

CS506 - Web Design and Development Glossary By www.virtualians.pk

Abstract : A Java keyword used in a class definition to specify that a class is not to be instantiated, but rather inherited by other classes. An abstract class can have abstract methods that are not implemented in the abstract class, but in subclasses

Abstract class : A class that contains one or more abstract methods, and therefore can never be instantiated. Abstract classes are defined so that other classes can extend them and make them concrete by implementing the abstract methods

Abstract method : A method that has no implementation.

Abstract Window Toolkit (AWT) : A collection of graphical user interface (GUI) components that were implemented using native-platform versions of the components. These components provide that subset of functionality which is common to all native platforms. Largely supplanted by the Project Swing component set. See also Swing

Access control : The methods by which interactions with resources are limited to collections of users or programs for the purpose of enforcing integrity, confidentiality, or availability constraints.

ACID : The acronym for the four properties guaranteed by transactions: atomicity, consistency, isolation, and durability

Actual parameter list : The arguments specified in a particular method call.

API : Application Programming Interface. The specification of how a programmer writing an application accesses the behavior and state of classes and objects.

Applet : A component that typically executes in a Web browser, but can execute in a variety of other applications or devices that support the applet programming model.

Argument : A data item specified in a method call. An argument can be a literal value, a variable, or an expression.

ASCII : American Standard Code for Information Interchange. A standard assignment of 7-bit numeric codes to characters

Authentication : The process by which an entity proves to another entity that it is acting on behalf of a specific identity.

Bean : A reusable software component that conforms to certain design and naming conventions. The conventions enable beans to be easily combined to create an application using tools that understand the conventions.

Binary operator : An operator that has two arguments.

Bit : The smallest unit of information in a computer, with a value of either 0 or 1.

Bitwise operator : An operator that manipulates the bits of one or more of its operands individually and in parallel. Examples include the binary logical operators (&, |, ^), the binary shift operators (<<, >>, >>>) and the unary one's complement operator (~).

Block : In the Java programming language, any code between matching braces. Example: { x = 1; }.

Boolean : Refers to an expression or variable that can have only a true or false value. The Java programming language provides the boolean type and the literal values true and false.

Break : A Java keyword used to resume program execution at the statement immediately following the current statement. If followed by a label, the program resumes execution at the labeled statement.

Byte : A sequence of eight bits. Java provides a corresponding byte type.

Bytecode : Machine-independent code generated by the Java compiler and executed by the Java interpreter.

Case : A Java keyword that defines a group of statements to begin executing if a value specified matches the value defined by a preceding switch keyword.

Casting : Explicit conversion from one data type to another.

Catch : A Java keyword used to declare a block of statements to be executed in the event that a Java exception, or run time error, occurs in a preceding try block.

Char : A Java keyword used to declare a variable of type character.

Class : In the Java programming language, a type that defines the implementation of a particular kind of object. A class definition defines instance and class variables and methods, as well as specifying the interfaces the class implements and the immediate superclass of the class. If the superclass is not explicitly specified, the superclass will implicitly be Object.

Class method : A method that is invoked without reference to a particular object. Class methods affect the class as a whole, not a particular instance of the class. Also called a static method

Class variable : A data item associated with a particular class as a whole--not with particular instances of the class. Class variables are defined in class definitions. Also called a static field

Classpath : An environmental variable which tells the Java virtual machine and Java technology-based applications where to find the class libraries, including user-defined class libraries

Client : In the client/server model of communications, the client is a process that remotely accesses resources of a compute server, such as compute power and large memory capacity.

Comment : In a program, explanatory text that is ignored by the compiler. In programs written in the Java programming language, comments are delimited using // or /*...*/.

Commit : The point in a transaction when all updates to any resources involved in the transaction are made permanent.

Compilation unit : The smallest unit of source code that can be compiled. In the current implementation of the Java platform, the compilation unit is a file.

Compiler : A program to translate source code into code to be executed by a computer. The Java compiler translates source code written in the Java programming language into bytecode for the Java virtual machine

Compositing : The process of superimposing one image on another to create a single image.

Constructor : A pseudo-method that creates an object. In the Java programming language, constructors are instance methods with the same name as their class. Constructors are invoked using the new keyword.

