

GUI Game Programming with



By -
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Java

Installation of JDK and Eclipse IDE

- **LINK FOR JDK:**

<https://www.oracle.com/java/technologies/javase-jdk14-downloads.html#license-lightbox>

- **LINK FOR ECLIPSE IDE:**

<https://www.eclipse.org/downloads/download.php?file=/oomph/epp/2021-03/R/eclipse-inst-jre-win64.exe>



I don't always program

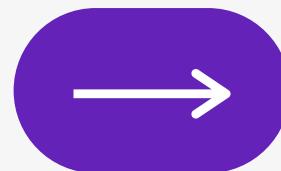


GUI in Java



POLL 1

**How often do you use GUI in
programming ?**



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Introduction

- GUI- Graphical User Interface
-

- Provides users with basic level of familiarity
-

- User interacts with GUI components via mouse, keyboard, etc.

Where to use ?

**Application
Development**

**Handheld
Mobile
Devices**

**Software
Development**

**Desktop
Application
Development**

**Game
Development**



Java API's for Graphics Programming

1

Java AWT (Abstract Windowing Toolkit)

2

Java Swing

3

Java FX



Java AWT v/s Java Swing

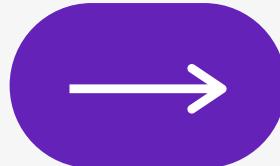
- Java AWT components are platform-dependent.
- Java AWT components are heavyweight.
- Java AWT doesn't support pluggable look and feel.
- Java AWT provides less components than Swing.
- Java AWT doesn't follows MVC Model.

- Java Swing components are platform-independent.
- Java Swing components are lightweight.
- Java Swing support pluggable look and feel.
- Java Swing provides more powerful components such as tables, lists, etc.
- Java Swing follows MVC Model.



POLL 2

Which API provides less memory?



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- Swing was introduced in 1997 to fix the problems with AWT.
- Swing offers two key features: lightweight & supports a pluggable look and feel.
- Swing is built on AWT.

What is Component class?

The Component class is the abstract superclass of the non menu-related Abstract Window Toolkit components.



Methods of Component class



public void add(Component c):
adds a component on another component.

public void setSize(int width,int height):
sets size of the component.

public void setLayout(LayoutManager m):
sets the layout manager for the component.

public void setVisible(boolean b):
sets the visibility of the component. It is by default false.

What is container class?

Classes that can have other components on it. For creating a Java GUI, we need at least one container object. 3 types of Java Swing containers are:

Panel

Frame

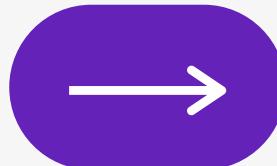
Dialog



POLL 3

A container class is subclass of component class.

