

LIST OF EXPERIMENTS AND RECORD OF PROGRESSIVE ASSESSMENT

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LIST OF EXPERIMENTS AND RECORD OF PROGRESSIVE ASSESSMENT

Exp. No.	Name of the Experiment	Page No.	Date of Performance	Date of submission	Assesment Max. Marks 10	Sign of teacher & Remarks
18	To develop a program demonstrating session tracking.	106				
					Total Marks. Average Marks out of 10..... *	

* To be transferred to proforma of CIAAN – 2006(Proforma – A-1)

NOTE: The curriculum of this subject is referred and the above list of experiments is finalized to achieve the desired objectives.

EXPERIMENT No.1

1.0 Title:

To develop a program illustrating the use of the following AWT components in an applet
 TextField, TextArea, Button and Label.

2.0 Prior Concepts:

Applet and its init () method.

3.0 New Concepts:

Proposition 1: Abstract Window Toolkit (AWT)

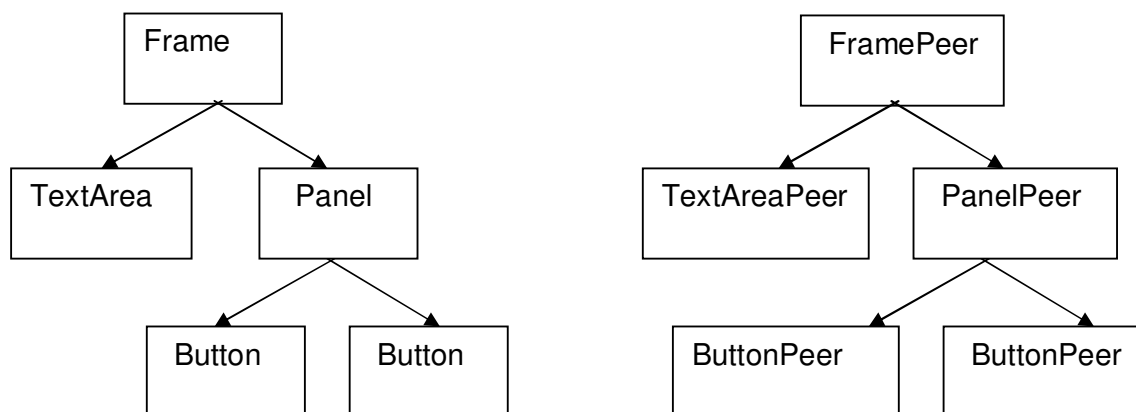
It provides the necessary support for developing GUI programs.

Proposition 2: Components

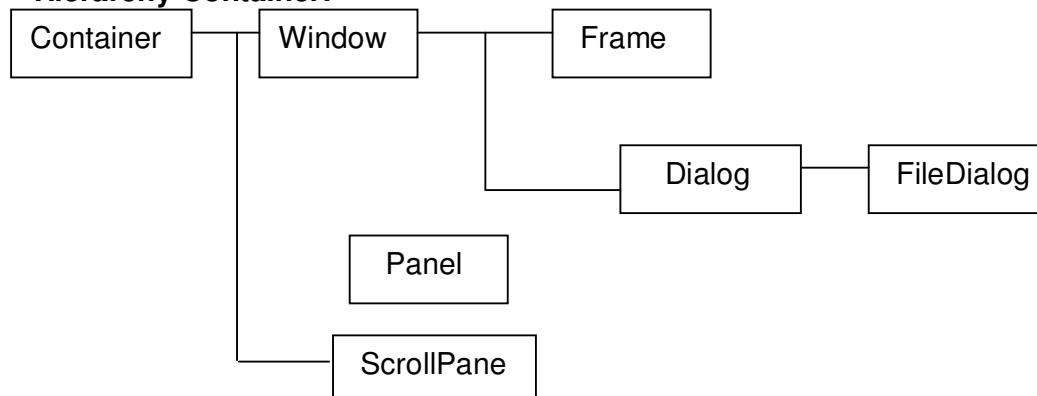
A component is a kind of thing such as buttons; checkboxes etc.that can be put onto a user interface

Concept Structure:

The Component Hierarchy and its Corresponding Peer Class Hierarchy.



Hierarchy Container:



4.0 Learning Objectives :

Intellectual Skills:

- To understand the AWT and its components.

- To understand the use of these components.

Motor Skills:

- Ability to create various AWT components.
- Ability to use these components.

5.0 Apparatus:

A computer system loaded with the required java software.

6.0 Stepwise Procedure:

- Creating the AWT Components:

```
Button b = new Button ("Submit");
```

It creates a button object b with the text/label "Submit".

- To create a Label component we can write :

```
Label l = new Label ("Enter Your Name");
```

- Adding the components to the container:

It is done by calling the container's add() method with the component as the only argument.

Eg. To add the button component 'b' , we have to write : add(b);

To add the label component l, we have to write : add(l);

Sample Program

The following program creates five AWT components namely- TextField, TextArea, Button and a Label and places these components onto the Applet window container using the container's add() method.

