**GridBagLayout**

GridBagLayout extends the capabilities of the GridLayout.This class arranges the components in a horizontal and vertical manner.Each GridBagLayout object maintains a dynamic, rectangular grid of cells. Each component occupies one or more cells.That means  GridBagLayout allows the component to span to multiple columns or rows. In order to do so, GridBagConstraints is used for each component.

**GridBagConstraints**

GridBagConstraints specifies how to display a specific component.Every component added to a GridBagLayout container should have a GridBagConstraints object associated with it.

Without GridBagConstraints, the GridBagLayout is a blank slate.

**Some properties and their description**

**gridx,gridy**  : Specify the row and column from top to bottom and from left to right starting from zero. For example gridx = 0, gridy = 0 is the top left cell of the grid.

**gridwidth, gridheigh**t : Specify number of rows (gridheight) and columns (gridwidth) to which a component.

**fill** : This property is used to resolve whether and how to resize the component.

**ipadx, ipady**  : The ipadx, ipady property are used to set the internal padding of the component.

**weightx,weighty** : These properties are used to specify how to distribute space between rows(weighty) and columns(weightx).

The sample code given below can describe a lot on GridBagLayout…

**package** layout;

**import** java.awt.\*;

**import** javax.swing.\*;

**public** **class** GridBagLayoutDemo

{

**public** GridBagLayoutDemo()

{

makeGroupLayout();

}

**public** **static** **void** main(String[] args)

{

**new** GridBagLayoutDemo();

}

**public** **void** makeGroupLayout()

{

JFrame.*setDefaultLookAndFeelDecorated*(**true**);

JFrame frame = **new** JFrame("GridBag Layout Demo");

JButton b[] = **new** JButton[5];

**for**(**int** i = 0; i<5; i++)

{

b[i] = **new** JButton("Student "+(i+1));

}

JPanel panel = **new** JPanel(**new** GridBagLayout());

frame.add(panel);

GridBagConstraints gbc = **new** GridBagConstraints();

// add button 1 to the panel

gbc.fill = GridBagConstraints.***HORIZONTAL***;

gbc.gridx = 0; //gridx = column, gridy = row.

gbc.gridy = 0;

panel.add(b[0],gbc);

// add button 2 to the panel

gbc.fill = GridBagConstraints.***HORIZONTAL***;

gbc.gridx = 1;

gbc.gridy = 0;

panel.add(b[1]);

// add button 3 to the panel

gbc.gridx = 2;

gbc.gridy = 0;

panel.add(b[2], gbc);

// add button 4 to the panel

gbc.fill = GridBagConstraints.***HORIZONTAL***;

gbc.gridx = 0;

gbc.gridy = 1;

gbc.gridwidth = 3;

panel.add(b[3],gbc);

// add button 5 to the panel

gbc.fill = GridBagConstraints.***HORIZONTAL***;

gbc.gridx = 2;

gbc.gridy = 2; //third row //third column

gbc.gridwidth = 1;

panel.add(b[4],gbc);

frame.setDefaultCloseOperation(JFrame.***EXIT\_ON\_CLOSE***);

frame.setSize(300,200);

frame.setVisible(**true**);

}

} //end of the class