SNS COLLEGE OF TECHNOLOGY

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COIMBATORE – 35
DEPARTMENT OF COMPUTER SIENCE AND ENGINEERING

UNIT 5

SWING CLASS

- Introduction to Swing Class in Java
- What is a Swing Class?
- Swing Components
- Event Handling in Swing
- Example for Swing class
- Conclusion

About Swing Class

- Introduction to Swing Class in Java

- Welcome to the world of Java Swing Class!

- Swing class is an essential component in building graphical user interfaces (GUIs) in Java.

- It provides a rich set of customizable components that allow developers to create highly interactive and visually appealing applications.

- With its powerful features, Swing has become the preferred choice for building desktop applications in Java

What is a Swing Class?

- Swing class is a set of GUI (graphical user interface) components for java. It provides a rich set of easy-to-use and customizable components such as buttons, labels, text fields, etc. That can be used to create interactive user interfaces.

- Swing class plays a crucial role in java GUI development as it allows developers to create cross-platform applications with ease.

- It also provides a consistent look and feel across different operating systems, making it easier for users to navigate and use the application.

- Furthermore, swing class offers a high degree of flexibility and customization, allowing developers to create visually appealing and responsive user interfaces.

Swing Components

- Swing components are the building blocks of Java graphical user interfaces (GUIs). These components include buttons, labels, text fields, checkboxes, and more.

- They can be used to create interactive user interfaces that allow users to interact with the application in a meaningful way.

- Buttons are used to trigger actions, such as saving data or closing a window. Labels are used to display text or images.

- Text fields allow users to input data into the application. Checkboxes allow users to select multiple options from a list.

- By combining these components, developers can create powerful and intuitive user interfaces.

Block Diagram for Swing Class
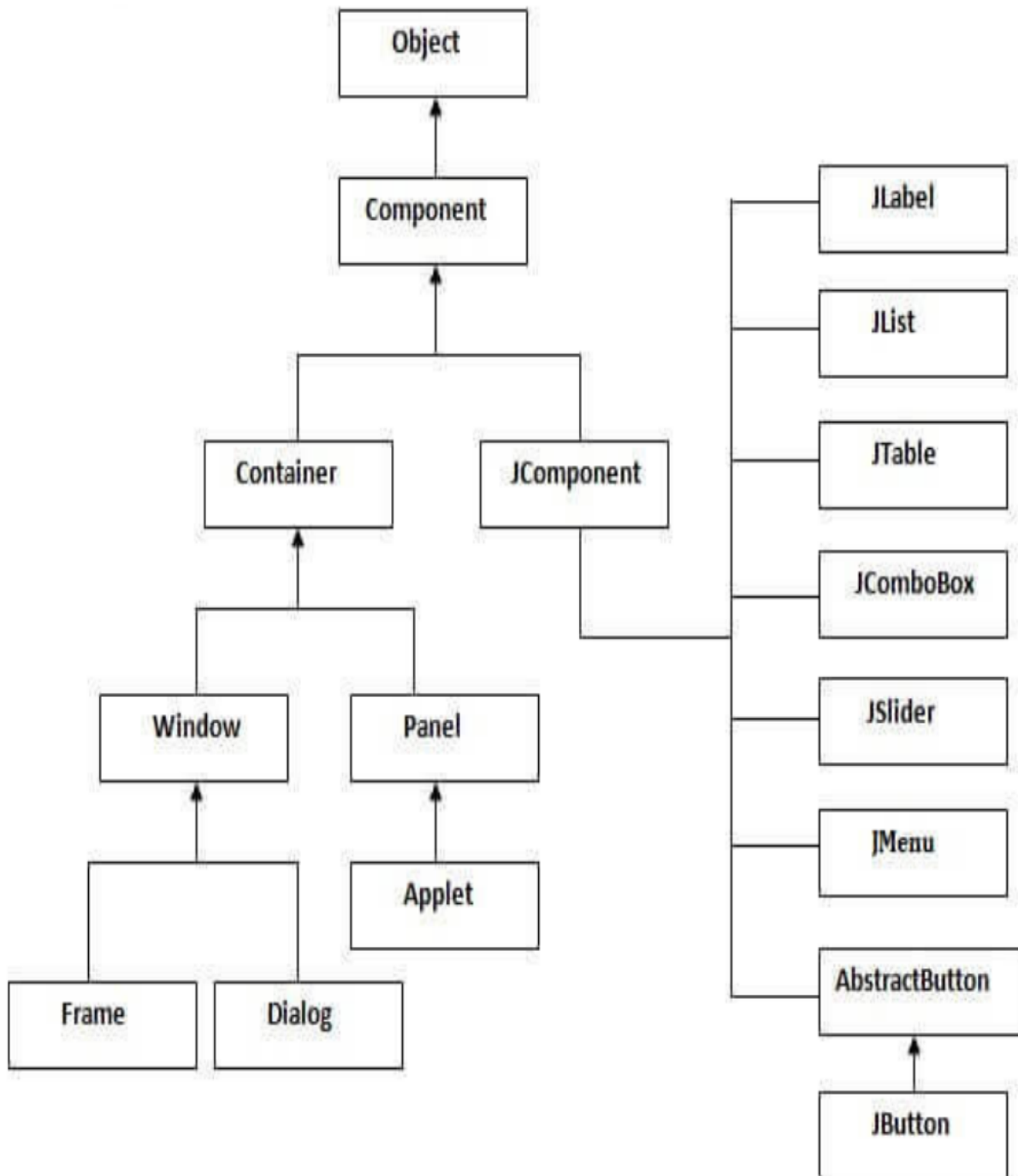
Java AWT tutorial