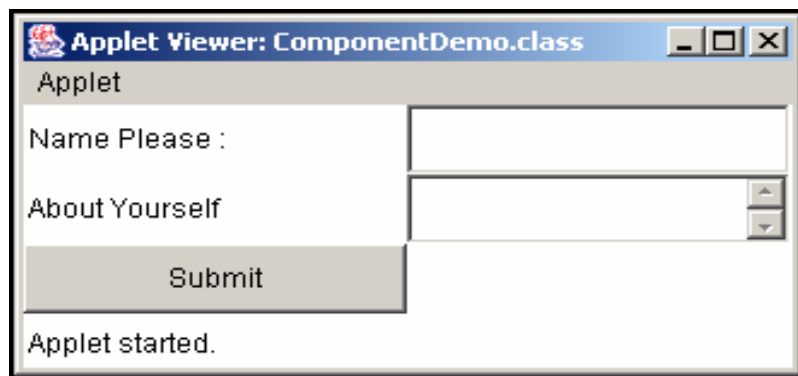
```
import java.awt.*;
import java.applet.*;
public class ComponentDemo extends Applet
{
    // Declaring AWT Components
    TextField txtField;
    TextArea txtArea;
    Button btn;
    Label name;
    Label about;
    //Applet's init() method
    public void init()
    {
        // Creating AWT components
        txtField = new TextField();
        txtArea = new TextArea();
        btn = new Button("Submit");
```

```

        name = new Label("Name Please :");
        about = new Label("About Yourself");
        //Adding AWT components to the container
        setLayout(new GridLayout(3,2));
        add(name);
        add(txtField);
        add(about);
        add(txtArea);
        add(btnn);
    }
}
/* <APPLET CODE ="ComponentDemo.class" HEIGHT=100 WIDTH=200>
</APPLET> */

```

Output of the program:



7.0 Laboratory Practice:

Form a group of two/three students. The group shall develop the program for any one from the following as instructed by Teacher.

1. Develop a program to add two labels and a single button to an applet.
2. Develop a program to add a label, a text field and a checkbox to an applet.
3. Develop a program to add a text area and a button to a standalone application.
4. Develop a program to illustrate the use of choice list and scrolling list in an applet.
5. Develop a program to illustrate the use of scrollbars, sliders and a canvas.

NOTE: The Teacher shall contribute to the given list of programs. 

6.....

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7.....

8.0 Observations:

Students shall write the allotted program in the space provided below. Also attach the computer print out on separate A4 page and paste in the manual.

Sr. No. of allotted program

(Space for Program)

**9.0 Questions:**

Write answers to Q.....,Q.....,Q.....,Q..... (Teacher shall allot the questions.)

1. What are AWT components?
2. What are the different AWT components?
3. What is a container?
4. Write the procedure to create and add the different AWT components.
5. In what way TextField and TextArea are different?

6. What is the use of a canvas?
7. What are the different constructors for the Button component?
8. How to create a TextField of a particular length?
9. What is the use of the keyword “new” used in AWT programming?
10. Why the container is an abstract class?
11. What are the steps to be followed while adding a component to a frame?
12. How to avoid the use of default Layout in a container?
13. What is meant by Controls?
14. What are different types of controls?
15. Which method of the component class is used to set the position and the size of a component?
16. Which TextComponent method is used to set a TextComponent to the read only state?
17. How can the Checkbox class be used to create a radio button?
18. What methods are used to get and set the text label displayed by a Button object?
19. What methods are used to get and set the text label displayed by a Button object?
20. What are the subclasses of the Container class?

10.0 Conclusion:

1. AWT classes are contained in the Package. (java. awt / java. application)
2. To add any component, method is used.(include()/ add())
3. Student shall write the statement on the basis of laboratory practice allotted , under the guidance of the teacher.

e.g. If laboratory practice is to develop a program to add two labels and a single button to an applet , the statement can be –

“To create two labels and a single button”

.....

.....

(Space for Answer)

EXPERIMENT No.2

1.0 Title:

To develop a program demonstrating the use of Grid layout in an Applet.

2.0 Prior Concepts:

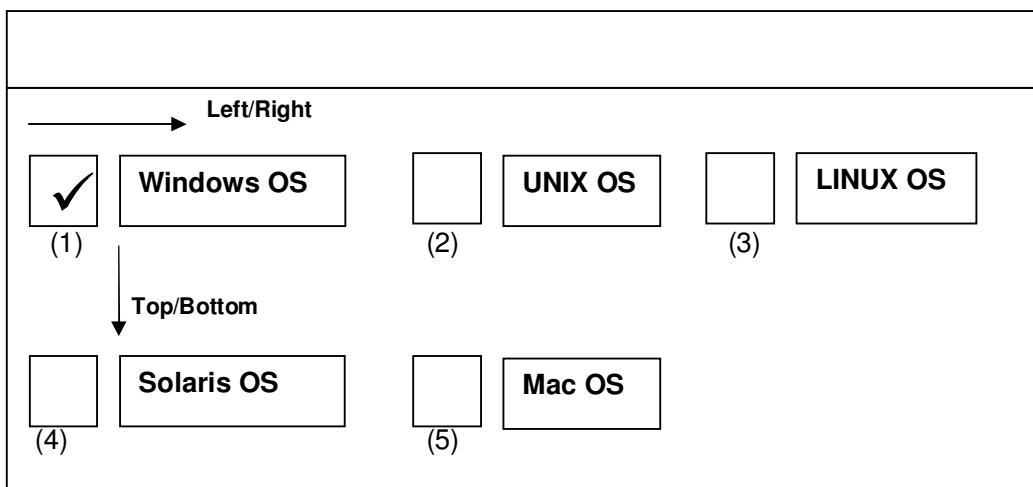
Applet and AWT components.