True / False



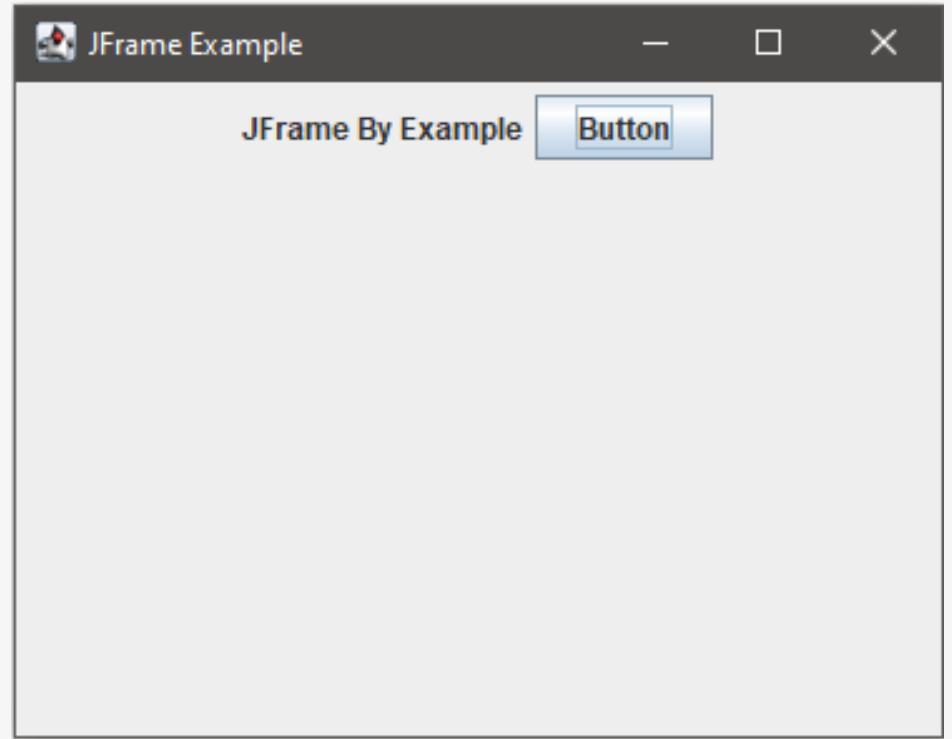
Swing Components



1. JFrame
2. JPanel
3. JButton
4. JLabel
5. JRadioButton
6. JTextField
7. JTextArea
8. JCheckBox
9. JComboBox
10. JDialog

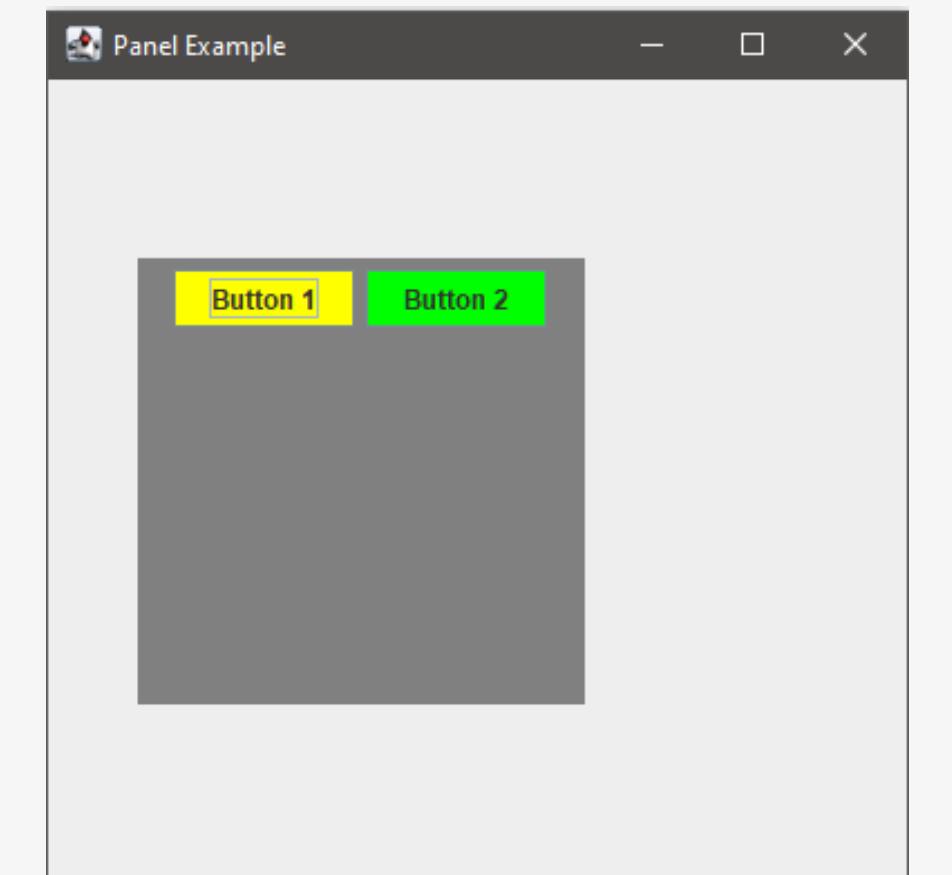
JFrame

- It is a top-level container that provides a window on the screen.
- It is a base window.



