

UNIT-5

PART-A

1. What is Ajax?

AJAX is an acronym for asynchronous JavaScript and XML. Ajax is a set of client side technologies that provides asynchronous communication between user interfaces and web server.

Advantages:

- asynchronous communication
- minimal data transfer
- server is not overloaded with unnecessary load.

2. What technologies are being used in AJAX?

AJAX uses four technologies,

- JavaScript
- XMLHttpRequest
- Document Object Model (DOM)
- Extensible HTML (XHTML)
- Cascading Style Sheets (CSS)

3. List the disadvantages of AJAX.

- AJAX application would be a mistake because search engines would not be able to index an AJAX application.
- Open Source: View source is allowed and anyone can view the code source written for AJAX.
- ActiveX requests are enabled only in Internet Explorer and newer latest browser.
- 4 The last disadvantage, XMLHttpRequest object itself. For a security reason you can only use to access information from the web host that serves initial pages. If you need to fetching information from another server, it's is not possible with in the AJAX.

4. Brief about asynchronous nature of AJAX.

- Asynchronous means that the script will send a request to the server, & continue it's execution without waiting for reply.
- As soon as reply is received a browser event is fired, which in turn allows the script to execute associated actions.
- Ajax knows when to pull data from server, because you tell it when to do it.

5. What is XHR?

- XMLHttpRequest (XHR) is an API that can be used by JavaScript, JScript, VBScript, and other web browser scripting languages to transfer and manipulate XML data to and from a webserver using HTTP, establishing an independent connection channel between a webpage's Client-Side and Server-Side.
- Update a web page without reloading the page
- Request data from a server - after the page has loaded

- Receive data from a server - after the page has loaded
- Send data to a server - in the background

6. What is the syntax to create AJAX objects?

AJAX uses the following syntax to create an object:

```
var myobject = new AjaxObject("page path");
```

The page path is the URL of the Web page containing the object that you want to call.

The URL must be of the same domain as the Web page.

7. What is a web service?

Web services are open standard (XML, SOAP, HTTP etc.) based Web applications that interact with other web applications for the purpose of exchanging data. It is OS and language independent. Web Services can convert the existing applications into Web-applications. A web service is a collection of open protocols and standards used for exchanging data between applications or systems.

8. Mention the characteristics of web service.

- Machine-to-machine interactions
- Loose coupling
- Interoperability
- Platform-independence
- Operating system-independence
- Language-independence
- Leveraging the architecture of the World Wide Web

9. What are the components of Web Services?

The basic web services platform is XML + HTTP.

- SOAP (Simple Object Access Protocol)
- UDDI (Universal Description, Discovery and Integration)
- WSDL (Web Services Description Language)

10. What are the different applications that could use web services?

- Data providers, for example, those that provide data such as a stock quote
- Business-to-business process integrations, such as those that send a purchase order from one company to another
- Integration with multiple partners, and even with competitors
- Enterprise application integration, for example, integration of a company's e-mail database with its human resources (HR) database

11. What are the advantages of web service?

- Exposing the Existing Function on the network
- Interoperability
- Standardized protocol
- Low Cost of Communication

12. What are RESTful web services?

- RESTful Web Services are REST architecture based web services.
- In REST Architecture everything is a resource. RESTful web services are lightweight, highly scalable and maintainable
- It is very commonly used to create APIs for web based applications.
- REST stands for REpresentational State Transfer.
- REST is web standards based architecture and uses HTTP Protocol for data communication

13. Define WSDL.

- WSDL stands for Web Services Description Language.
- It is the standard format for describing a web service.
- WSDL was developed jointly by Microsoft and IBM.
- To exchange information in a distributed environment.
- WSDL is used to describe web services
- WSDL is written in XML
- WSDL is a W3C recommendation from 26. June 2007

14. What are the elements of WSDL?

- Types– a container for data type definitions using some type system (such as XSD).
- Message– an abstract, typed definition of the data being communicated.
- Operation– an abstract description of an action supported by the service.
- Port Type–an abstract set of operations supported by one or more endpoints.
- Binding– a concrete protocol and data format specification for a particular port type.
- Port– a single endpoint defined as a combination of a binding and a network address.
- Service– a collection of related endpoints.

