

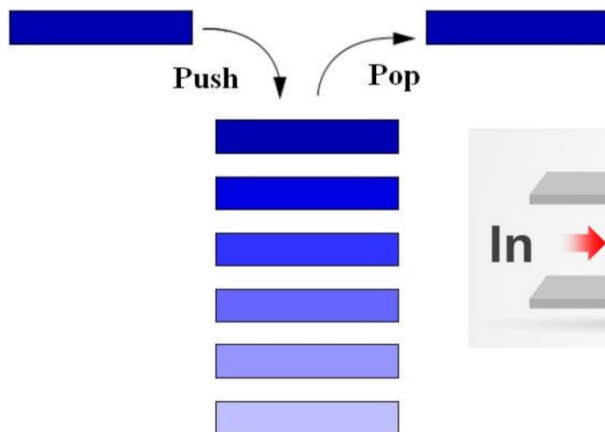
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a.s. 2020-2021

*L.I.F.O. F.I.F.O.*

Codifica Java e C#



**L.I.F.O**



**F.I.F.O**

## La classe LIFO (java)

```
public class lifoClass
{
    private char [] lista = new char [100];
    private int testina;
    public lifoClass()
    {
        for (int i=0; i<100;i++) lista[i] = '*';
        testina=0;
    }
    public void push(char car)
    {
        lista[testina]=car;
        testina ++;
    }
    public char pop()
    {
        if (testina>0)
        {
            testina--;
            char car=lista[testina];
            return car;
        }
        return '*';
    }
    public void stampaLista()
    {
        if (testina==0)
```

```

        System.out.println("Lista vuota");

    else

    {

        for (int i=0; i<testina;i++) System.out.print(lista[i]+" ");

        System.out.println();

    }

}

}

class pushPop

{

    public static void main(String s[])

    {

        char car;

        lifoClass lifoObj =new lifoClass();

        System.out.println("push: a");

        lifoObj.push('a');

        System.out.println("push: b");

        lifoObj.push('b');

        System.out.print("stampa della lista: ");

        lifoObj.stampaLista();

        car=lifoObj.pop();

        System.out.println("pop: "+car);

        System.out.print("stampa della lista: ");

        lifoObj.stampaLista();

        car=lifoObj.pop();

        System.out.println("pop: "+car);

        System.out.print("stampa della lista: ");

        lifoObj.stampaLista();
    }
}

```

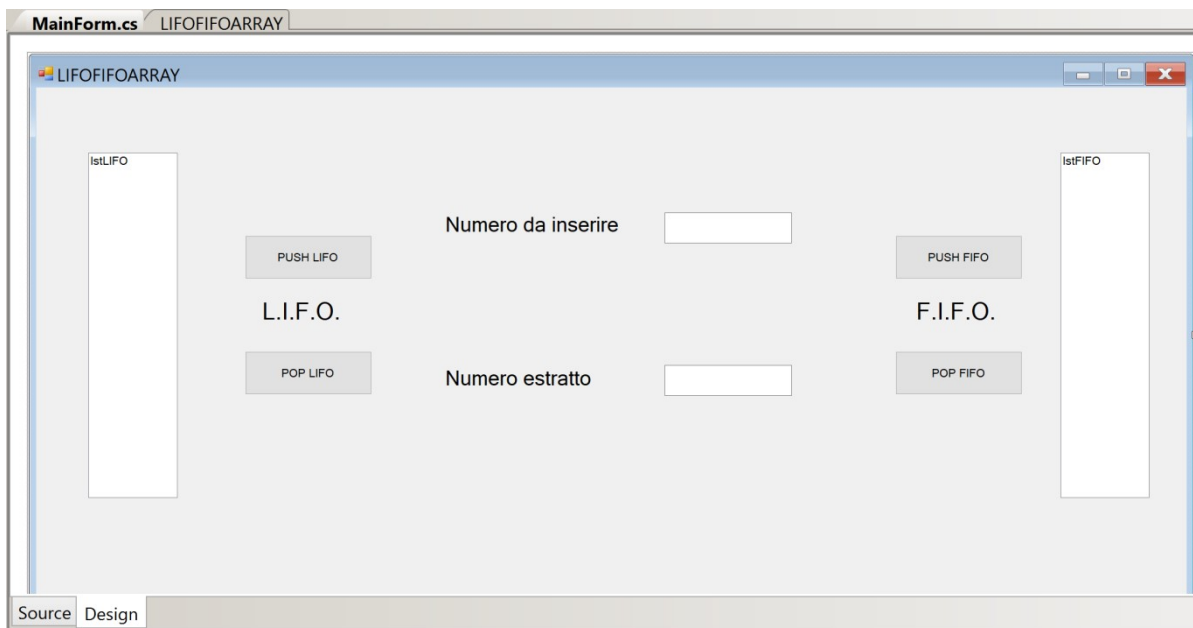
```

        car=lifoObj.pop();

        System.out.println("pop: "+car);
    }
}