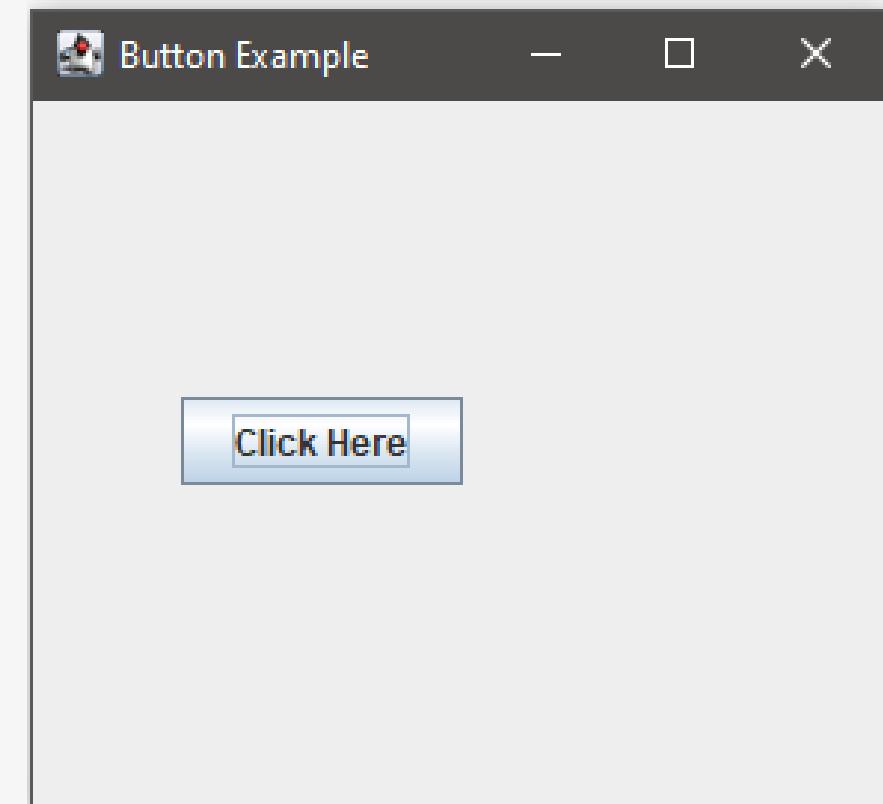
JPanel

- JPanel is a simplest container class.
- It provides space in which an application can attach any other component.



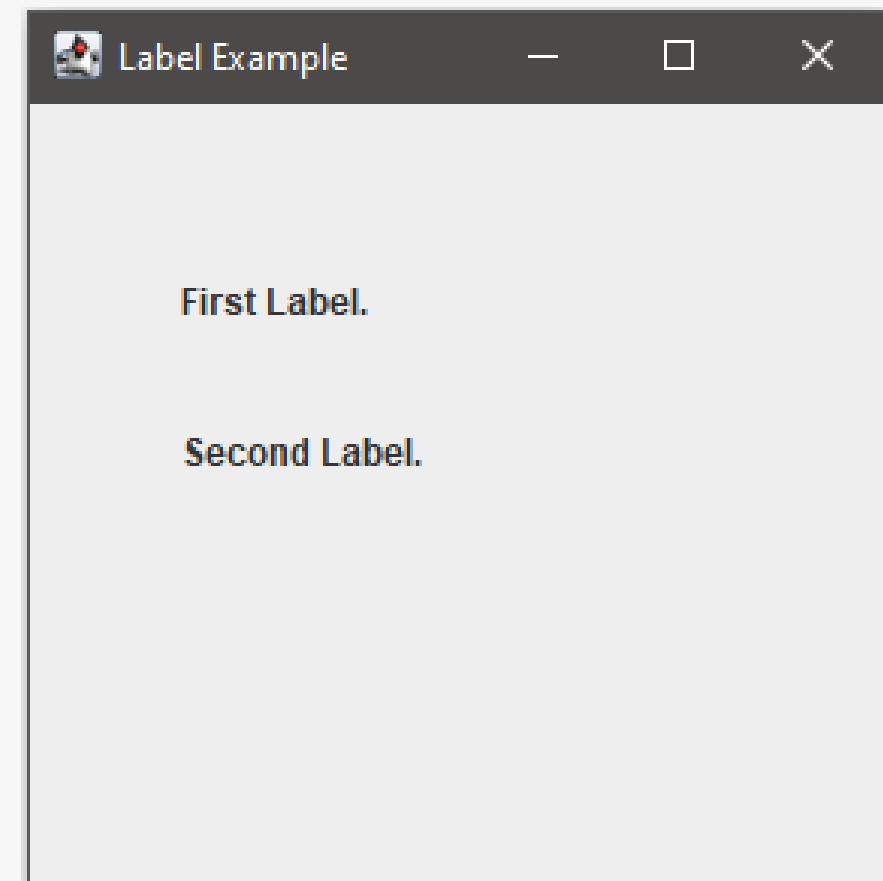
JButton

- JButton is an implementation of a push button.
- This component has a label and can also have an Image.