3.0 New Concepts:

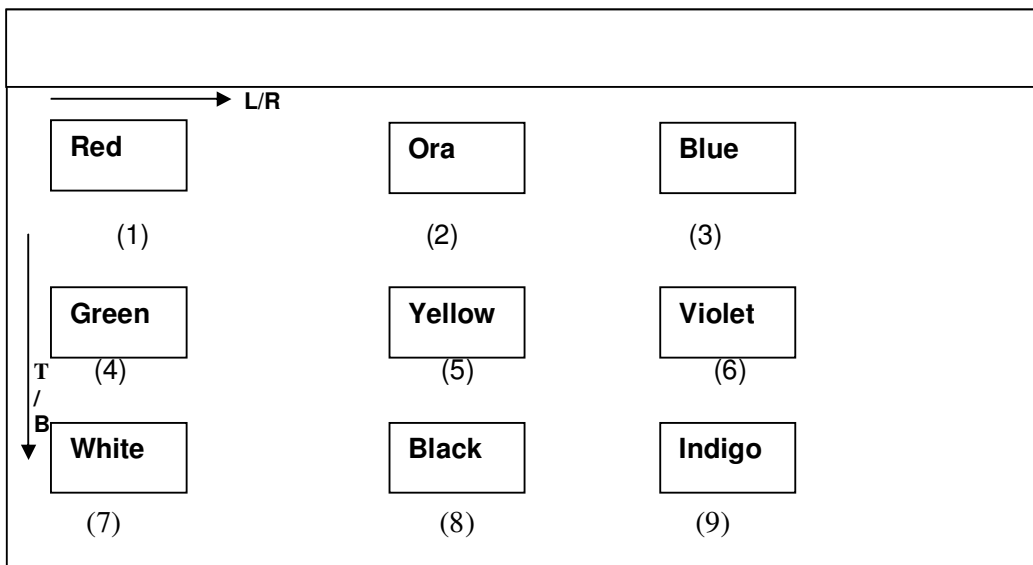
Proposition 1: A layout Manager

It is a facility that determines how components will be arranged when they are added to a container. There are five layout managers that are included in the AWT. These are FlowLayout, GridLayout, BorderLayout, CardLayout and GridBagLayout. Out of these, FlowLayout, is the default layout manager.

Concept Structure : Flow Layout



Concept Structure : Grid Layout



4.0 Learning objectives:

Intellectual Skills:

- To understand the concept of layout managers
- To learn how to use the layout managers
- To understand the effect of different layout managers on the position of components onto a containers.

Motor Skills:

- Ability to create layout managers.
- Ability to apply layout manager.

5.0 Apparatus:

A computer system loaded with the required java software.

6.0 Stepwise procedure:

- To create a layout manager for a container, an instance of it is created as-

```
FlowLayout fl = new FlowLayout( );
GridLayout gl = new GridLayout(5,3);
```

In the GridLayout constructor, the first argument indicates the number of rows in the grid and the second argument indicates the number of columns.

After the creation of an instance of a layout manager, set it as the layout manager for a container by using the container's setLayout() method.

Eg. To set the FlowLayout 'fl' just created, we have to write :- setLayout(fl);

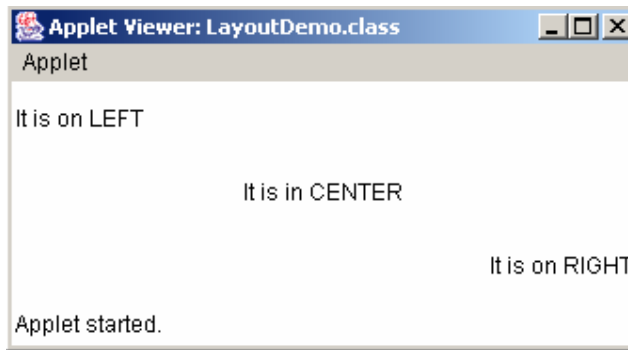
Sample program:

It's a program that demonstrates the use of GridLayout manager and shows how the AWT components (here label) are added to the container using the GridLayout manager.

```
import java.awt.*;
import java.applet.*;
public class LayoutDemo extends Applet
{
    Label center; Label left; Label right;
    public void init( )
    {
        left = new Label("It is on LEFT");
        center = new Label("It is in CENTER");
        right = new Label("It is on RIGHT"); //creating an instance of GridLayout//
        GridLayout gl = new GridLayout(3,1);
        setLayout(gl);
        add (left); //adding the components to a container//
        add (center);
        add (right);
    }
} //Applet tag
```

```
/*      <APPLET CODE= "LayoutDemo.Class" HEIGHT=100 WIDTH=150>
</APPLET>      */
```

Output of the program:



7.0 Laboratory Practice:

Form a group of two/three students. The group shall develop the program for any one from the following as instructed by Teacher.

1. Develop a program illustrating the use of BorderLayout in an Applet
2. Develop a program using CardLayout and add five labels to the Applet.
3. Develop a program which will demonstrate the use of GridBagLayout manager.
4. Develop a program which makes the use of FlowLayout and GridLayout manager.
5. Develop a program that arranges two text fields using FlowLayout and two buttons using GridBagLayout manager.

NOTE : The Teacher shall contribute to the given list of programs.



- 6.....

