CS 5 (Programming in Java) Unit III Short Answer Type

Q) Explain about Java Applet(s).

Applet is a special type of Java program that is embedded in the webpage to generate the dynamic content. It runs inside the browser and works at client side.

Advantages of Applets :-

There are many advantages of applets. They are as follows:

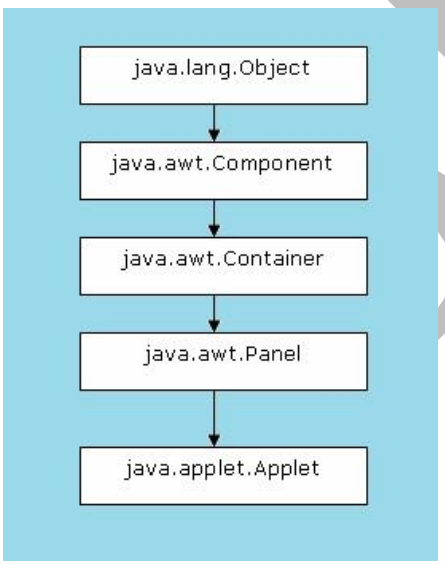
- It works at client side, so less response time.
- Secured
- It can be executed by browsers (which has JVM running in it) running under many platforms, including Linux, Windows, Mac Os etc.

Drawback of Applets :-

- Plug-in is required at client browser to execute applet.

Q) Explain the hierarchy of Applet class.

Hierarchy of Applet Class



The above classes provide support for Java's window-based GUI.

To create an user friendly graphical interface we need to place various components on GUI window. The Component class derives several classes for GUI components. These classed include Check box, Choice, List, Button, and so on.

Q) Explain about Applet Class.

- Applet class is defined in java.applet package.
- java.applet.Applet is the superclass of all the applets. Thus, all the applets, directly or indirectly, use the methods of Applet class.
- It provides all the methods to start, stop, and maintain the applets.
- It also has the methods to support multimedia.
- Every applet program must have the following two import statements:

  import java.awt.;*
  import java.applet.;*

Q) Explain the methods used in displaying Output in applet program.

paint( ): All components and containers have paint( ) method called by the system to paint their surface. When a component draws itself to become visible, its paint( ) method is called.

public void paint(Graphics g);

drawString( ): This method is defined in Graphics class. It is used to display a string in applet. It is typically called from paint( ) method.

void drawString(String s, int x, int y);

setBackground( ): It belongs to component class. It sets the background color of the applet window.

void setBackground(Color colorname);

setForeground( ): It belongs to component class. It sets the color of the text displayed in the applet window.

void setForeground(Color colorname);

Q) What is AWT?

Java AWT (Abstract Window Toolkit) is *an API(Application Program Interface) to develop GUI or window-based applications* in java.

Java AWT components are platform-dependent i.e. components are displayed according to the view of operating system. AWT is heavyweight i.e. its components are using the resources of OS.

The java.awt package provides classes for AWT api such as TextField, Label, TextArea, RadioButton, CheckBox, Choice, List etc.

Q) Why AWT?
Or
What is the purpose of AWT?

Java AWT (Abstract Window Toolkit) is *an API(Application Program Interface) to develop GUI or window-based applications* in java.

Advantage: It preserves the native look and feel of the platform on which the AWT application is running.

Q) List out the types of AWT components.

Types of components / AWT Components

- Button
- Label
- TextField
- Radio button
- Checkbox
- List
- Choice
- Scrollbar

Q) What is a Layout Manager? Why are they needed?

Layouts tell Java **where to put components** in containers (`JPanel`, Frame, Applet, etc).

The layout manager automatically positions all the components within the container.

If we do not use layout manager then also the components are positioned by the default layout manager. It is possible to layout the controls by hand but it becomes very difficult because of the following two reasons.

- It is very tedious to handle a large number of controls within the container.
- Often the width and height information of a component is not given when we need to arrange them.

Java provides us with various layout managers to position the controls.

The properties like size, shape and arrangement varies from one layout manager to other layout manager.

When the size of the applet or the application window changes the size, shape and arrangement of the components also changes in response i.e. the layout managers adapt to the dimensions of appletviewer or the application window.

Q) Define Java Swings.

Java Swing is is *used to create window-based applications*. It is built on the top of AWT (Abstract Windowing Toolkit) API and entirely written in java.

Unlike AWT, Java Swing provides platform-independent and lightweight components.

The javax.swing package provides classes for java swing API such as JButton, JTextField, JTextArea, JRadioButton, JCheckbox, JMenu, JColorChooser etc.

Q) What is the difference between AWT and Swings?

No.	Java AWT	Java Swing
1)	AWT components are **platform-dependent**.	Java swing components are **platform-independent**.
2)	AWT components are **heavyweight**.	Swing components are **lightweight**.
3)	**Look and feel** is OS dependent.	**Look and feel** is OS independent.
4)	Not pure Java-based	Pure Java-based
5)	Faster	Slower
6)	AWT provides **less components** than Swing.	Swing provides **more powerful components** such as tables, trees, scrollpanes, colorchooser, tabbedpane etc.

Q) List out various Swing components.

JApplet
JFrame
JPanel
JButton
JLabel
JCheckbox
JTextField
JTable
JTree

Q) What is JDBC? Write the steps to connect to a database using JDBC.

The full form of JDBC is **Java Database Connectivity**.

JDBC is an API(Application Program Interface) for a Java program to connect to any database.

JDBC API is available in two packages:

java.sql.*;
javax.sql.*;

Steps to connect to a database:-

1. Load the driver
2. Establish connection
3. Create statements
4. Execute query and obtain result
5. Iterate through the results
6. Close the connection

Q) Define JDBC driver. What are the types of JDBC drivers?

JDBC Driver is a software component that enables java application to interact with the database.

Types of JDBC Drivers:-

There are 4 types of JDBC drivers:

1. JDBC-ODBC bridge driver
2. Native-API driver (partially java driver)
3. Network Protocol driver (fully java driver)
4. Thin driver (fully java driver)