ECAP615

Programming in Java

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Learning Outcomes

After this lecture, you will be able to

- know the various types of Layouts
- learn the basic concept of Layout Manager and Border Layout
- understand the various constructors and methods of Border Layout
- implementation of Border Layout

Types of Layouts

- Border Layout
- Grid Layout
- Flow Layout
- Box Layout
- Card Layout

Layout Manager

- Layout Managers are used for arranging the components in order.
- It is an interface which implements the classes of the layout manager.
- The Layout managers enable us to control the way in which visual components are arranged in the GUI forms by determining the size and position of components within the containers.

Setting the Layout Manager

- As a rule, the only containers whose layout managers you need to worry about are JPanels and content panes.
- Each JPanel object is initialized to use a FlowLayout, unless you specify differently when creating the JPanel.
- Content panes use BorderLayout by default.

Setting the Layout Manager

- You can set a panel's layout manager using the JPanel constructor.

Example:

- JPanel panel = new JPanel (new BorderLayout ();

Setting the Layout Manager

- After a container has been created, you can set its layout manager using the setLayout method.

Example:

- Container contentPane = frame.getContentPane ();
- contentPane.setLayout (new FlowLayout ();

Choosing a Layout Manager

- Layout managers have different strengths and weaknesses.
- Here we are going to discuss various cases which help us in the selection of an appropriate layout manager.

Choosing a Layout Manager

CASE-1

You need to display a component in as much space as possible.

- If it is the only component in its container, use GridLayout or BorderLayout.

Choosing a Layout Manager

CASE-2

You need to display a few components in a compact row at their natural size.

CASE-3

You need to display a few components of the same size in rows and columns.

Choosing a Layout Manager

CASE-4

You need to display a few components in a row or column, possibly with varying amounts of space between them, custom alignment, or custom component sizes.

Choosing a Layout Manager

CASE-5

You need to display aligned columns, as in a form-like interface where a column of labels is used to describe text fields in an adjacent column.

CASE-6

You have a complex layout with many components.

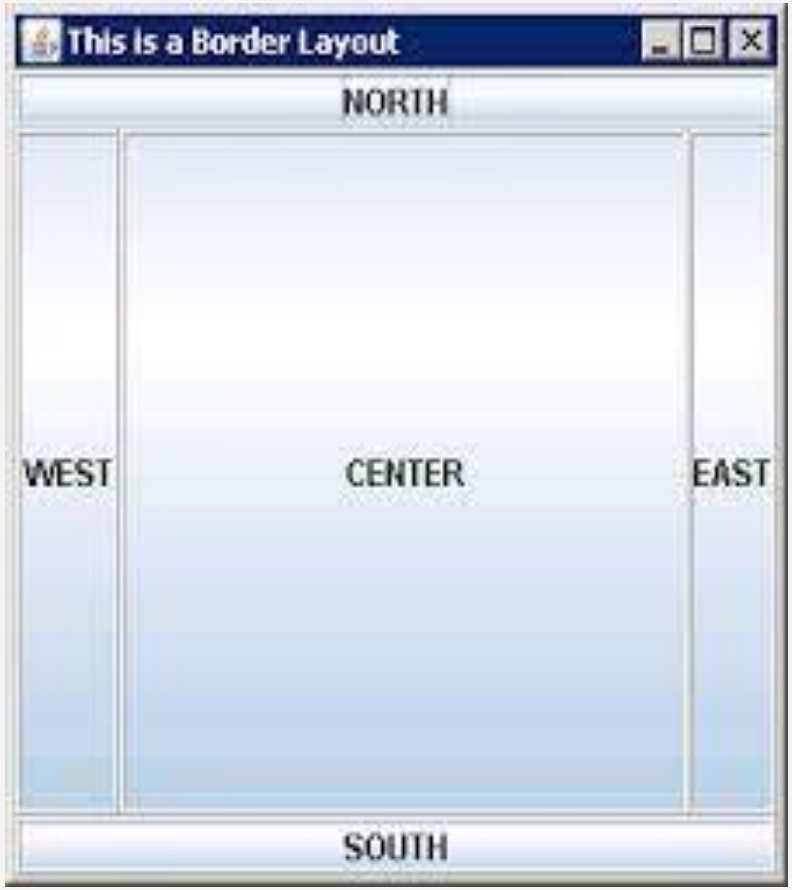
Border Layout

- The BorderLayout is the default layout for window objects such as JFrame, JWindow, JDialog, JInternalFrame etc.
- BorderLayout arranges the components into five regions.
- The four sides are referred to as north, south, east, and west.

Border Layout

- The middle part is called the center.
- Each region can contain only one component and is identified by a corresponding constant as NORTH, SOUTH, EAST, WEST, and CENTER.

Border Layout



Constructors of BorderLayout

- BorderLayout()
- BorderLayout(int, int)

Methods of BorderLayout

- toString()
- getLayoutAlignmentX(Container parent)
- getLayoutAlignmentY(Container parent)
- removeLayoutComponent(Component comp) :

Methods of BorderLayout

- getVgap()
- getHgap()
- setHgap(int hgap)
- setVgap(int vgap)


That’s all for now…