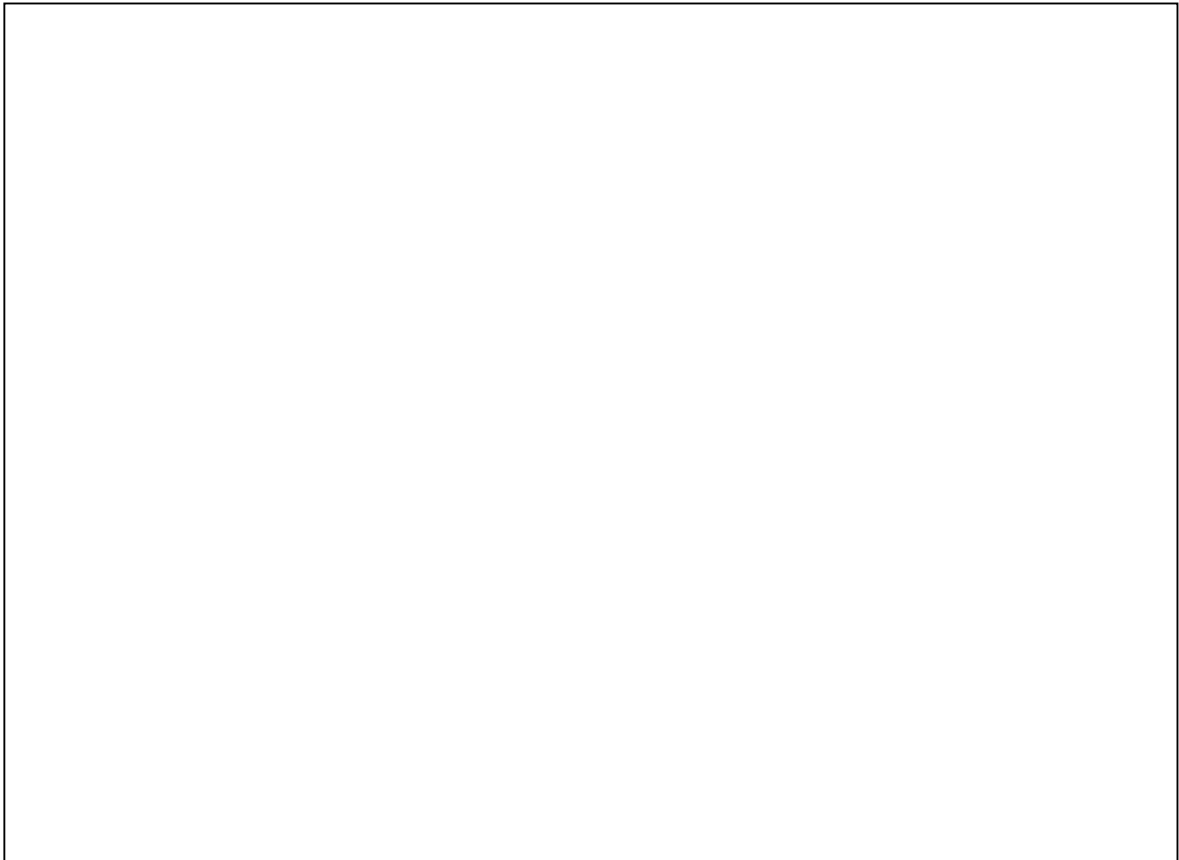
 7.....

8.0 Observations:

Students shall write the allotted program in the space provided below. Also attach the computer print out on separate A4 page and paste in the manual.

Sr. No. of allotted program

(Space for Program)



9.0 Questions:

Write answers to Q.....Q.....Q.....Q..... Teacher shall allot the question.

1. What are the responsibilities of the Layout Manager vs container ?
2. How much is the default horizontal and vertical gap in FlowLayout ?
3. What is the default alignment of buttons in Flow Layout ?
4. Explain all the components of GridBagLayout.
5. Which GridBagLayout variable defines the external padding (border) around the component in its display area ?
6. Which Layout Manager follows the following placement policy - "Lays out the components in row-major order in rows growing from left to right, and rows from top to bottom in the container." ?
7. What is the default Layout Manager for the Dialog class in Java?
8. What is meant by a Layout manager?
9. What are the different Layout Managers available in java.awt ?
10. What is the default Layout manager for the panel?
11. Can the same component be added to more than one container?
12. Which containers use a BorderLayout as their default layout?
13. Which containers use a FlowLayout as their default layout?

14. How to change the current layout manager for a container?
15. What happens if you add more buttons to a GridLayout than can fit and and fully display the button labels?
16. What are the fields of the GridBagConstraints class?
17. What is the preferred size of a component?
18. What method is used to specify a container's layout?
19. How are the elements of different layouts organized?
20. What is the default Layout Manager for the Applet class in Java?

10.0 Conclusion :

1. is used to arrange the components within a window. (Layout manager / Scroll bar)
2. is used as the default layout manager.(FlowLayout / GridLayout)
3. Student shall write the statement on the basis of laboratory practice allotted , under the guidance of the teacher.

(For example, refer page no 05 of Experiment No. 1)

(Space for Answer)

EXPERIMENT NO 3

1.0 Title:

To develop a program to change font and color of the given text.

2.0 Prior concepts:

Exploring text & Graphics, setting the paint mode.

3.0 New Concepts:

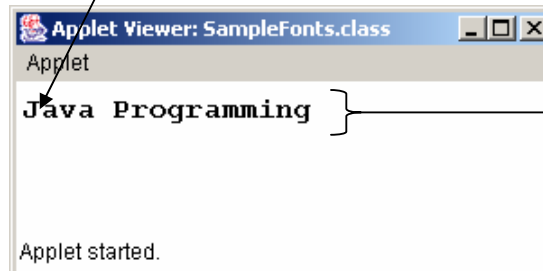
Proposition 1:- Fonts

The Abstract window toolkit supports multiple type fonts as Times New Roman, Arial, Courier New, Monotype Corsiva etc. The AWT provides flexibility by abstracting font manipulation that describes the font. Font constructor has the general form as

```
Font (String fontName, int fontStyle, int pointSize)
```

E.g.

```
Font f = new Font("Courier New",Font.BOLD,16);
setFont(f);
```



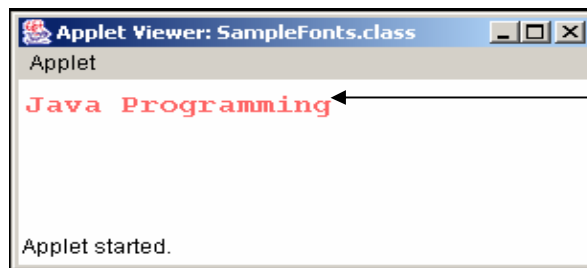
Proposition 2:- Color

The AWT color system allows specifying any color to display background, text or geometrical shapes. Color is encapsulated by the **Color** class. Color defines several constants as Color.black, Color.blue, Color.yellow etc. In addition to these colors we can create new color using following constructor-

```
Color(int red, int green, int blue)
```

Value of red, green, blue ranges from 0 to 255.