```

## LIFO E FIFO in C#



### MainForm.cs

```

using System;

using System.Collections.Generic;

using System.Drawing;

using System.Windows.Forms;

namespace LIFOFIFOARRAY
{
    public partial class MainForm : Form
    {
        public MainForm()
        {
            InitializeComponent();
        }
    }
}

```

```
}
```

```
void BtnPushLIFOClick(object sender, EventArgs e)
```

```
{
```

```
    lstLIFO.Items.Add(txtPUSH.Text);
```

```
txtPUSH.Text = "";
```

```
txtPUSH.Focus();
```

```
}
```

```
void BtnPopLIFOClick(object sender, EventArgs e)
```

```
{
```

```
    int indice = lstLIFO.Items.Count - 1;
```

```
    if (indice >= 0)
```

```
    {
```

```
        string ultimo = lstLIFO.Items[indice].ToString();
```

```
txtPOP.Text = ultimo;
```

```
lstLIFO.Items.RemoveAt(indice);
```

```
    }
```

```
    else txtPOP.Text = "Lista vuota";
```

```
}
```

```
void BtnPushFIFOClick(object sender, EventArgs e)
```

```
{
```

```
    lstFIFO.Items.Add(txtPUSH.Text);
```

```
txtPUSH.Text = "";
```

```
txtPUSH.Focus();
```

```
}
```

```
void BtnPopFIFOClick(object sender, EventArgs e)
```

```
{
```

```
        int indice = lstFIFO.Items.Count - 1;

        int pri = (lstFIFO.Items.Count - 1) - indice ;

        if (indice >= 0)
        {
            string primo = lstFIFO.Items[pri].ToString();

            txtPOP.Text = primo;

            lstFIFO.Items.RemoveAt(pri);
        }

        else txtPOP.Text = "Lista vuota";
    }
}
}
```

#### **MainForm.Designer.cs**

```
/*
 * Created by SharpDevelop.
 * User: ennio
 * Date: 27/04/2021
 * Time: 14:21
 *
 * To change this template use Tools | Options | Coding | Edit Standard Headers.
 */
namespace LIFOFIFOARRAY
{
    partial class MainForm
    {
        /// <summary>
        /// Designer variable used to keep track of non-visual components.
        /// </summary>
    }
}
```

```
private System.ComponentModel.IContainer components = null;

private System.Windows.Forms.ListBox lstLIFO;

private System.Windows.Forms.Label lblFIFO;

private System.Windows.Forms.TextBox txtPUSH;

private System.Windows.Forms.Button btnPushLIFO;

private System.Windows.Forms.Label lblPUSH;

private System.Windows.Forms.Label lblPOP;

private System.Windows.Forms.Button btnPopLIFO;

private System.Windows.Forms.TextBox txtPOP;

private System.Windows.Forms.ListBox lstFIFO;

private System.Windows.Forms.Button btnPopFIFO;

private System.Windows.Forms.Button btnPushFIFO;

private System.Windows.Forms.Label label1;
```

```
/// <summary>
```

```
/// Disposes resources used by the form.
```

```
/// </summary>
```

```
/// <param name="disposing">true if managed resources should be disposed; otherwise,  
false.</param>
```

```
protected override void Dispose(bool disposing)
```

```
{
```

```
    if (disposing) {
```

```
        if (components != null) {
```

```
            components.Dispose();
```

```
        }
```

```
    }
```

```
    base.Dispose(disposing);
```

```
}
```