15. Define SOAP.

SOAP is an acronym for Simple Object Access Protocol. It is an XML-based messaging protocol for exchanging information among computers. It is an application of the XML specification. It is an application communication protocol

SOAP is a format for sending and receiving messages

SOAP is platform independent

SOAP is based on XML

SOAP is a W3C recommendation

16. Mention the features of SOAP.

- SOAP is a communication protocol designed to communicate via Internet.
- SOAP can extend HTTP for XML messaging.
- SOAP provides data transport for Web services.
- SOAP can exchange complete documents or call a remote procedure.

- SOAP can be used for broadcasting a message.
- SOAP is platform- and language-independent.
- SOAP is the XML way of defining what information is sent and how.
- SOAP enables client applications to easily connect to remote services and invoke remote methods.

17. List out the elements of SOAP.

- An Envelope element that identifies the XML document as a SOAP message
- A Header element that contains header information
- A Body element that contains call and response information
- A Fault element containing errors and status information.

18. Mention the advantages of SOAP.

Simplicity	Universal acceptance
Portability	Versatile
Firewall	flexible
Scalable	Interoperability
Friendliness	No bi-directional HTTP communication
Use of open standards	No distributed garbage collection
No Object activation.	No Object by reference.

19. Write the syntax rules of SOAP.

- A SOAP message MUST be encoded using XML
- A SOAP message MUST use the SOAP Envelope namespace
- A SOAP message MUST use the SOAP Encoding namespace
- A SOAP message must NOT contain a DTD reference
- A SOAP message must NOT contain XML Processing Instructions

20. Write the SOAP structure.

```
<?xml version="1.0"?>
<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope/"
soap:encodingStyle="http://www.w3.org/2003/05/soap-encoding">
<soap:Header> ... </soap:Header>
<soap:Body> ...
<soap:Fault> ... </soap:Fault>
</soap:Body>
</soap:Envelope>
```

21. Why do you want to describe a web service?

Web Services Description Language (WSDL) is a document written in XML. The document describes a Web service. It specifies the location of the service and the operations (or methods) the service exposes.

22. What are the four transmission types of WSDL?

- One-way
- Request–response
- Solicit–response
- Notification

23. List out some web service technologies.

- XML
- SOAP
- WSDL

24. Define the need for SOAP.

Simple Object Access Protocol (SOAP) is a protocol based on XML. It is used by the web services for exchange of information. The Client- Server communication is based on RPC. The HTTP does not design to handle the distributed objects that are required by the RPC. Hence another application protocol is build over HTTP which popularly known as SOAP. SOAP allows talking different applications that are running in two different operating systems.

25. Give an example of a web services registry and its function.

It refers to a place in which service providers can impart information about their offered services and potential clients can search for services Example: IBM - WebSphere Service Registry, Oracle Service Registry etc.,

26. What are the specifications of web service architecture?

The specifications are

- Standards based
- Modular
- Federated
- General purpose

27. Mention some of the disadvantages of web services.

Web services standards features such as transactions are currently nonexistent or still in their infancy compared to more mature distributed computing open standards such as CORBA. Web services may suffer from poor performance compared to other distributed computing approaches such as RMI, CORBA, or DCOM.

28. What are the steps involved in AJAX operation?

1. A client event occurs.

2. An XMLHttpRequest object is created.
3. The XMLHttpRequest object is configured.
4. The XMLHttpRequest object makes an asynchronous request to the Webserver.
5. The Webserver returns the result containing XML document.
6. The XMLHttpRequest object calls the callback() function and processes the result.
7. The HTML DOM is updated.

29. Define JSON.

JSON (JavaScript Object Notation) is a lightweight data-interchange format. It is easy for humans to read and write. It is easy for machines to parse and generate. It is based on a subset of the JavaScript Programming Language, Standard ECMA-262 3rd Edition - December 1999. JSON is a text format that is completely language independent but uses conventions that are familiar to programmers of the C-family of languages, including C, C++, C#, Java, JavaScript, Perl, Python, and many others. These properties make JSON an ideal data-interchange language.

30. What is JWSDP?

Java Web Service Developer Pack (JWSDP) is a tool. Using the JWSDP tool the simple implementation files written in java can be converted to Web Service.