E.g. `Color c = new Color(255,100,100); // light red`
`setForeground(c);`



4.0 Learning Objectives:

Intellectual Skill:

Experiment No.2

- To understand the process of applying different fonts and color to the given text.
- To understand different methods to set as well as to retrieve the font and colors of given text.

Motor Skill:

- Ability to change the font and color of given text.
- Ability to set different fonts and colors for given text.
- Ability to draw different geometrical shapes filled with specified colors.

5.0 Stepwise Procedure

1. Write the program in Java Text Pad.

E.g. Given a sample program to set the font of given text "Java Programming" as Courier New, style as BOLD, size as 16 and color as Light red.

```
import java.applet.*;
import java.awt.*;
import java.applet.*;
public class SampleFonts extends Applet
{
    Font f;
    Color c ;
    public void init()
    {
        f = new Font("Courier New",Font.BOLD,16);
        setFont(f);
        c = new Color(255,100,100); //light red
        setForeground(c);
    }
    public void paint(Graphics g)
    {
        g.drawString("Java Programming",4,20);
    }
}
```

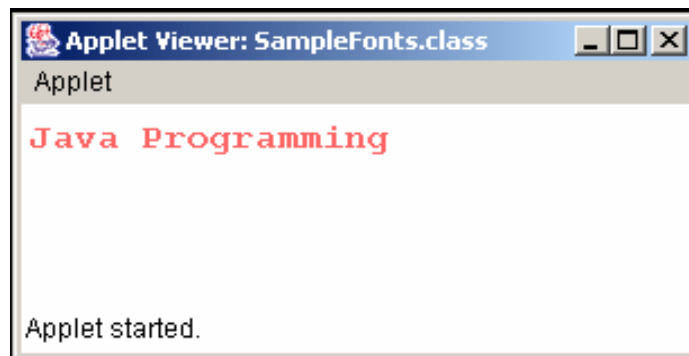
2. Save the program as .java file in Bin directory of jdk

3. Write HTML code for the applet.

```
<HTML><HEAD></HEAD><BODY>
<APPLET CODE="SampleFonts.class" CODEBASE="." WIDTH=400 HEIGHT=300>
</APPLET>
</BODY></HTML>
```

4. Compile the java program.

5. Open java enabled web browser and run the applet.

Output:**7.0 Laboratory Practice :**

Form a group of two/three students. The group shall develop the program for any one from the following as instructed by Teacher.

1. Develop a program to display the given string in red color, Times New Roman font with italic style and font size of 14.
2. Develop a program which will display the button component in the background color.
3. Develop a program which will increase the font size of a given string by 2 Point with every mouse click (Max. 10 clicks).
4. Develop a program which will change the font color from red to green and from green to blue on every mouse click.
5. Develop a program to set the background color of the applet as yellow.

Experiment No.3

NOTE : The Teacher shall contribute to the given list of programs.



- 6.....

 7.....

8.0 Observations:

Students shall write the allotted program in the space provided below. Also attach the computer print out on separate A4 page and paste in the manual.

Sr. No. of allotted program

(Space for Program)

9.0 Questions:

Write answers to Q.....,Q.....,Q.....,Q.....,Q....(Teacher shall allot the question.)

1. Write the Font class and Color class of AWT?
2. What is the FontMetrics class of AWT ?
3. How to obtain the information about a font?
4. What is the use of the following methods of a Font class?
 - StringWidth(String) • CharWidth(char) • getHeight()
5. How to create different components (such as buttons) in different colors?
6. How to obtain the information about current color ?
7. How to set the background color of an Applet as the current color ?
8. Write the use of the setBackground() and setForeground() method?
9. Which method is to be used to obtain the information about the fonts of the text ?
10. What is the difference between the Font and FontMetrics classes?
11. What is Canvas?
12. How the paint settings are retrieved?
13. What are the possible arguments to the setPaint() method ?
14. What are the different constructors of the font class?
15. Write the purpose of the getPeer() method.
16. Write and explain the syntax for the createFont() method.
17. How to obtain the information about the current font style?
18. How to return the hashcode for the given font?
19. How a new font is derived from the existing one?
20. What does the package java.awt.font contain?

10.0 Conclusion:

1. class is used to set the font size of the string to be displayed in window. (Font / Fontsize)
2. method is used to set background color of an applet. (setBackground() / setColor())
3. Student shall write the statement on the basis of laboratory practice allotted , under the guidance of the teacher.

(For example, refer page no 05 of Experiment No. 1)

(Space for Answer)

Experiment No.3

EXPERIMENT No. 4

1.0 Title:

To develop a program to create a menu with various menu items and submenu items.

2.0 Prior concepts:

AWT

3.0 New concepts:

Proposition1: Menu bar

A menubar is an AWT component and contains a collection of menus. It is set for a particular window.

Proposition2: Menu

A menu is also an AWT component and contains a collection of menu items. Menus are added to the menubar.

Proposition3: Menu item

A menu item is also an AWT component and is added to the menu under different menu categories.