might

```
/// <summary>
/// This method is required for Windows Forms designer support.
/// Do not change the method contents inside the source code editor. The Forms designer
/// not be able to load this method if it was changed manually.
/// </summary>
private void InitializeComponent()
{
    this.lstLIFO = new System.Windows.Forms.ListBox();
    this.lblFIFO = new System.Windows.Forms.Label();
    this.txtPUSH = new System.Windows.Forms.TextBox();
    this.btnPushLIFO = new System.Windows.Forms.Button();
    this.lblPUSH = new System.Windows.Forms.Label();
    this.lblPOP = new System.Windows.Forms.Label();
    this.btnPopLIFO = new System.Windows.Forms.Button();
    this.txtPOP = new System.Windows.Forms.TextBox();
    this.lstFIFO = new System.Windows.Forms.ListBox();
    this.btnPopFIFO = new System.Windows.Forms.Button();
    this.btnPushFIFO = new System.Windows.Forms.Button();
    this.label1 = new System.Windows.Forms.Label();
    this.SuspendLayout();
    //
    // lstLIFO
    //
    this.lstLIFO.FormattingEnabled = true;
    this.lstLIFO.ItemHeight = 25;
    this.lstLIFO.Location = new System.Drawing.Point(95, 119);
```



```
this.lstLIFO.Name = "lstLIFO";

this.lstLIFO.Size = new System.Drawing.Size(163, 629);

this.lstLIFO.TabIndex = 0;

//

// lbFIFO

//

this.lbFIFO.Font = new System.Drawing.Font("Microsoft Sans Serif", 16.125F,
System.Drawing.FontStyle.Regular, System.Drawing.GraphicsUnit.Point, ((byte)0));

this.lbFIFO.Location = new System.Drawing.Point(403, 382);

this.lbFIFO.Name = "lbFIFO";

this.lbFIFO.Size = new System.Drawing.Size(179, 61);

this.lbFIFO.TabIndex = 1;

this.lbFIFO.Text = "L.I.F.O.";

//

// txtPUSH

//

this.txtPUSH.Font = new System.Drawing.Font("Microsoft Sans Serif", 16.125F,
System.Drawing.FontStyle.Regular, System.Drawing.GraphicsUnit.Point, ((byte)0));

this.txtPUSH.Location = new System.Drawing.Point(1146, 228);

this.txtPUSH.Name = "txtPUSH";

this.txtPUSH.Size = new System.Drawing.Size(232, 56);

this.txtPUSH.TabIndex = 2;

//

// btnPushLIFO

//

this.btnPushLIFO.Location = new System.Drawing.Point(381, 270);

this.btnPushLIFO.Name = "btnPushLIFO";

this.btnPushLIFO.Size = new System.Drawing.Size(231, 79);

this.btnPushLIFO.TabIndex = 3;
```

```
this.btnPushLIFO.Text = "PUSH LIFO";

this.btnPushLIFO.UseVisualStyleBackColor = true;

this.btnPushLIFO.Click += new System.EventHandler(this.BtnPushLIFOClick);

//

// lbIPUSH

//

this.lbIPUSH.Font = new System.Drawing.Font("Microsoft Sans Serif", 13.875F,
System.Drawing.FontStyle.Regular, System.Drawing.GraphicsUnit.Point, ((byte)0));

this.lbIPUSH.Location = new System.Drawing.Point(739, 228);

this.lbIPUSH.Name = "lbIPUSH";

this.lbIPUSH.Size = new System.Drawing.Size(382, 54);

this.lbIPUSH.TabIndex = 4;

this.lbIPUSH.Text = "Numero da inserire";

//

// lbIPOP

//

this.lbIPOP.Font = new System.Drawing.Font("Microsoft Sans Serif", 13.875F,
System.Drawing.FontStyle.Regular, System.Drawing.GraphicsUnit.Point, ((byte)0));

this.lbIPOP.Location = new System.Drawing.Point(739, 508);

this.lbIPOP.Name = "lbIPOP";

