

## Class JPanel

```
java.lang.Object
  java.awt.Component
    java.awt.Container
      javax.swing.JComponent
        javax.swing.JPanel
          JPanel
```

**All Implemented Interfaces:**

```
java.awt.image.ImageObserver, java.awt.MenuContainer, java.io.Serializable,
java.lang.Runnable, javax.accessibility.Accessible
```

```
public class JPanel
extends javax.swing.JComponent
implements java.lang.Runnable
```

This class takes out most of our game's gameplay. This class will create the enemys and the player sprite. All of our

**See Also:**

[Serialized Form](#)

### Nested Class Summary

Nested Classes	
Modifier and Type	Class and Description
private class	<b>JPanel.MAdapter</b> This class with manage the mouse presses and mouse released as well as gathering the mousemove events.
private class	<b>JPanel.TAdapter</b> This TAdapter class tracks of our key presses and will funnel them into the PlaneSprite class methods.

#### Nested classes/interfaces inherited from class javax.swing.JPanel

`javax.swing.JPanel.AccessibleJPanel`

#### Nested classes/interfaces inherited from class javax.swing.JComponent

javax.swing.JComponent.AccessibleJComponent

### Nested classes/interfaces inherited from class java.awt.Container

java.awt.Container.AccessibleAWTContainer

### Nested classes/interfaces inherited from class java.awt.Component

java.awt.Component.AccessibleAWTComponent,  
java.awt.Component.BaselineResizeBehavior, java.awt.Component.BltBufferStrategy,  
java.awt.Component.FlipBufferStrategy

## Field Summary

### Fields

Modifier and Type	Field and Description
private java.util.List<Missile>	ammo
private int	ammoAmount
private int	ammoPlacement
private int	ammoReload
private Sound_effects	back
private ScrollingBackground	back1
private BigEnemy	bigEnemy
private BigEnemy	bigEnemy2
private BigEnemy	bigEnemy3
private static javax.swing.JLabel	endScore
private int	enemyCount
java.util.List<ExplosionSprite>	enemyExp
private ExplosionSprite	enemyExplosion
java.util.List<EnemySprite>	enemyPlayers
private int	explosionCount
boolean	gameOver
private static int	gameReplay
private java.lang.String	healthpercent
private int	healthX

static int	highScore
private java.util.List<java.lang.String>	highScores
javax.swing.JLabel	lifeCounter
java.util.List<LifePowerup>	LifeUpList
static PlaneSprite	plane
private ExplosionSprite	planeExplosion
private java.lang.String	playerName
private int	powerRandom
private int	powerUpRate
private java.util.Random	puDrop
private java.awt.Font	retroGame
private int	round
private int	score
private SmallEnemy	smallEnemy
private SmallEnemy	smallEnemy2
private SmallEnemy	smallEnemy3
private java.util.List<java.util.List>	wavesList

### Fields inherited from class javax.swing.JComponent

listenerList, TOOL\_TIP\_TEXT\_KEY, ui, UNDEFINED\_CONDITION, WHEN\_ANCESTOR\_OF\_FOCUSED\_COMPONENT, WHEN\_FOCUSED, WHEN\_IN\_FOCUSED\_WINDOW

### Fields inherited from class java.awt.Component

accessibleContext, BOTTOM\_ALIGNMENT, CENTER\_ALIGNMENT, LEFT\_ALIGNMENT, RIGHT\_ALIGNMENT, TOP\_ALIGNMENT

### Fields inherited from interface java.awt.image.ImageObserver

ABORT, ALLBITS, ERROR, FRAMEBITS, HEIGHT, PROPERTIES, SOMEBITS, WIDTH

## Constructor Summary

### Constructors

Constructor and Description
-----------------------------

## GameJPanel()

private String playerName; private List wavesList = new ArrayList<>(); private int round = 0; /\*\* This is the GameJPanel constructor, when created it will load the waves, and run the initGamePanel.

## Method Summary

### All Methods    Instance Methods    Concrete Methods

Modifier and Type	Method and Description
private void	<b>intiGamePanel()</b>  This is the GamePanel initalization, this will set up all the fonts and other options surroung our game such as enemies and player.
private void	<b>loadWave()</b>  This method will read in the wave.txt and load in the waves for the game.
void	<b>paintComponent</b> (java.awt.Graphics g)
void	<b>run()</b>  This is our run method for GameJPanel, this will keep track of the framerate and will repaint our images on the canvas.