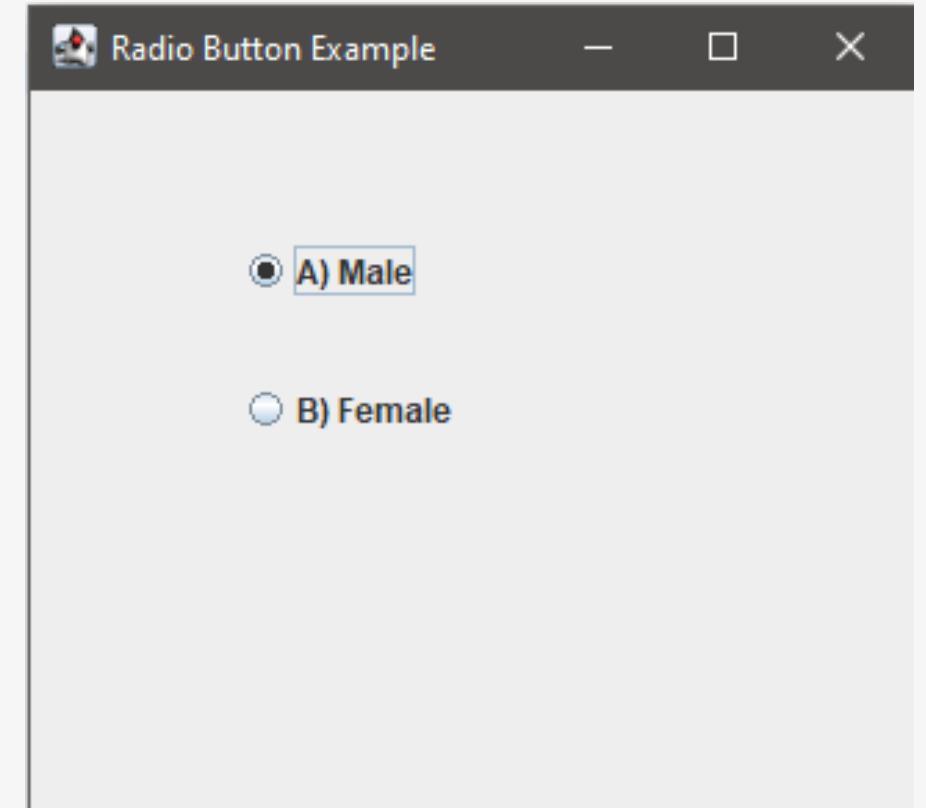
JLabel

- JLabel class is used to render a read-only text label or images on the UI.
- It does not generate any event.