this.lbIPOP.Size = new System.Drawing.Size(335, 54);

this.lbIPOP.TabIndex = 7;

this.lbIPOP.Text = "Numero estratto";

//

// btnPopLIFO

//

this.btnPopLIFO.Location = new System.Drawing.Point(381, 481);

this.btnPopLIFO.Name = "btnPopLIFO";

this.btnPopLIFO.Size = new System.Drawing.Size(231, 79);
```

```
this.btnPopLIFO.TabIndex = 6;

this.btnPopLIFO.Text = "POP LIFO";

this.btnPopLIFO.UseVisualStyleBackColor = true;

this.btnPopLIFO.Click += new System.EventHandler(this.BtnPopLIFOClick);

//

// txtPOP

//

this.txtPOP.Font = new System.Drawing.Font("Microsoft Sans Serif", 16.125F,
System.Drawing.FontStyle.Regular, System.Drawing.GraphicsUnit.Point, ((byte)0));

this.txtPOP.Location = new System.Drawing.Point(1146, 506);

this.txtPOP.Name = "txtPOP";

this.txtPOP.Size = new System.Drawing.Size(232, 56);

this.txtPOP.TabIndex = 5;

//

// lstFIFO

//

this.lstFIFO.FormattingEnabled = true;

this.lstFIFO.ItemHeight = 25;

this.lstFIFO.Location = new System.Drawing.Point(1868, 119);

this.lstFIFO.Name = "lstFIFO";

this.lstFIFO.Size = new System.Drawing.Size(162, 629);

this.lstFIFO.TabIndex = 8;

//

// btnPopFIFO

//

this.btnPopFIFO.Location = new System.Drawing.Point(1567, 481);

this.btnPopFIFO.Name = "btnPopFIFO";

this.btnPopFIFO.Size = new System.Drawing.Size(231, 79);
```

```
this.btnPopFIFO.TabIndex = 13;

this.btnPopFIFO.Text = "POP FIFO";

this.btnPopFIFO.UseVisualStyleBackColor = true;

this.btnPopFIFO.Click += new System.EventHandler(this.BtnPopFIFOClick);

//

// btnPushFIFO

//

this.btnPushFIFO.Location = new System.Drawing.Point(1567, 270);

this.btnPushFIFO.Name = "btnPushFIFO";

this.btnPushFIFO.Size = new System.Drawing.Size(231, 79);

this.btnPushFIFO.TabIndex = 11;

this.btnPushFIFO.Text = "PUSH FIFO";

this.btnPushFIFO.UseVisualStyleBackColor = true;

this.btnPushFIFO.Click += new System.EventHandler(this.BtnPushFIFOClick);

//

// label1

//

this.label1.Font = new System.Drawing.Font("Microsoft Sans Serif", 16.125F,
System.Drawing.FontStyle.Regular, System.Drawing.GraphicsUnit.Point, ((byte)0));

this.label1.Location = new System.Drawing.Point(1596, 382);

this.label1.Name = "label1";

this.label1.Size = new System.Drawing.Size(179, 61);

this.label1.TabIndex = 9;

this.label1.Text = "F.I.F.O.";

//

// MainForm

//

this.AutoScaleDimensions = new System.Drawing.SizeF(12F, 25F);
```

```
this.AutoScaleMode = System.Windows.Forms.AutoScaleMode.Font;

this.ClientSize = new System.Drawing.Size(2098, 950);

this.Controls.Add(this.btnPopFIFO);

this.Controls.Add(this.btnPushFIFO);

this.Controls.Add(this.label1);

this.Controls.Add(this.lstFIFO);

this.Controls.Add(this.lblPOP);

this.Controls.Add(this.btnPopLIFO);

this.Controls.Add(this.txtPOP);

this.Controls.Add(this.lblPUSH);

this.Controls.Add(this.btnPushLIFO);

this.Controls.Add(this.txtPUSH);

this.Controls.Add(this.lblFIFO);

this.Controls.Add(this.lstLIFO);

this.Name = "MainForm";

this.Text = "LIFOFIFOARRAY";

this.ResumeLayout(false);

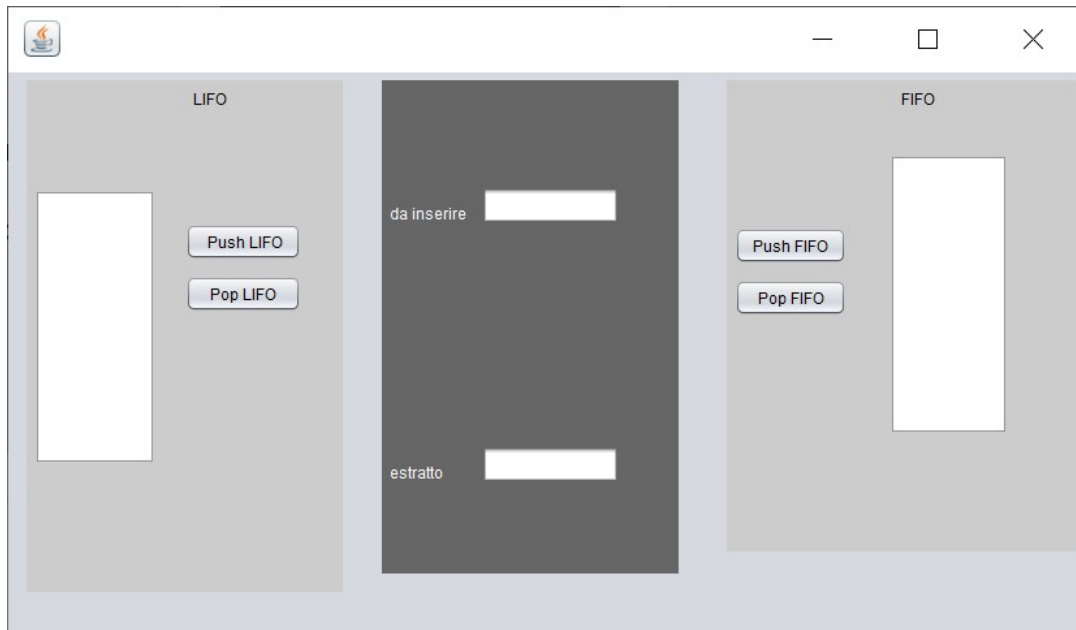
this.PerformLayout();
```

```
}
```

```
}
```

```
}
```