### Methods inherited from class javax.swing.JPanel

getAccessibleContext, getUI, getUIClassID, paramString, setUI, updateUI

### Methods inherited from class javax.swing.JComponent

addAncestorListener, addNotify, addVetoableChangeListener, computeVisibleRect, contains, createToolTip, disable, enable, firePropertyChange, firePropertyChange, firePropertyChange, fireVetoableChange, getActionForKeyStroke, getActionMap, getAlignmentX, getAlignmentY, getAncestorListeners, getAutoscrolls, getBaseline, getBaselineResizeBehavior, getBorder, getBounds, getClientProperty, getComponentGraphics, getComponentPopupMenu, getConditionForKeyStroke, getDebugGraphicsOptions, getDefaultLocale, getFontMetrics, getGraphics, getHeight, getInheritsPopupMenu, getInputMap, getInputMap, getInputVerifier, getInsets, getInsets, getListeners, getLocation, getMaximumSize, getMinimumSize, getNextFocusableComponent, getPopupLocation, getPreferredSize, getRegisteredKeyStrokes, getRootPane, getSize, getToolTipLocation, getToolTipText, getToolTipText, getTopLevelAncestor, getTransferHandler, getVerifyInputWhenFocusTarget, getVetoableChangeListener, getVisibleRect, getWidth, getX, getY, grabFocus, hide, isDoubleBuffered, isLightweightComponent, isManagingFocus, isOpaque, isOptimizedDrawingEnabled, isPaintingForPrint, isPaintingOrigin, isPaintingTile, isRequestFocusEnabled, isValidRoot, paint, paintBorder, paintChildren, paintImmediately, paintImmediately, print, printAll, printBorder, printChildren, printComponent, processComponentKeyEvent, processKeyBinding, processKeyEvent, processMouseEvent, processMouseMotionEvent, putClientProperty, registerKeyboardAction, registerKeyboardAction,

removeAncestorListener, removeNotify, removeVetoableChangeListener, repaint, repaint, requestDefaultFocus, requestFocus, requestFocus, requestFocusInWindow, requestFocusInWindow, resetKeyboardActions, reshape, revalidate, scrollRectToVisible, setActionMap, setAlignmentX, setAlignmentY, setAutoscrolls, setBackground, setBorder, setComponentPopupMenu, setDebugGraphicsOptions, setDefaultLocale, setDoubleBuffered, setEnabled, setFocusTraversalKeys, setFont, setForeground, setInheritsPopupMenu, setInputMap, setInputVerifier, setMaximumSize, setMinimumSize, setNextFocusableComponent, setOpaque, setPreferredSize, setRequestFocusEnabled, setToolTipText, setTransferHandler, setUI, setVerifyInputWhenFocusTarget, setVisible, unregisterKeyboardAction, update

### Methods inherited from class java.awt.Container

add, add, add, add, add, addContainerListener, addImpl, addPropertyChangeListener, addPropertyChangeListener, applyComponentOrientation, areFocusTraversalKeysSet, countComponents, deliverEvent, doLayout, findComponentAt, findComponentAt, getComponent, getComponentAt, getComponentAt, getComponentCount, getComponents, getComponentZOrder, getContainerListeners, getFocusTraversalKeys, getFocusTraversalPolicy, getLayout, getMousePosition, insets, invalidate, isAncestorOf, isFocusCycleRoot, isFocusCycleRoot, isFocusTraversalPolicyProvider, isFocusTraversalPolicySet, layout, list, list, locate, minimumSize, paintComponents, preferredSize, printComponents, processContainerEvent, processEvent, remove, remove, removeAll, removeContainerListener, setComponentZOrder, setFocusCycleRoot, setFocusTraversalPolicy, setFocusTraversalPolicyProvider, setLayout, transferFocusDownCycle, validate, validateTree

### Methods inherited from class java.awt.Component

action, add, addComponentListener, addFocusListener, addHierarchyBoundsListener, addHierarchyListener, addInputMethodListener, addKeyListener, addMouseListener, addMouseMotionListener, addMouseWheelListener, bounds, checkImage, checkImage, coalesceEvents, contains, createImage, createImage, createVolatileImage, createVolatileImage, disableEvents, dispatchEvent, enable, enableEvents, enableInputMethods, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, getBackground, getBounds, getColorModel, getComponentListeners, getComponentOrientation, getCursor, getDropTarget, getFocusCycleRootAncestor, getFocusListeners, getFocusTraversalKeysEnabled, getFont, getForeground, getGraphicsConfiguration, getHierarchyBoundsListeners, getHierarchyListeners, getIgnoreRepaint, getInputContext, getInputMethodListeners, getInputMethodRequests, getKeyListeners, getLocale, getLocation, getLocationOnScreen, getMouseListeners, getMouseMotionListeners, getMousePosition, getMouseWheelListeners, getName, getParent, getPeer, getPropertyChangeListeners, getPropertyChangeListeners, getSize, getToolkit, getTreeLock, gotFocus, handleEvent, hasFocus, imageUpdate, inside, isBackgroundSet, isCursorSet, isDisplayable, isEnabled, isFocusable, isFocusOwner, isFocusTraversable, isFontSet, isForegroundSet, isLightweight, isMaximumSizeSet, isMinimumSizeSet, isPreferredSizeSet, isShowing, isValid, isVisible, keyDown, keyUp, list, list, list, location, lostFocus, mouseDown,