4.0 Learning objectives:

Intellectual Skills :

- To understand the concepts of menu bar, menu and menuitems.
- To learn how to create these AWT components.

Motor Skills:

- Ability to create menu bar, menus and menuitems.
- Ability to set and use these components.

5.0 Apparatus:

A computer systems loaded with the required java software.

6.0 Stepwise procedure:

- Creating a menu bar :
`MenuBar mbar= new MenuBar();`
- Setting menubar for the window:
`window.set MenuBar (mbar);` Here window is an object of frame.
- Creating Menus:
`Menu fileMenu= new Menu ("File");`
- Adding individual menus to the menubar
`mbar.add(fileMenu);`
`mbar.add(editMenu);`
- Creating Menu items:

```
MenuItem info= new MenuItem ("Info");
MenuItem open= new MenuItem("Open");
```

- Adding a MenuItem to a Menu :

```
fileMenu.add(info);
editMenu.add(open);
```

So, the process is to first create the Menu bar. Set this Menu bar for the given window. Next create the desired Menus. Add these to the Menu Bar. Next create the Menu items for the different menus and add them to the respective menus.

Note: A particular Menu/ MenuItem can be made disable from selecting by the disable() method e.g. fileMenu. Disable();

- A checkable MenuItem can also be created:

```
checkboxMenuItem cbx = new checkboxMenuItem(" Show coordinates");
```

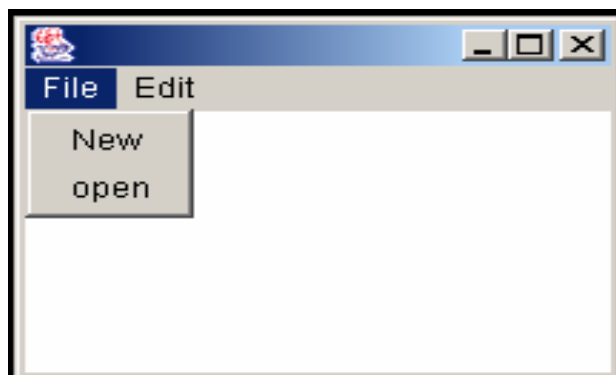
Sample program:

The following program creates a menu bar with two menus- File and Edit.

It also creates two Menu items 'New' and 'Open'.

```
import java.awt.*;
public class MenuDemo extends Frame
{
    public static void main(String args[])
    {
        MenuDemo m = new MenuDemo();
        m.setVisible(true);
        MenuBar mbar = new MenuBar();
        m.setMenuBar(mbar);
        // Creating Menus
        Menu fileMenu = new Menu("File");
        Menu editMenu = new Menu("Edit");
        // Adding Menus to Menubar
        mbar.add(fileMenu);
        mbar.add(editMenu);
        // Creating MenuItems for file menu.
        MenuItem new1=new MenuItem("New");
        MenuItem open1=new MenuItem("open");
        // Adding these to the FileMenu
        fileMenu.add(new1);
        fileMenu.add(open1);
    }
}
```

Output of the program:



7.0 Laboratory Practice:

Form a group of two/three students. Each group shall develop the program for any one from the following as instructed by the teacher.

1. Develop a program to create three Menus- 'Format', 'Tool' and 'Help' and add the suitable Menu items under these menus.
2. Develop a program which will create checkable Menu items-'open' under the menu 'File' and ' Cut' menu item under the Menu 'Edit'.
3. Develop a program to create a menu- 'File' with three Menu items 'Open', 'Close' and 'Save'. Whenever a menu item is clicked, display the same in textfield.
4. Develop a program to create three Menus- 'File', 'Edit' and 'Format'. Disable the 'Format' Menu.
5. Develop a program to create two menus-'File' and 'Edit'. Add the suitable menu items and the sub menu items.

NOTE : The Teacher shall contribute to the given list of programs.



- 6.....

 7.....

8.0 Observations:

Students shall write the allotted program in the space provided below. Also attach the computer print out on separate A4 page and paste in the manual.

Sr. No. of allotted program

(Space for Program)

9.0 Questions:

Write answer to Q.....,Q.....,Q.....,Q..... (Teacher shall allot the questions.)

1. What are Menubar, Menu and MenuItem?
2. Write the procedure to create a MenuBar and to add menus to it.
3. What are checkable Menu items?
4. How to make a particular menu item disable from selecting ?
5. What are the different events that can be associated with the menu items?
6. Explain the list- select and the list- deselect events.
7. Explain the various constructors of the class Menu.
8. What do you understand by popup Menu ?
9. What are sub Menus?
10. What is a progress bar ?
11. List the three components that compose a mean of a top level window.
12. Are Menus the only thing that can be attached to menu bar ?
13. What happens when a menu is added to another menu ?
14. How to use menu shortcuts ?
15. What are the steps to add a menu to a Frame ?
16. Write the syntax for the setMenuBar () method.
17. How can a menu item handle its own events ?
18. Which AWT components can hold a menu ?
19. How to obtain keyboard shortcuts (speed keys) for the menu items ?
20. How to create menu items with speed keys (i.e. Ctrl-P for Print and Shift-Ctrl-P for Print Preview) ?

10.0 Conclusion:

1. To create a menu bar, an instance of _____ is created.
(Menu Bar / Menu Item)
2. To disable or enable a menu item _____ method is used.
(Set Enabled / Get Enabled)
3. Student shall write the statement on the basis of Laboratory Practice allotted by the teacher under the guidance of teacher.
(For example, refer page no 05 of Experiment No.01)

(Space for answers)

EXPERIMENT No. 5

1.0 Title:

To develop a program to handle events.

2.0 Prior concepts:

AWT controls, Layout, applet.