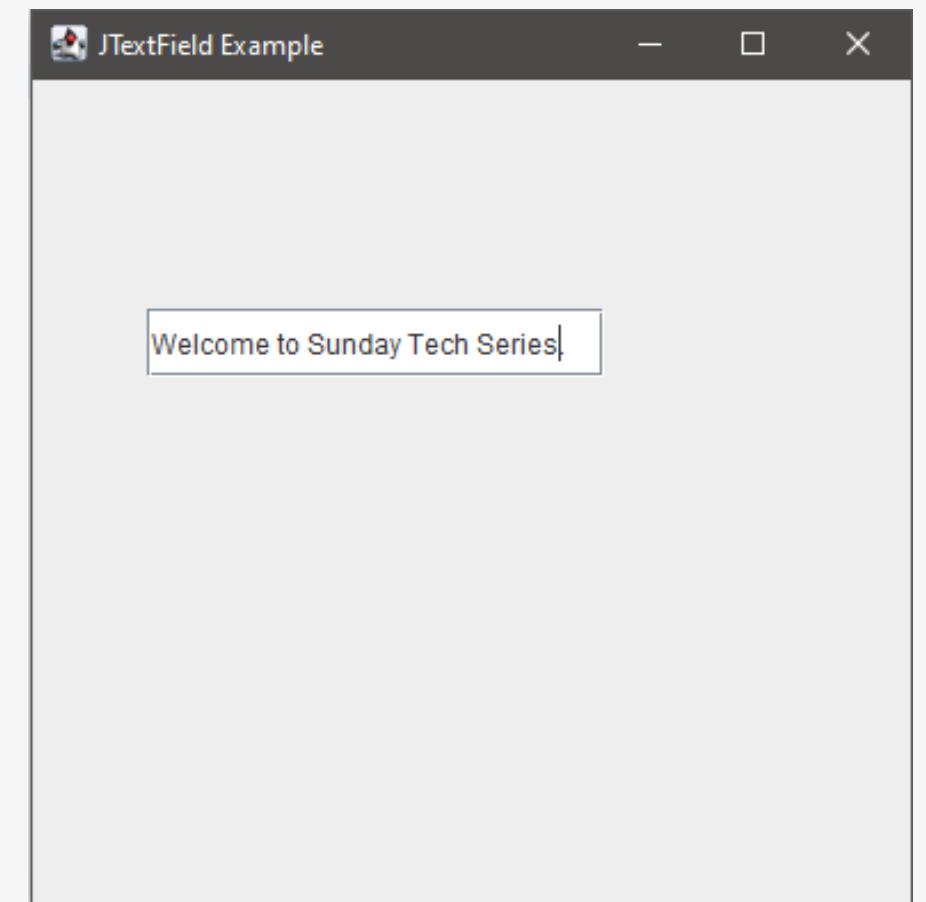
JRadioButton

- JRadioButton is an implementation of a radio button - an item that can be selected or deselected.
- It displays its state to the user.



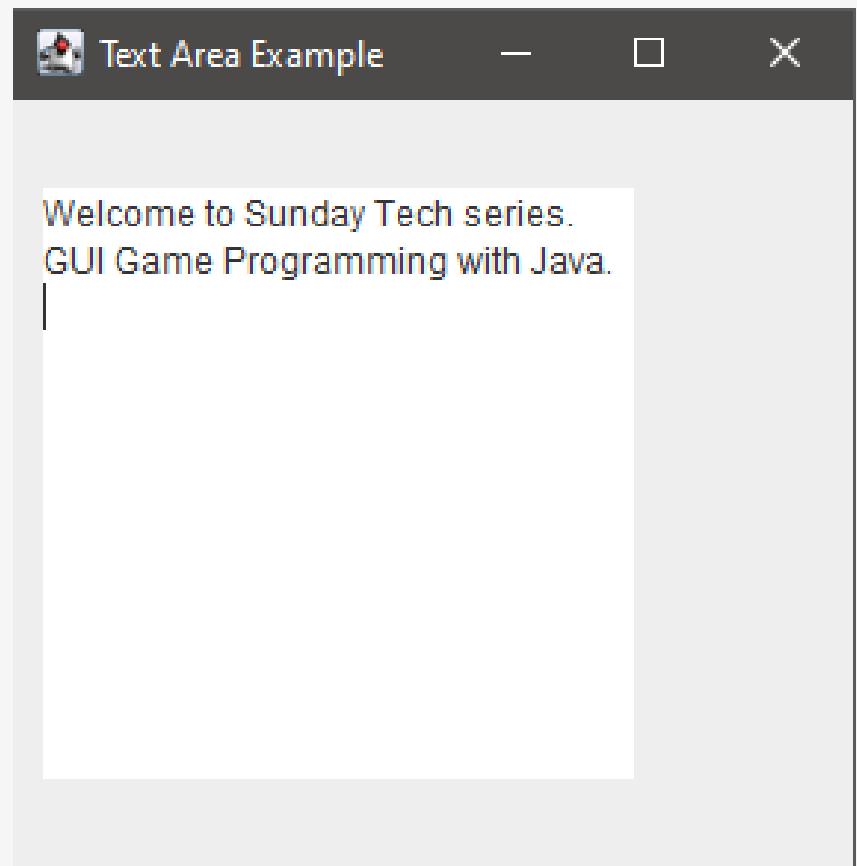
JTextField

- The class JTextField is a component which allows the editing of a single line of text