Const : A reserved Java keyword not used by current versions of the Java programming language.

Continue : A Java keyword used to resume program execution at the end of the current loop. If followed by a label, continue resumes execution where the label occurs.

Core packages : The required set of apis in a Java platform edition which must be supported in any and all compatible implementations.

Credentials : The information describing the security attributes of a principal. Credentials can be acquired only through authentication or delegation.

Critical section : A segment of code in which a thread uses resources (such as certain instance variables) that can be used by other threads, but that must not be used by them at the same time.

Declaration : A statement that establishes an identifier and associates attributes with it, without necessarily reserving its storage (for data) or providing the implementation (for methods). See also definition.

Default : A Java keyword optionally used after all case conditions in a switch statement. If all case conditions are not matched by the value of the switch variable, the default keyword will be executed.

Definition : A declaration that reserves storage (for data) or provides implementation (for methods). See also declaration.

Delegation : An act whereby one principal authorizes another principal to use its identity or privileges with some restrictions.

Deprecation : Refers to a class, interface, constructor, method or field that is no longer recommended, and may cease to exist in a future version.

Derived from : Class X is "derived from" class Y if class X extends class Y. See also subclass, superclass.

Distributed application : An application made up of distinct components running in separate runtime environments, usually on different platforms connected through a network. Typical distributed applications are two-tier (client/server), three-tier (client/middleware/server), and n-tier (client/multiple middleware/multiple servers).

Do : A Java keyword used to declare a loop that will iterate a block of statements. The loop's exit condition can be specified with the while keyword

Double : A Java keyword used to define a variable of type double.

Else : A Java keyword used to execute a block of statements in the case that the test condition with the if keyword evaluates to false.

Embeddedjava Technology : The availability of Java 2 Platform, Micro Edition technology under a restrictive license agreement that allows a licensee to leverage certain Java technologies to create and deploy a closed-box application that exposes no apis

Encapsulation : The localization of knowledge within a module. Because objects encapsulate data and implementation, the user of an object can view the object as a black box that provides services. Instance variables and methods can be added, deleted, or changed, but as long as the services provided by the object remain the same, code that uses the object can continue to use it without being rewritten.

Enum : A Java keyword used to declare an enumerated type.

Enumerated type : A type whose legal values consist of a fixed set of constants.

Exception : An event during program execution that prevents the program from continuing normally; generally, an error. The Java programming language supports exceptions with the try, catch, and throw keywords. See also exception handler

Exception handler : A block of code that reacts to a specific type of exception. If the exception is for an error that the program can recover from, the program can resume executing after the exception handler has executed.

Executable content : An application that runs from within an HTML file. See also applet.

Field : A data member of a class. Unless specified otherwise, a field is not static.

Final : A Java keyword. You define an entity once and cannot change it or derive from it later. More specifically: a final class cannot be subclassed, a final method cannot be overridden and a final variable cannot change from its initialized value.

Finally : A Java keyword that executes a block of statements regardless of whether a Java Exception, or run time error, occurred in a block defined previously by the try keyword.

Float : A Java keyword used to define a floating point number variable.

For : A Java keyword used to declare a loop that reiterates statements. The programmer can specify the statements to be executed, exit conditions, and initialization variables for the loop.

FTP : File Transfer Protocol. FTP, which is based on TCP/IP, enables the fetching and storing of files between hosts on the Internet. See also TCP/IP.

Formal parameter list : The parameters specified in the definition of a particular method. See also actual parameter list.

Garbage collection : The automatic detection and freeing of memory that is no longer in use. The Java runtime system performs garbage collection so that programmers never explicitly free objects.

Generic : A class, interface, or method that declares one or more type variables. These type variables are known as type parameters. A generic declaration defines a set of parameterized types, one for each possible invocation of the type parameter section. At runtime, all of these parameterized types share the same class, interface, or method.

Goto : This is a reserved Java keyword. However, it is not used by current versions of the Java programming language.

GUI : Graphical User Interface. Refers to the techniques involved in using graphics, along with a keyboard and a mouse, to provide an easy-to-use interface to some program.

