BCA – 401: Java Programming

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In today's Class we have discussed on JAVA and internet and WWW, JAVA support systems, JAVA environment.

Java Language and the Internet:-

Java is often called the "Internet language" because the first application program written in Java was HotJava, a web browser used to run applets on the Internet. Internet users can use Java to create applets and run them locally using HotJava. A Java-enabled browser to download an applet located anywhere on the Internet can also be used.

Java applets have made the Internet a true extension of the storage system on local computers. Internet users can also set up their websites containing Java applets that could be used by remote users.

Java Programming and World Wide Web:-

World Wide Web (www) is an information retrieval system where any information or file is identified as Uniform source Locators (URLs) and are interlinked via hypertext links. WWW can be accessed with the help of internet.

Internet and Java programming both had the same philosophy, and thus, they were incorporated with each other easily. Java made it possible for the World Wide Web to support animation, graphics, games, and a wide

range of special effects.

To communicate with any web page, Java uses APPLETs. The steps involved are:

- The user requests for a hyperlink document to remote computer's web server. (a web server receives, processes, and sends the requested document)
- The document contains the APPLET tag, which identifies the applet.
- Java source code file compiles the bytecode for that applet, which is then transferred to user's computer.
- The browser is enabled by Java and then interprets the bytecode and provides the output.

Java Support Systems:-

The operations of Java and Java-enabled browsers on the Internet require a variety of support systems, namely:

- Internet Connection
- Web server
- Web Browser
- HTML— a language for creating hypertext for the web
- APPLET tag
- Java cod

- Bytecode
- Proxy Server — an intermediate server between the requesting client workstation and the original server
- Mail Server

The Java Environment:-

The Java environment includes a large number of Java development tools and Java classes and methods.

The Java development tools are part of the system known as the Java Development Kit (JDK), and the classes and the methods in Java are a part of the Java Standard Library (JSL), also known as the Application Programming Interface (API).

Java Development Kit (JDK):-

The Java Development Kit includes:

- appletviewer (for viewing Java applets)
- javac (Java compiler)
- java (Java interpreter)
- javap (Java disassembler)
- javah (for C header files)
- javadoc (for creating HTML files)
- jdb (Java debugger)

Application Programming Interface:-

The Java Standard Library includes classes and packages, some most commonly used packages are the Language Support Packages. This is a collection of Java classes and methods required for implementing basic features of Java.

- Utility Package — To provide Java utility functions
- Input/output Package — For Java input/output manipulation
- Networking Package — For communicating via the Internet
- AWT Package — The abstract window toolkit package contains classes that implement a platform-independent, graphical user interface.
- Applet Package — this allows us to create Java applets.

Java Runtime Environment:-

The java Runtime Environment facilitates the execution of Java programs, comprising the Java Virtual Machine (JVM). The JVM interprets the intermediate Java bytecode and generates the desired output.

- Runtime class libraries — These are a set of core Java class libraries for execution of the Java program.

- User interface toolkits — These are used for interaction with the Java application program.
- Deployment technologies

1) Java plugin — This enables the execution of a Java applet.

2) Java Web start — This enables an application to directly launch from the web browser without installing.