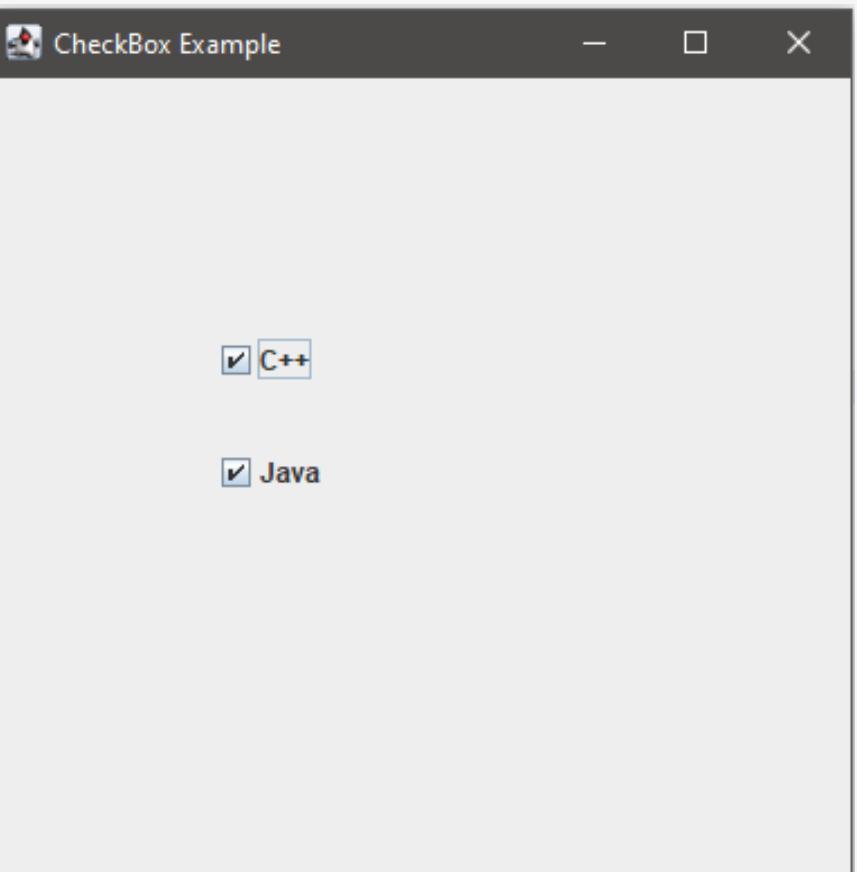
JTextArea

- The class JTextArea is a multi-line area to display plain text.



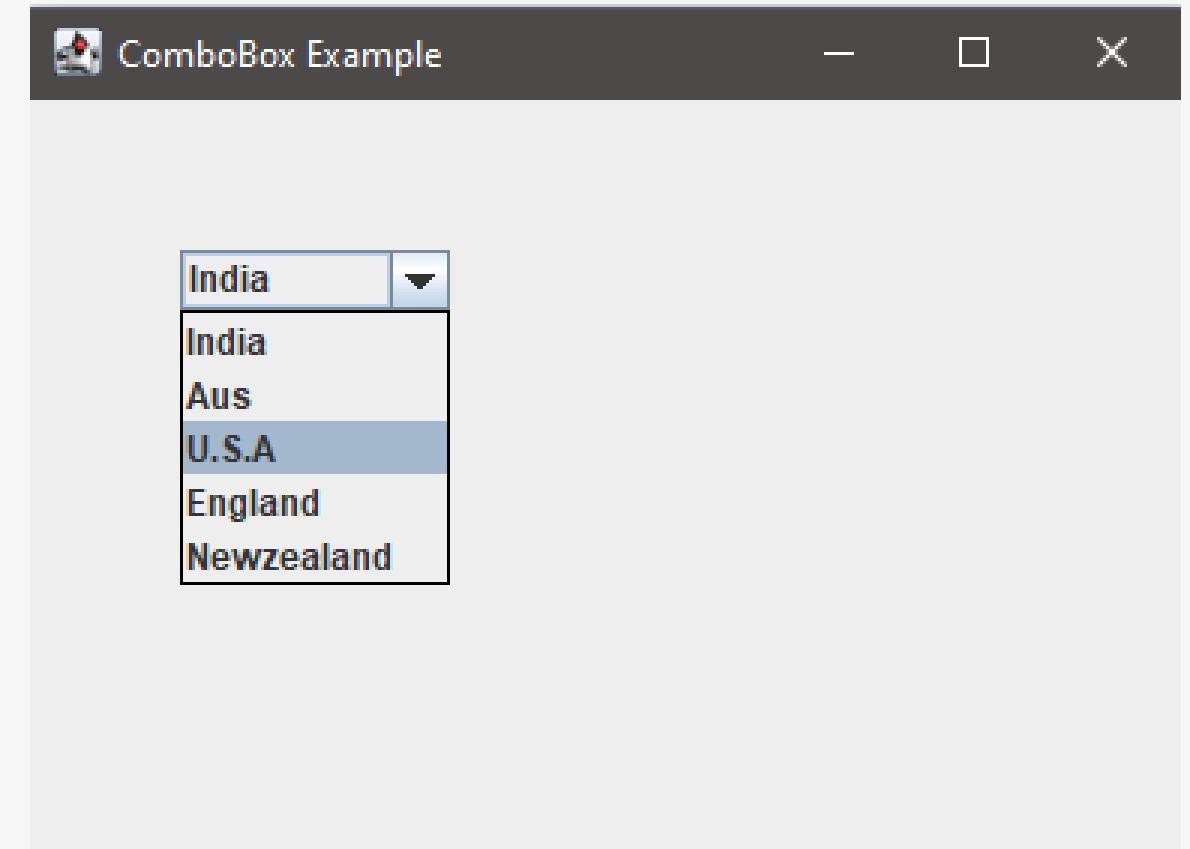
JCheckBox

- The class JCheckBox is an implementation of a check box - an item that can be selected or deselected.
- It displays its state to the user.