3.0 New concepts:

Proposition 1: Event

An event is an object that describes a change in the state of a source. It can be generated as a consequence of a person interacting with the elements in a graphical user interface. Some of the activities that cause events to be generated are pressing a button, entering a character via the keyboard, selecting an item in a list, clicking the mouse etc.

Proposition 2: Handling of events using EventListener

In java, the events are managed by the use of one or more EventListener interfaces. The EventListener interfaces enable a component of a graphical user interface to generate user event. Only that listener will receive the type of event that are registered with an object which is going to generate event i.e. source object. For example KeyListener is used for handling key events.

4.0 Learning objectives:

Intellectual Skills :

- To understand the process of generating different events.
- To understand the method to register an object.

Motor Skills :

- Ability to apply different events.
- Ability to implement various methods for appropriate listener class.

5.0 Apparatus:

A computer system loaded with the required java software.

6.0 Stepwise Procedure:

1. Import the awt, applet and awt.event packages.
2. Create a public subclass of applet class and implement the appropriate event listener interface.
3. Decide the event to be handled by the program.
4. Assign the event control.
5. Implement the method of event listener interface to handle the event and declare those methods public.

Sample Program

Program to display an applet to accept two numbers in the text field and four buttons with caption Addition, Subtraction, Division, Multiplication. when one of these buttons is pressed the result will be displayed in the third text field.

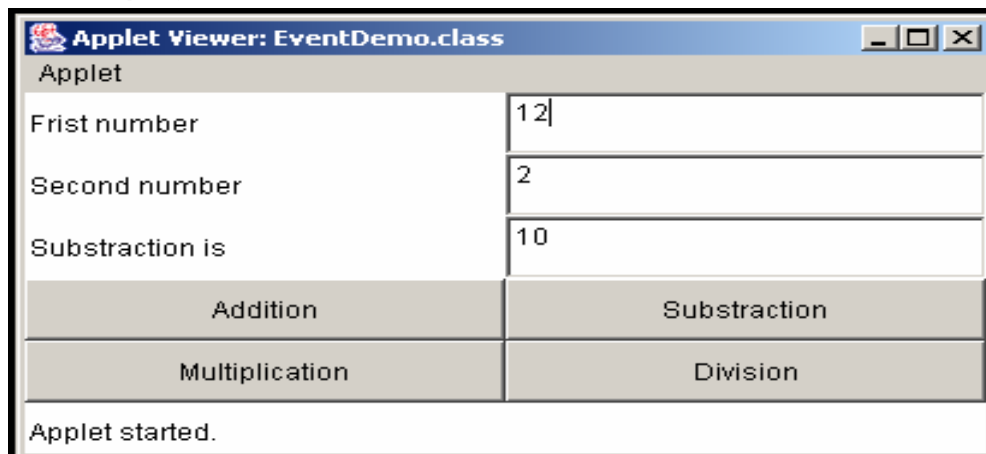
```
import java.awt.*;
import java.applet.*;
import java.awt.event.*;
public class EventDemo extends Applet implements ActionListener
{
    TextField t1,t2,t3;
    Button b1, b2, b3, b4;
    Label l1,l2,l3;
    public void init()
    {
        t1= new TextField(5);
        t2= new TextField(5);
        t3= new TextField(5);
        l1= new Label("First number");
        l2= new Label("Second number");
        l3= new Label();
        b1=new Button("Addition");
        b2=new Button("Subtraction");
        b3=new Button("Multiplication");
        b4=new Button("Division");
        b1.addActionListener(this);
        b2.addActionListener(this);
        b3.addActionListener(this);
        b4.addActionListener(this);
        GridLayout g= new GridLayout(5,2);
        setLayout(g);
        add(l1);add(t1);add(l2); add(t2);
        add(l3);add(t3);add(b1);add(b2);
        add(b3);add(b4);
    }
    public void actionPerformed(ActionEvent e)
    {
        if(e.getSource()==b1)
        {
            int n1= Integer.parseInt(t1.getText());
            int n2= Integer.parseInt(t2.getText());
            int n3=n1+n2;
            l3.setText("Addition is");
            t3.setText(Integer.toString(n3));
        }
        if(e.getSource()==b2)
        {
            int n1= Integer.parseInt(t1.getText());
            int n2= Integer.parseInt(t2.getText());
```

```

        int n3=n1-n2;
        l3.setText("Subtraction is");
        t3.setText(Integer.toString(n3));
    }
    if(e.getSource()==b1)
    {
        int n1= Integer.parseInt(t1.getText());
        int n2= Integer.parseInt(t2.getText());
        int n3=n1*n2;
        l3.setText("Multiplication is");
        t3.setText(Integer.toString(n3));
    }
    if(e.getSource()==b1)
    {
        int n1= Integer.parseInt(t1.getText());
        int n2= Integer.parseInt(t2.getText());
        int n3=n1/n2;
        l3.setText("Division is");
        t3.setText(Integer.toString(n3));
    }
}
}
}

```

Output of the program:



7.0 Laboratory Practice :

Form a group of two/three students. Each group shall develop the program for any one from the following as instructed by the teacher.

1. Develop a program to create an applet to accept a number in a text field and display the square of the number when a button with caption Square is pressed.
2. Develop a program to create an applet to find the factorial of the number entered in text field 1 when a button captioned ' find factorial' is pressed.
3. Develop a program to create an applet to change the background color of an applet according to the scrolling of three scrollbars namely 'Red',' Green' and 'Blue'.
4. Develop a program to create an applet to notify the type of event generated.

5. Develop a program to create an applet to display the item selected by clicking on the checkbox.

NOTE : The Teacher shall contribute to the given list of programs.