Hexadecimal : The numbering system that uses 16 as its base. The marks 0-9 and a-f (or equivalently A-F) represent the digits 0 through 15. In programs written in the Java programming language, hexadecimal numbers must be preceded with 0x

Hierarchy : A classification of relationships in which each item except the top one (known as the root) is a specialized form of the item above it. Each item can have one or more items below it in the hierarchy. In the Java class hierarchy, the root is the Object class.

HTML : hypertext Markup Language. This is a file format, based on SGML, for hypertext documents on the Internet. It is very simple and allows for the embedding of images, sounds, video streams, form fields and simple text formatting. References to other objects are embedded using urls.

HTTP : hypertext Transfer Protocol. The Internet protocol, based on TCP/IP, used to fetch hypertext objects from remote hosts

HTTPS : hypertext Transfer Protocol layered over the SSL protocol.

IDL : Interface Definition Language. Apis written in the Java programming language that provide standards-based interoperability and connectivity with CORBA (Common Object Request Broker Architecture).

Identifier : The name of an item in a program written in the Java programming language.

If : A Java keyword used to conduct a conditional test and execute a block of statements if the test evaluates to true.

Implements : A Java keyword included in the class declaration to specify any interfaces that are implemented by the current class

Import : A Java keyword used at the beginning of a source file that can specify classes or entire packages to be referred to later without including their package names in the reference.

Inheritance : The concept of classes automatically containing the variables and methods defined in their supertypes.

Instance : An object of a particular class. In programs written in the Java programming language, an instance of a class is created using the new operator followed by the class name.

Instance method : Any method that is invoked with respect to an instance of a class. Also called simply a method. See also class method.

Instance variable : Any item of data that is associated with a particular object. Each instance of a class has its own copy of the instance variables defined in the class. Also called a field.

Instanceof : A two-argument Java keyword that tests whether the runtime type of its first argument is assignment compatible with its second argument.

Int : A Java keyword used to define a variable of type integer.

Interface : A Java keyword used to define a collection of method definitions and constant values. It can later be implemented by classes that define this interface with the "implements" keyword.

IP : Internet Protocol. The basic protocol of the Internet. It enables the unreliable delivery of individual packets from one host to another. It makes no guarantees about whether or not the packet will be delivered, how long it will take, or if multiple packets will arrive in the order they were sent. Protocols built on top of this add the notions of connection and reliability

JAR : JAR (Java Archive) is a platform-independent file format that aggregates many files into one. Multiple applets written in the Java programming language, and their requisite components (.class files, images, sounds and other resource files) can be bundled in a JAR file and subsequently downloaded to a browser in a single HTTP transaction. It also supports file compression and digital signatures.

Java : Sun's trademark for a set of technologies for creating and safely running software programs in both stand-alone and networked environments.

Java 2 Platform : The second generation of the Java platform. (The first generation was the JDK.) Also see "Java Platform" and "Java Platform Editions".

J2EE : Java 2 Platform, Enterprise Edition

J2ME : Java 2 Platform, Micro Edition

J2SE : Java 2 Platform, Standard Edition

Java Database Connectivity (JDBC) : An industry standard for database-independent connectivity between the Java platform and a wide range of databases. The JDBC provides a call-level API for SQL-based database access.

Java Development Kit (JDK) : A software development environment for writing applets and applications in the Java programming language. Technically, the JDK is the correct name for all versions of the Java platform from 1.0 to 1.1.x.

Java Media Framework : The core framework supports clocks for synchronizing between different media (e.g., audio and video output). The standard extension framework allows users to do full audio and video streaming.