mouseDrag, mouseEnter, mouseExit, mouseMove, mouseUp, move, nextFocus, paintAll, postEvent, prepareImage, prepareImage, processComponentEvent, processFocusEvent, processHierarchyBoundsEvent, processHierarchyEvent, processInputMethodEvent, processMouseEvent, remove, removeComponentListener, removeFocusListener, removeHierarchyBoundsListener, removeHierarchyListener, removeInputMethodListener, removeKeyListener, removeMouseListener, removeMouseMotionListener, removeMouseWheelListener, removePropertyChangeListener, removePropertyChangeListener, repaint, repaint, repaint, resize, resize, setBounds, setBounds, setComponentOrientation, setCursor, setDropTarget, setFocusable, setFocusTraversalKeysEnabled, setIgnoreRepaint, setLocale, setLocation, setLocation, setName, setSize, setSize, show, show, size, toString, transferFocus, transferFocusBackward, transferFocusUpCycle

### Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, wait, wait, wait

### Field Detail

#### plane

```
public static PlaneSprite plane
```

#### highScore

```
public static int highScore
```

#### gameReplay

```
private static int gameReplay
```

#### endScore

```
private static javax.swing.JLabel endScore
```

#### powerUpRate

```
private final int powerUpRate
```

**See Also:**

[Constant Field Values](#)

**puDrop**

```
private final java.util.Random puDrop
```

**highScores**

```
private final java.util.List<java.lang.String> highScores
```

**wavesList**

```
private final java.util.List<java.util.List> wavesList
```

**lifeCounter**

```
public javax.swing.JLabel lifeCounter
```

**LifeUpList**

```
public java.util.List<LifePowerup> LifeUpList
```

**gameOver**

```
public boolean gameOver
```

**enemyPlayers**

```
public java.util.List<EnemySprite> enemyPlayers
```

**enemyExp**

```
public java.util.List<ExplosionSprite> enemyExp
```

**score**

```
private int score
```

**healthpercent**

```
private java.lang.String healthpercent
```

**back1**

```
private ScrollingBackground back1
```

**enemyCount**

```
private int enemyCount
```

**back**

```
private Sound_effects back
```

**explosionCount**

```
private int explosionCount
```

**healthX**

```
private int healthX
```

**ammoPlacement**

```
private int ammoPlacement
```

**retroGame**

```
private java.awt.Font retroGame
```

**ammo**

```
private java.util.List<Missile> ammo
```

**ammoAmount**

```
private int ammoAmount
```



### ammoReload

```
private int ammoReload
```

### powerRandom

```
private int powerRandom
```

### enemyExplosion

```
private ExplosionSprite enemyExplosion
```

### planeExplosion

```
private ExplosionSprite planeExplosion
```

### bigEnemy

```
private BigEnemy bigEnemy
```

### smallEnemy

```
private SmallEnemy smallEnemy
```

### bigEnemy2

```
private BigEnemy bigEnemy2
```

### smallEnemy2

```
private SmallEnemy smallEnemy2
```

### bigEnemy3

```
private BigEnemy bigEnemy3
```

### smallEnemy3

```
private SmallEnemy smallEnemy3
```

#### playerName

```
private java.lang.String playerName
```

#### round

```
private int round
```

### ***Constructor Detail***

#### GameJPanel

```
public GameJPanel()
```

private String playerName; private List wavesList = new ArrayList<>(); private int round = 0; /\*\* This is the GameJPanel constructor, when created it will load the waves, and run the initGamePanel.

### ***Method Detail***

#### intiGamePanel

```
private void intiGamePanel()
```

This is the GamePanel initialization, this will set up all the fonts and other options surrounding our game such as enemies and player. Then the method will set up some of the JPanel settings.

#### paintComponent

```
public void paintComponent(java.awt.Graphics g)
```

**Overrides:**

```
paintComponent in class javax.swing.JComponent
```

#### run

```
public void run()
```

This is our run method for GameJPanel, this will keep track of the framerate and will repaint our images on the canvas.

**Specified by:**

run in interface `java.lang.Runnable`

### **loadWave**

```
private void loadWave()
```

This method will read in the wave.txt and load in the waves for the game. Method will pull the file in and read each line one by one and will break it up into arraylists.

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