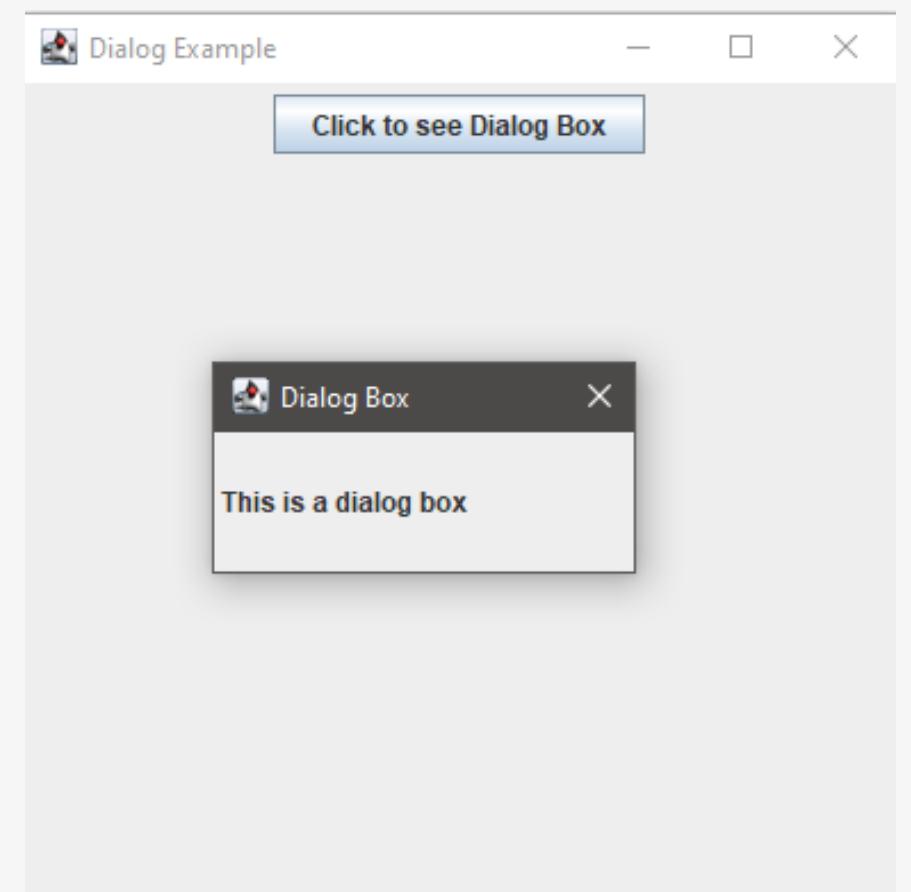
JComboBox

- JComboBox is a component which combines a button or editable field and a drop-down list.



JDialog

- JDialog control represents a top level window with a border.
- A title is used to take some form of input from the user.



POLL 4

In which of the following multiple options can be selected ?



