	PUNE INSTITUTE OF COMPUTER TECHNOLOGY, PUNE -43		
	Department of Electronics and Telecommunication Engineering		
	ASSESSMENT YEAR: - 2021-22		**CLASS: - TE-V**
	Subject: - Advanced Java Programming		
Expt. No: 2	**LAB Ref: ETC/2021-22/**	**ROLL NO:32147**	**SUBMISION DATE:**

Title: - Button, TextField and Label classes using AWT.

Problem Statement: -

Write a program in Java to study concept of Button, TextField and Label classes using AWT.

Objectives: -

- To learn the concepts of Button, TextField and Label classes and its methods

Theory (Write Theory of the new concept demonstrated in this Assignment)

The Frame is the container that contain **title bar and border** and can have menu bars. It can have other components like button, text field, scrollbar etc. Frame is most widely used container while developing an AWT application.

Types of containers:

There are four types of containers in Java AWT:

1.Window
2.Panel
3.Frame
4.Dialog

1)Button class :

This class creates a labeled button. The application can cause some action to happen when the button is pushed. The gesture of clicking on a button with the mouse is associated with one instance of ActionEvent, which is sent out when the mouse is both pressed and released over the button. If an application is interested in knowing when the button has been pressed but not released, as a separate gesture, it can specialize processMouseEvent, or it can register itself as a listener for mouse events by calling addMouseListener. Both of these methods are defined by Component, the abstract superclass of all components.

If an application wants to perform some action based on a button being pressed and released, it should implement ActionListener and register the new listener to receive events from this button, by calling the button's addActionListener method. The application can make use of the button's action command as a messaging protocol.

Methods of button class:

1. addActionListener(ActionListener l)

Adds the specified action listener to receive action events from this button.

2.getActionCommand()

Returns the command name of the action event fire by this button.

3.getLabel()

Gets the label of this button
4. setLabel(String label) Sets the button's label to be the specified string.
2)TextField class:
A TextField object is a text component that allows for the editing of a single line of text.

Here is the code that produces these four text fields:
TextField tf1, tf2, tf3, tf4;
// a blank text field
tf1 = new TextField();
// blank field of 20 columns
tf2 = new TextField("", 20);
// predefined text displayed
tf3 = new TextField("Hello!");
// predefined text in 30 columns

Every time the user types a key in the text field, one or more key events are sent to the text field.
A KeyEvent may be one of three types: keyPressed, keyReleased, or keyTyped. The properties of a key event
indicate which of these types it is, as well as additional information about the event, such as what modifiers are
applied to the key event and the time at which the event occurred.
The key event is passed to every KeyListener or KeyAdapter object which registered to receive such events
using the component's addKeyListener method. (KeyAdapter objects implement the KeyListener interface.)
Methods of textfield class:
1. addActionListener(ActionListener l) Adds the specified action listener to receive action events from this text field.

2. paramString() Returns a string representing the state of this TextField.
3.setText(String t) Sets the text that is presented by this text component to be the specified text
3)Label Class:
A Label object is a component for placing text in a container. A label displays a single line of read-only text. The
text can be changed by the application, but a user cannot edit it directly.

Eg:
setLayout(new FlowLayout(FlowLayout.CENTER, 10, 10));
add(new Label("Hi There!"));
add(new Label("Another Label"));

Methods of Label class:
1. getAlignment() Gets the current alignment of this label.
2.getText() Gets the text of this label
3.setAlignment(int alignment) Sets the alignment of this label to the specified alignment
4. paramString() Returns a string representing the state of this Label.

5. setText(String text)
Sets the text for this label to the specified text.

Diagram: -

Learning Outcomes: -		
	1	Learnt about different types of containers in frame
	2	We Understood about different components that we add on frame to complete our application
	3	Understood about button class and its different methods.
	4	Understood about TextField class and its different methods.
	5	Understood about Label class and its different methods.

Continuous Assessment

RPP (out of 5)	SPO (out of 5)	Total (Out of 10)	Sign
			Date: -

#(RPP – Regularity, Punctuality, Performance), (SPO – Submission, Presentation, Oral)

Important Questions: -
1.What are different types of containers in frame and its uses?
2.List different components of frame that we use to complete our frame.
3.What are menubars and methods in menubars?
4.What is difference between Window and Panel?
5.What are different methods of container class?