6.....

.....

7.....

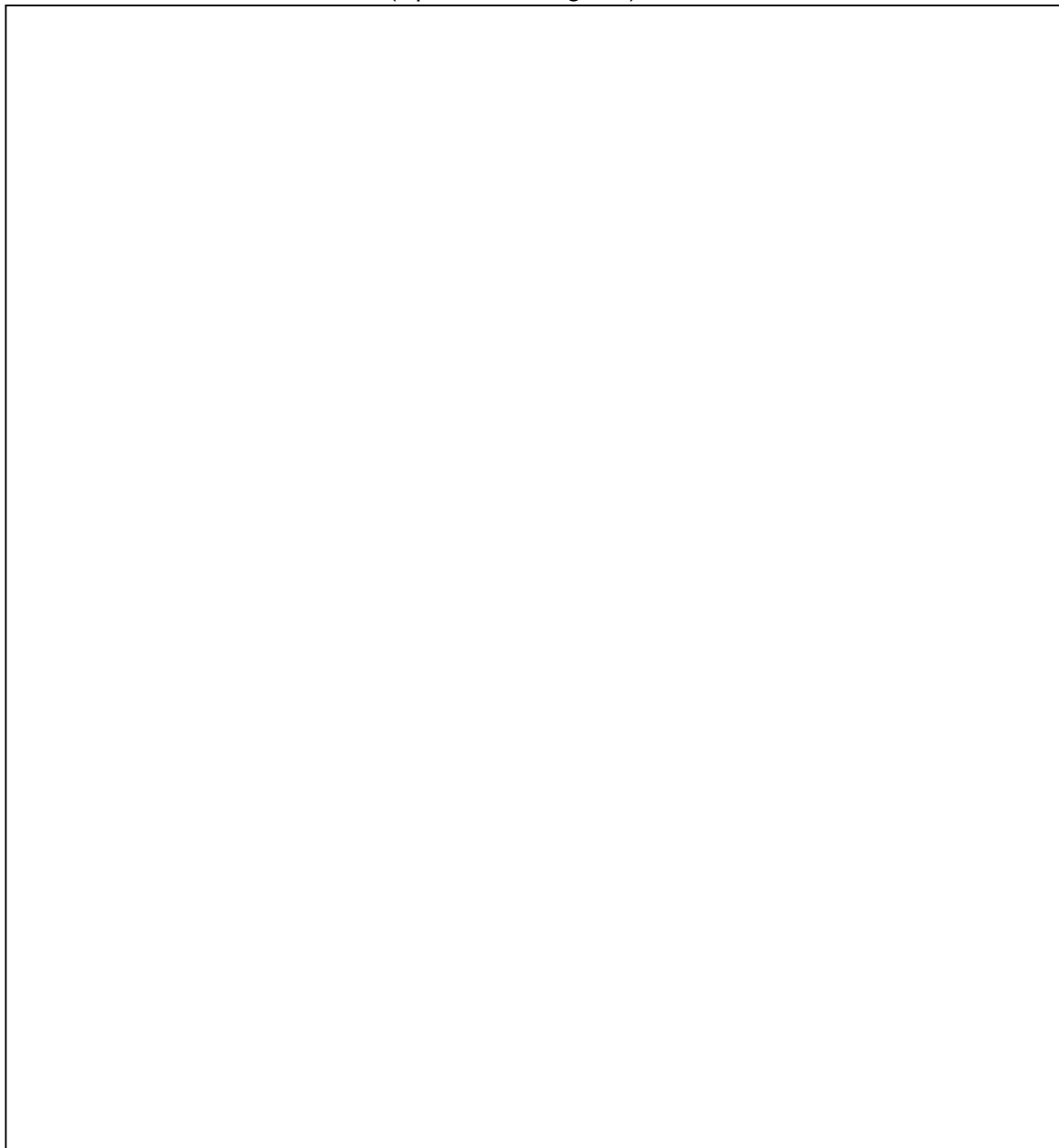
.....

8.0 Observations:

Students shall write the allotted program in the space provided below. Also attach the computer print out on separate A4 page and paste in the manual.

Sr. No. of allotted program

(Space for Program)



9.0 Questions:

Write answer to Q.....,Q.....,Q.....,Q..... (Teacher shall allot the questions.)

1. What is an event?
2. What is an event handler ?.
3. What interface is extended by AWT event listeners?
4. What class is the top of the AWT event hierarchy?
5. What event results from the clicking of a button?
6. How many methods are there in the ActionListener interface? Name those events?
7. Name any three components that do not generate an Action Event.
8. Do All components generate Mouse Event ?
9. How many listeners a component can have for an event?
10. Can A component have either 0 or 1 listeners for an event.
11. What type of events are generated by java.awt.checkbox ?
12. What does it mean for a component have a focus?
13. Which event is generated by clicking once on an item in a list ?
14. What about clicking once on an item in a Jlist ?
15. Which event is generated by double clicking on an item in a list ?
16. What is the relationship between an event-listener interface and an event adapter class?
17. How can a GUI component handle its own events?
18. What interface is extended by AWT event listeners?
19. Can a component subclass that has executed enableEvents() to enable processing of a certain kind of event be used an adapter as a listener for the same kind of event.
20. What is the highest-level event class of the event-delegation model?

10.0 Conclusion:

1. Events are supported by the _____ package. (java.event / java.awt event)
2. _____ is generated when a button is pressed, a list item is double clicked or a menu item is selected. (Focus Event / Action Event)
3. Student shall write the statement on the basis of Laboratory Practice allotted by the teacher under the guidance of teacher.
(For example, refer page no 05 of Experiment No.01)

(Space for answer)