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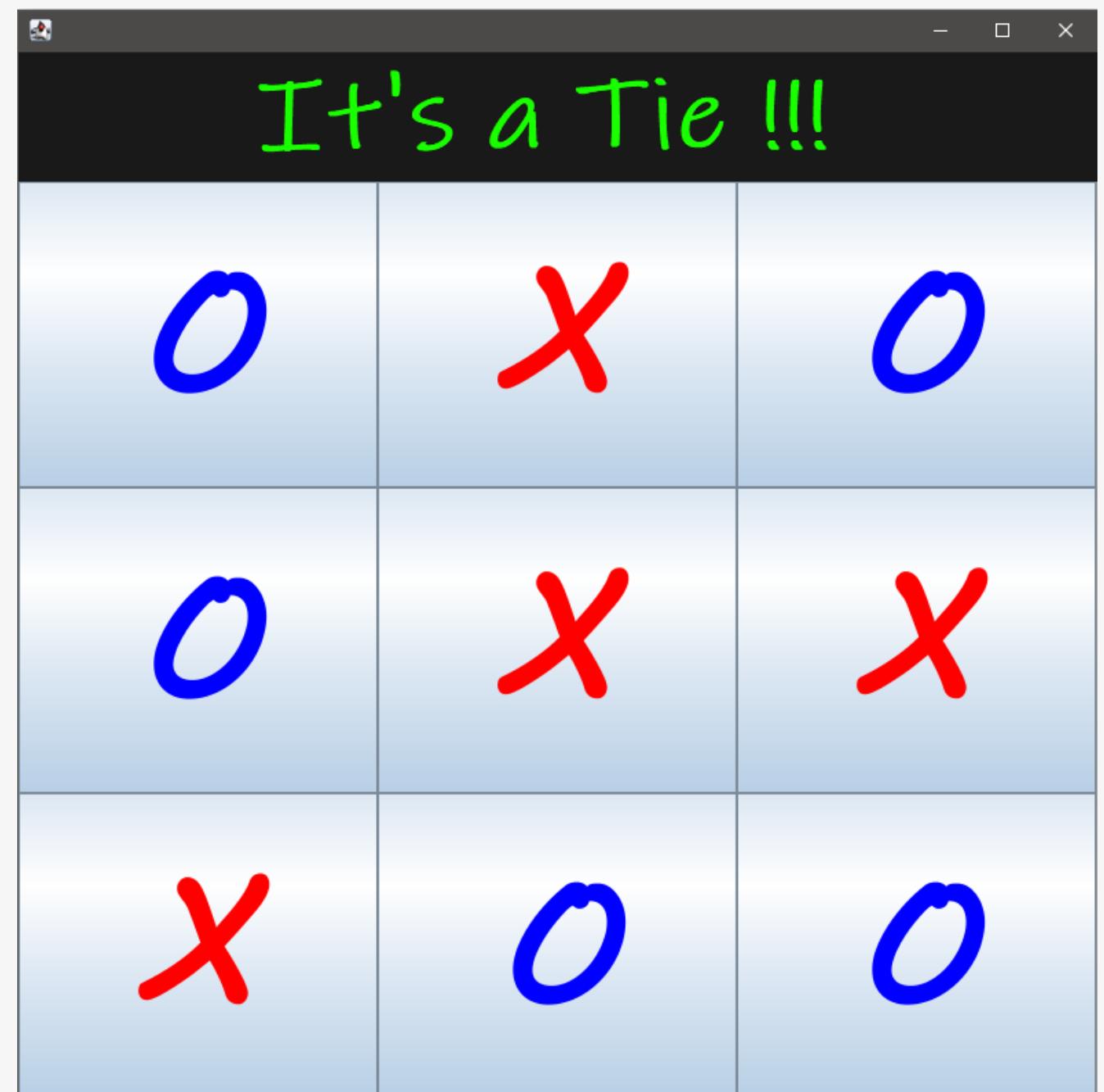
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Any Queries?

GUI GAME PROGRAMMING WITH JAVA

"Tic Tac Toe"



Rules for Tic-Tac-Toe

1. Play occurs on a 3 by 3 grid of 9 empty squares.
2. Two players alternate marking empty squares, the first player marking Xs and the second player marking Os.
3. If one player places three of the same marks in a row, that player wins.
4. If the spaces are all filled and there is no winner, the game ends in a draw.

```
System.out.println("THANK YOU!");
```

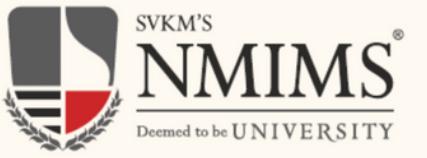
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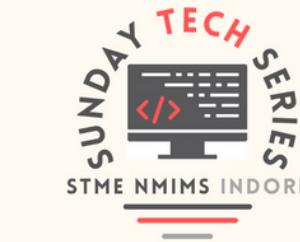
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This certificate is presented to

Sanjana Mahapatra

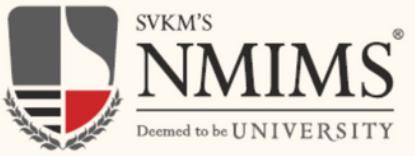
for securing First Position in **STS**
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Dr. Aaquil Bunglowala

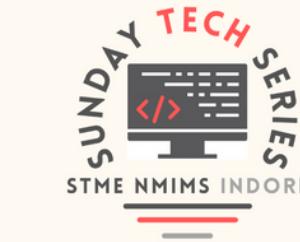
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INDORE



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Punit Gurnani

for securing Second Position in **STS**
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Indore on 13th June, 2021.

Dr. Aaquil Bunglowala

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