Java Platform : Consists of class libraries, a Java virtual machine (JVM) and class loader (which comprise the runtime environment) and a compiler, debugger and other tools (which comprise the development kit). In addition, the runtime platform is subject to a set of compatibility requirements to ensure consistent and compatible implementations. Implementations that meet the compatibility requirements may qualify for Sun's targeted compatibility brands. Java 2 is the current generation of the Java Platform

Java Platform Editions : A Java platform "edition" is a definitive and agreed-upon version of the Java platform that provides the functionality needed over a broad market segment. An edition is comprised of two kinds of API sets: (i) "core packages," which are essential to all implementations of a given platform edition, and (ii) "optional packages," which are available for a given platform edition and which may be supported in a compatible implementation. There are 3 distinct editions of the Java Platform: * Java 2 Platform, Enterprise Edition: The edition of the Java platform that is targeted at enterprises to enable development, deployment, and management of multi-tier server-centric applications. * Java 2 Platform, Micro Edition: The edition of the Java platform that is targeted at small, standalone or connectable consumer and embedded devices to enable development, deployment, and management of applications that can scale from smart cards through mobile devices and set-top boxes to conventional computing devices. * Java 2 Platform, Standard Edition: The edition of the Java platform that enables development, deployment, and management of cross-platform, general-purpose applications.

Java Remote Method Invocation (RMI) : A distributed object model for Java program to Java program, in which the methods of remote objects written in the Java programming language can be invoked from other Java virtual machines, possibly on different hosts.

Java Runtime Environment (JRE) : A subset of the Java Development Kit (JDK) for end-users and developers who want to redistribute the runtime environment alone. The Java runtime environment consists of the Java virtual machine¹, the Java core classes, and supporting files.

Java virtual machine : A software "execution engine" that safely and compatibly executes the byte codes in Java class files on a microprocessor (whether in a computer or in another electronic device)

Javabeans : A portable, platform-independent reusable component model. A component that conforms to this model is called a bean.

Javascript : A Web scripting language that is used in both browsers and Web servers. Like all scripting languages, it is used primarily to tie other components together or to accept user input.

JDK : Java Development Kit. A software development environment for writing applets and application in Java .

Just-in-time (JIT) Compiler : A compiler that converts all of the bytecode into native machine code just as a Java program is run. This results in run-time speed improvements over code that is interpreted by a Java virtual machine.

Keyword : Java sets aside words as keywords - these words are reserved by the language itself and therefore are not available as names for variables or methods.

Lexical : Pertaining to how the characters in source code are translated into tokens that the compiler can understand.

Linker : A module that builds an executable, complete program from component machine code modules. The Java linker creates a runnable program from compiled classes.

Literal : The basic representation of any integer, floating point, or character value. For example, 3.0 is a double-precision floating point literal, and "a" is a character literal.

Local variable : A data item known within a block, but inaccessible to code outside the block. For example, any variable defined within a method is a local variable and can't be used outside the method.

Long : A Java keyword used to define a variable of type long.

Member : A field or method of a class. Unless specified otherwise, a member is not static.

Method : A function defined in a class

Native : A Java keyword that is used in method declarations to specify that the method is not implemented in the same Java source file, but rather in another language.

New : A Java keyword used to create an instance of a class.

Null : The null type has one value, the null reference, represented by the literal null, which is formed from ASCII characters. A null literal is always of the null type.

XML : Extensible Markup Language. A markup language that allows you to define the tags (markup) needed to identify the data and text in XML documents

WWW : World Wide Web. The web of systems and the data in them that is the Internet

Wrapper : An object that encapsulates and delegates to another object to alter its interface or behavior in some way.

While : A Java keyword used to declare a loop that iterates a block of statements. The loop's exit condition is specified as part of the while statement.

Web server : Software that provides services to access the Internet, an intranet, or an extranet. A Web server hosts Web sites, provides support for HTTP and other protocols, and executes server-side programs (such as CGI scripts or servlets) that perform certain functions.

Volatile : A Java keyword used in variable declarations that specifies that the variable is modified asynchronously by concurrently running threads

Void : A Java keyword used in method declarations to specify that the method does not return any value. Void can also be used as a nonfunctional statement

Virtual machine : An abstract specification for a computing device that can be implemented in different ways, in software or hardware. You compile to the instruction set of a virtual machine much like you'd compile to the instruction set of a microprocessor. The Java virtual machine consists of a bytecode instruction set, a set of registers, a stack, a garbage-collected heap, and an area for storing methods.