## LIFO E FIFO in java (NetBeans)



```
import javax.swing.DefaultListModel;
```

```
public class lifo extends javax.swing.JFrame {
```

```
    public lifo() {
```

```
        initComponents();
```

```
        model =new DefaultListModel();
```

```
        model2 =new DefaultListModel();
```

```
        listaLIFO.setModel(model);
```

```
        listaFIFO.setModel(model2);
```

```
    }
```

```
@SuppressWarnings("unchecked")
```

```
// <editor-fold defaultstate="collapsed" desc="Generated Code">
```

```
private void initComponents() {
```

```
    pnlFIFO = new javax.swing.JPanel();
```

```
    lblFIFO = new javax.swing.JLabel();
```

```
    btnPushFifo = new javax.swing.JButton();
```

```
    btnPopFifo = new javax.swing.JButton();
```

```
    jScrollPane3 = new javax.swing.JScrollPane();
```

```
    listaFIFO = new javax.swing.JList<>();
```

```
    pnlINOUT = new javax.swing.JPanel();
```

```
    txtInserisci = new javax.swing.JTextField();
```

```
    txtEstratto = new javax.swing.JTextField();
```

```
    lblInserire = new javax.swing.JLabel();
```

```
    lblEstratto = new javax.swing.JLabel();
```

```
    jPanel1 = new javax.swing.JPanel();
```

```
    btnPushLifo = new javax.swing.JButton();
```

```
    btnPopLifo = new javax.swing.JButton();
```

```
    jScrollPane1 = new javax.swing.JScrollPane();
```

```
    listaLIFO = new javax.swing.JList<>();
```

```
    lblFLIFO = new javax.swing.JLabel();
```

```
    setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
```

```
    pnlFIFO.setBackground(new java.awt.Color(204, 204, 204));
```

```
pnlFIFO.setToolTipText("");
```

```
lblFIFO.setText("FIFO");
```

```
btnPushFifo.setText("Push FIFO");
```

```
btnPushFifo.addActionListener(new java.awt.event.ActionListener() {  
    public void actionPerformed(java.awt.event.ActionEvent evt) {  
        btnPushFifoActionPerformed(evt);  
    }  
});
```

```
btnPopFifo.setText("Pop FIFO");
```

```
btnPopFifo.addActionListener(new java.awt.event.ActionListener() {  
    public void actionPerformed(java.awt.event.ActionEvent evt) {  
        btnPopFifoActionPerformed(evt);  
    }  
});
```

```
jScrollPane3.setViewportViewView(listaFIFO);
```

```
javax.swing.GroupLayout pnlFIFOLayout = new javax.swing.GroupLayout(pnlFIFO);
```

```
pnlFIFO.setLayout(pnlFIFOLayout);
```

```
pnlFIFOLayout.setHorizontalGroup(  
    pnlFIFOLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
```

```
        .addGroup(pnlFIFOLayout.createSequentialGroup()  
            .addGroup(pnlFIFOLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
```

```
                .addGroup(pnlFIFOLayout.createSequentialGroup()  
                    .addGroup(pnlFIFOLayout.createSequentialGroup()  
                        .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
```

```
                            .addGroup(pnlFIFOLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING,
```

```
                                false)
```



```

        .addComponent(btnPushFifo, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)

        .addComponent(btnPopFifo, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))

        .addGap(33, 33, 33)

        .addComponent(jScrollPane3, javax.swing.GroupLayout.PREFERRED_SIZE, 91,
javax.swing.GroupLayout.PREFERRED_SIZE)

        .addContainerGap(54, Short.MAX_VALUE))

.addGroup(pnlFIFOLayout.createSequentialGroup()

.addGap(134, 134, 134)

.addComponent(lblFIFO)

.addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))

);

pnlFIFOLayout.setVerticalGroup(

pnlFIFOLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

.addGroup(pnlFIFOLayout.createSequentialGroup()

.addContainerGap()

.addComponent(lblFIFO)

.addGroup(pnlFIFOLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

.addGroup(pnlFIFOLayout.createSequentialGroup()

.addGap(91, 91, 91)

.addComponent(btnPushFifo)

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)

.addComponent(btnPopFifo))

.addGroup(pnlFIFOLayout.createSequentialGroup()

.addGap(35, 35, 35)

.addComponent(jScrollPane3, javax.swing.GroupLayout.PREFERRED_SIZE, 215,
javax.swing.GroupLayout.PREFERRED_SIZE)))

.addContainerGap(90, Short.MAX_VALUE))

);