Java AWT (abstract window toolkit) is an API to develop graphical user interface (GUI) or windows-based applications in java. java AWT components are platform-dependent i.e., components are displayed according to the view of operating system. AWT is heavy weight i.e., its components are using the resources of underlying operating system (OS)

Difference between JAVA AWT & JAVA Swing

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)	AWT **doesn't support pluggable look and feel**.	Swing **supports pluggable look and feel**.
4)	AWT provides **less components** than Swing.	Swing provides **more powerful components** such as tables, lists, scrollpanes, colorchooser, tabbedpane etc.
5)	AWT **doesn't follows MVC**(Model View Controller) where model represents data, view represents presentation and controller acts as an interface between model and view.	Swing **follows MVC**.

Example Program for Swing Class

```
import javax.swing.*;
public class FirstSwingExample {
public static void main(String[] args) {
JFrame f=new JFrame();//creating instance of JFrame

JButton b=new JButton("click");//creating instance of JButton
b.setBounds(130,100,100, 40);//x axis, y axis, width, height

f.add(b);//adding button in JFrame

f.setSize(400,500);//400 width and 500 height
f.setLayout(null);//using no layout managers
f.setVisible(true);//making the frame visible
}
}
```

Event Handling in Swing

- Events are actions or occurrences that happen when a user interacts with a graphical user interface.
- In Swing, event handling is the process of responding to these events by executing code that performs some action or updates the state of the application.
- For example, clicking a button on a GUI triggers an event that can be handled by executing some code.
- Swing provides a powerful event handling mechanism that allows developers to create highly responsive user interfaces.
- Events in Swing are handled using listeners, which are objects that are registered to receive notifications when specific events occur.
- There are many types of listeners in Swing, including action listeners, mouse listeners, and key listeners, among others.

Conclusion

- In conclusion, we have seen that Swing Class is a powerful tool for Java GUI development. It provides a wide range of components and features that make it easy to create interactive and visually appealing user interfaces.

- We have also learned about event handling in Swing, which allows us to create responsive user interfaces that can react to user actions. Additionally, we have explored the concepts of swing class, which help us to create consistent and well-organized user interfaces.

- Overall, Swing Class is an essential part of Java GUI development, and mastering it can greatly enhance your ability to create high-quality user interfaces. We encourage you to explore Swing further and discover all the possibilities it has to offer.