Variable : An item of data named by an identifier. Each variable has a type, such as int or Object, and a scope

URL : Uniform Resource Locator. A standard for writing a text reference to an arbitrary piece of data in the WWW. A URL looks like "protocol://host/localinfo" where protocol specifies a protocol to use to fetch the object (like HTTP or FTP), host specifies the Internet name of the host on which to find it, and localinfo is a string (often a file name) passed to the protocol handler on the remote host.

Unicode : A 16-bit character set defined by ISO 10646. See also ASCII. All source code in the Java programming environment is written in Unicode.

Type : A class or interface.

Try : A Java keyword that defines a block of statements that may throw a Java language exception. If an exception is thrown, an optional catch block can handle specific exceptions thrown within the try block. Also, an optional finally block will be executed regardless of whether an exception is thrown or not.

Transient : A keyword in the Java programming language that indicates that a field is not part of the serialized form of an object. When an object is serialized, the values of its transient fields are not included in the serial representation, while the values of its non-transient fields are included

Transaction : An atomic unit of work that modifies data. A transaction encloses one or more program statements, all of which either complete or roll back. Transactions enable multiple users to access the same data concurrently.

Throws : A Java keyword used in method declarations that specify which exceptions are not handled within the method but rather passed to the next higher level of the program.

Throw : A Java keyword that allows the user to throw an exception or any class that implements the "throwable" interface

Thread : The basic unit of program execution. A process can have several threads running concurrently, each performing a different job, such as waiting for events or performing a time-consuming job that the program doesn't need to complete before going on. When a thread has finished its job, the thread is suspended or destroyed

This : A Java keyword that can be used to represent an instance of the class in which it appears. This can be used to access class variables and methods.

Thin client : A system that runs a very light operating system with no local system administration and executes applications delivered over the network.

TCP/IP : Transmission Control Protocol based on IP. This is an Internet protocol that provides for the reliable delivery of streams of data from one host to another. See also IP.

Synchronized : A keyword in the Java programming language that, when applied to a method or code block, guarantees that at most one thread at a time executes that code.

Swing : A collection of graphical user interface (GUI) components that runs uniformly on any native platform which supports the Java virtual machine*. Because they are written entirely in the Java programming language, these components may provide functionality above and beyond that provided by native-platform equivalents. (Contrast with AWT.)

Switch : A Java keyword used to evaluate a variable that can later be matched with a value specified by the case keyword in order to execute a group of statements.

Super : A Java keyword used to access members of a class inherited by the class in which it appears.

Stream : A stream is simply a byte-stream of data that is sent from a sender to a receiver. There are two basic categories, so the java.io package includes two abstract classes (inputstream and outputstream).

Static : A Java keyword used to define a variable as a class variable. Classes maintain one copy of class variables regardless of how many instances exist of that class. Static can also be used to

define a method as a class method. Class methods are invoked by the class instead of a specific instance, and can only operate on class variables.

SQL : Structured Query Language. The standardized relational database language for defining database objects and manipulating data

Short : A Java keyword used to define a variable of type short.

Secure Socket Layer (SSL) : A protocol that allows communication between a Web browser and a server to be encrypted for privacy.

RPC : Remote Procedure Call. Executing what looks like a normal procedure call (or method invocation) by sending network packets to some remote host.

Rollback : The point in a transaction when all updates to any databases involved in the transaction are reversed.

Return : A Java keyword used to finish the execution of a method. It can be followed by a value required by the method definition.

Reference : A variable data type in which the variable's value is an address

Public : A Java keyword used in a method or variable declaration. It signifies that the method or variable can be accessed by elements residing in other classes

Protected : A Java keyword used in a method or variable declaration. It signifies that the method or variable can only be accessed by elements residing in its class, subclasses, or classes in the same package.

Property : Characteristics of an object that users can set, such as the color of a window.

Process : A virtual address space containing one or more threads.

Overriding : Providing a different implementation of a method in a subclass of the class that originally defined the method.

Overloading : Using one identifier to refer to multiple items in the same scope. In the Java programming language, you can overload methods but not variables or operators.

Object : The principal building blocks of object-oriented programs. Each object is a programming unit consisting of data (instance variables) and functionality (instance methods).

Octal : The numbering system using 8 as its base, using the numerals 0-7 as its digits. In programs written in the Java programming language, octal numbers must be preceded with 0.