***Chapter-22***

***43. What is xml?***

***Ans: xml is a language for describing data that is to be communicated from one computer to another. Data is described in the form of text that contains the data plus markup that defines the structure of data.***

***44. What is xml document?***

***Ans: xml document is a Unicode text file that contains data together with markup that defines the structure of data.***

***45. What is JAXP?***

***Ans: JAXP stands for Java API for xml Processing. It is a collection of classes that supports xml processing.***

***46. How many parts do have an xml document basically?***

***Ans: An xml document basically consists of two parts. They are: i) prolog ii) document body***

***47. What is prolog?***

***Ans: prolog is an optional part of an xml document. It provides necessary information for the interpretation of the contents of the document body.***

***48. What is document body?***

***Ans: document body is the main part of an xml document. It specifies an external document type definition (DTD) that identifies the markup declarations for the element used in the body of the document or explicit markup declarations or both.***

***49. What is DTD?***

***Ans: DTD stands for Document Type Declaration. It identifies the markup declarations for the element used in the body of the document or explicit markup declarations or both.***

***50. What are the benefits of DTD?***

***Ans: i)With a DTD, each of your XML files can carry a description of its own format.***

***ii) With a DTD, independent groups of people can agree to use a standard DTD for interchanging data.***

***51. What is the root element?***

***Ans: The element which contains all other elements is called root element. Every xml document must have a root element.***

***52. What is PI?***

***Ans: PI stands for Processing Instruction. It indicates how an xml document should be processed.***

***53. What is a well-formed xml document?***

***Ans: The xml document which conforms to the rules for writing xml as defined by the xml specification.***

***54. What is an xml processor?***

***Ans: An xml processor is a software module that is used by an application to read an xml document and gain access to the data and its structure.***

***55. What is the difference between a well-formed xml document a valid xml document?***

***Ans:***

|  |  |
| --- | --- |
| ***Well-formed xml document*** | ***Valid xml document*** |
| ***1. It may contain an associated DTD.*** | ***1. It must contain an associated DDT.*** |
| ***2. A well formed xml document may not be valid.*** | ***2. A valid xml document must be well-formed.*** |

***56. What is Entity?***

***Ans: Entity is a block of parsed character data which is to be used in the body of a document repeatedly. It is decleared within DTD.***

***57. What is general entity?***

***Ans:General entity is declared in a DTD when we want to repeat text within the document body.***

***58. What is the difference between general entity and parameter entity?***

***Ans: The form for a general entity and parameter entity is similar except that a % character appears between ENTITY and entity name separated by a space.***

***<!ENTITY copyright "(c) 2004 jon david">***

***<!ENTITY % copyright "(c) 2004 jon david">***

***59. Define Tag rules.***

***Ans: i) Each element name must immediately follow the opening tag in case of start tag, and end with </ in this case of end tag.***

***ii) It does not allow any space between the opening < and the element name or between the / and > marking end of the tag.***

***60. Define Name Rules.***

***Ans: Element’s name must begin with a letter or an underscore and can include digits,periods and hyphens.***

***61. Write the advantages of DOM.***

***Ans: i) After creating document object model (DOM) we can navigate through the elements in the document tree starting with the root element by its methods.***

***ii) DOM allows us to modify existing documents or create new ones. It is the unique advantage over SAX.***

***62. What is cardinality operator?***

***Ans: The sign by which we can indicate how many times an element may be appeared in an xml document is called cardinality operator. These are: i) + ii) \* iii) ? iv) |***

***63. Write the cardinality operator and its indication.***

|  |  |
| --- | --- |
| ***Operator*** | ***Indication*** |
| ***1. +*** | ***At least Once but may be more.*** |
| ***2. \**** | ***Zero or more.*** |
| ***3. ?*** | ***May be once or not at all.*** |
| ***4. |*** | ***Left operand or Right operand but not both.*** |

***64. What is parameter entity?***

***Ans: A parameter entity identifies a block of parsed text by a name that you can used to insert the text at various places with a DTD.***

***65.Write the rules for a well-formed document.***

***Ans: i) If the xml declaration appears in the prolog, it must include the xml version. ii) If the document type declaration appears in the prolog, the DOCTYPE name must match that of the root element. iii) The body of the document must contain at least one root element. iv) Elements in the body of the document must be consistent with the markup declaration identified by the DOCTYPE declaration.***

***66. What is namespace? When is it called a default namespace?***

***Ans: An XML namespace defines a set of names qualified by a prefix that corresponds to a URI. When a name space is defined in the root element for the whole document without any prefix then this namespace is called default namespace.***

***67. Why do we use namespace?***

***Ans: Normally we use only one dtd file in a xml document. But When we want to use two or more dtd file in a xml document. That time a problem may arise to differentiate between elements that share a common name. That’s why we use namespace.***

***68. What is XSD? How can we declare it?***

***Ans: XSD stands for XML Schema Definition Language.***

***<?xml version=”1.0”?>***

***<sxd:schema xmlns:xsd=”http://www.gora\_goru.org/2001/XMLSchema”>***

***69. Write the benefit rule of Schema?***

***Ans: i) It is easier to describe allowable document content and to validate the correctness of data. ii) It is easier to work with data from a database and to convert data between different data types.***

***70. What is instance document?***

***Ans: A document that has been defined in accordance with a particular schema is called an instance document for that schema.***

***71. What is XML parser?***

***Ans: XML parser is nothing but an XML processor. It parses the elements of the document and makes the elements together with their attributes and content.***

***72. What is API?***

***Ans: API stands for Application Programming Interface. An application accesses the content of a document through it provided by XML parser.***

