = undefined and type = undefined
3. Int and float are of "number" data type
4. Strings can be objects or primitive types
   x="flowers" string (primitive)
   x = 'flower' string (primitive)
   x=` flowers` string (useful for multiline strings) (primitive)
   x = new String("hello") a String object

5. x= true or x= false "boolean" data type
6. x=[10,20,30] array is an object

<u>Variable declarations in JS</u>

var x = globally scoped variable
let x = block scoped variable
const x }} constant declaration

HOISTING feature = if the variable declared with var is used before declaration there is no reference error

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Javascript functions

1. Simple functions
2. Default parameters
3. Rest parameters

Web Programming -----