***73. How many API does support Java and what are they?***

***Ans: Java supports two APIs. They are : i) SAX ii) DOM***

***74. What is SAX?***

***Ans: SAX stands for Simple API for XML. It uses and event-based process for reading an XML document.***

***75. What is DOM?***

***Ans: DOM stands for Document Object Model. It uses object-based process for reading an XML document.***

***76. How many kinds of parser for reading an XML document?***

***Ans: i) SAXParserFactory ii) SAXParser iii) DocumentBuilderFactory iv) DocumentBuilder***

***77. Write 5 overloaded method of parse() ?***

***Ans: i) parse(File afile, DefaultHandler haldler)***

***ii) parse(String uri, DefaultHandler handler)***

***iii) parse(InputStream input, DefaultHandler handler)***

***iv) parse(InpusStream input, DefaultHandler handler, String SystemID)***

***v) parse(InputSource source, DefaultHandler handler)***

***78. What is DefaultHandler?***

***Ans: DefaultHandler is a class of org.xml.sax.helpers package which contain a specific set of public methods and it provides a default do-nothing implementation of each of the callback methods.***

***79. Write the names of interfaces implemented by DefaultHandler class:***

***Ans: i) ContentHandler ii) EntityResolver iii) DTDHandler iv) Error Handler***

***80. What is Attributes?***

***Ans: Attributes is an interface which declares methods you can call for the object to obtain details of each attribute name, its type and its value.***

***81. Write the difference between HTML and XML?***

|  |  |
| --- | --- |
| ***XML*** | ***HTML*** |
| ***1. XML stands for Extensible Markup Language.*** | ***1. HTML stands for Hypertext Markup Language.*** |
| ***2. It is designed to describe data.*** | ***2. It is designed to display data.*** |
| ***3. XML tags are not predefined.*** | ***3. HTML tags are predefined.*** |

***82. What is element content and element normal?***

***Ans: When an element has no element then the element is called element normal and when an element contains one or more attribute then the element is called element content.***

***83. How can we declare a DTD internally? / Define the internal subset and external subset.***

***Internal DTD Declaration:***

***<?xml version="1.0" encoding="UTF-8"?>***

***<!DOCTYPE address***

***[***

***<!ELEMENT address (buildingnumber, street)>***

***<!ELEMENT buildingnumber (#PCDATA)>***

***<!ELEMENT street (#PCDATA)>***

***]>***

***External DTD Declaration:***

***<?xml version="1.0" encoding="UTF-8"?>***

***<!DOCTYPE proverb SYSTEM "proverb.dtd">***

***<proverb>***

***A Little Knowledge is a dangerous thing***

***</proverb>***

***84. What is the difference between PCDATA and CDATA?***

***Ans: If an element of an xml document contain some illegal characters such as “<” and “&” and it is defined as PCDATA then this illegal character will generate an error whereas if it is defined as CDATA no error will be generated.***

***Notes:***

***XML is also a meta-language because you can use XML to create new languages for defining and structuring data.***

***❑ Markup consists of XML elements that may also include attributes, where an attribute is a name-value pair.***

***❑ The structure and meaning of a particular type of document can be defined within a Document Type Definition (DTD). A DTD can be defined in an external file or it can be part of a document.***

***❑ A DTD is identified by a DOCTYPE declaration in a document.***

***❑ The Schema Definition language provides a more flexible alternative to DTDs.***

***❑ An XML namespace defines a set of names qualified by a prefix that corresponds to a URI.***

***❑ The SAX API defines a simple event-driven mechanism for analyzing XML documents.***

***❑ A SAX parser is a program that parses an XML document and identifies each element in a document***

***by calling a particular method in your program. The methods that are called are those defined by the SAX API.***

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***84. What is DocumentBuilderFactory?***

***Ans: DocumentBuilderFactory is a parser residing in the document Builder Class that makes an object through newInstance() method for creating xml document.***

***85. What is parsing?***

***Ans: To parse means to break down into smaller components (pieces) of the  
whole. It is to read the value of one object to convert it to another type for making name/value pairs by parse() method.***

***86. Write the advantage of getNodeType() method?***

***Ans: We can test for the node type using a switch statement with the constants in the preceding table as case value which makes it easy to farm out processing for nodes of various types to separate methods.***

***87. Write the three methods of DOM implementation(Data Write).***

***Ans: i)createDocument(String namespaceURI,***

***String qualifiedName, DocumentType doctype)***

***ii) createDocumentType(String qualifiedName, String publicID, String SystemID)***

***iii) hasFeature(String feature, String version)***

***88. What is Error Handler?***

***Ans: ErrorHandler is an object of ErrorHanlder class object that deals with parsing error by its ErrorHandler() method.***

***Notes:***

***❑ An object of type DocumentBuilder encapsulates a DOM parser.***

***❑ You create an object encapsulating a DOM parser by using a DocumentBuilderFactory object that you obtain by calling the static newInstance() method that is defined in the DocumentFactoryBuilder class.***

***❑ You can parse an XML document by passing the document as an argument to the parse() method for a DocumentBuilder object.***

***❑ A DOM parser creates a Document object that encapsulates an entire XML document as a tree of Node objects.***

***❑ The DOM API defines the methods of a Document object that enable you to analyze an XML document by navigating through the nodes in the Document object.***

***❑ The DOM API also defines methods for creating a new XML document encapsulated by a Document object.***

***❑ When you want to create a new XML document that includes a DTD, you should use the createDocument() method for a DOMImplementation object, rather than the newDocument() method for a DocumentBuilder object.***