```

```
pnIINOUT.setBackground(new java.awt.Color(102, 102, 102));
```

```
txtInserisci.setName("txtInserisci"); // NOI18N
```

```
txtEstratto.setName("txtEstratto"); // NOI18N
```

```
lblInserire.setForeground(new java.awt.Color(255, 255, 255));
```

```
lblInserire.setText("da inserire");
```

```
lblEstratto.setForeground(new java.awt.Color(255, 255, 255));
```

```
lblEstratto.setText("estratto");
```

```
javax.swing.GroupLayout pnIINOUTLayout = new javax.swing.GroupLayout(pnIINOUT);
```

```
pnIINOUT.setLayout(pnIINOUTLayout);
```

```
pnIINOUTLayout.setHorizontalGroup(
```

```
    pnIINOUTLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
```

```
        .addGroup(pnIINOUTLayout.createSequentialGroup()
```

```
            .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
```

```
            .addGroup(pnIINOUTLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
```

```
                .addComponent(lblInserire)
```

```
                .addComponent(lblEstratto))
```

```
            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)
```

```
            .addGroup(pnIINOUTLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING,
```

```
false)
```

```
                .addComponent(txtEstratto, javax.swing.GroupLayout.DEFAULT_SIZE, 105, Short.MAX_VALUE)
```

```
                .addComponent(txtInserisci))
```

```
            .addGap(46, 46, 46))
```

```

);

pnIINOUTLayout.setVerticalGroup(
    pnIINOUTLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
    .addGroup(pnIINOUTLayout.createSequentialGroup()
        .addGap(82, 82, 82)
        .addGroup(pnIINOUTLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.TRAILING)
            .addComponent(txtInserisci, javax.swing.GroupLayout.PREFERRED_SIZE,
                javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
            .addComponent(lblInserire))
        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED, 171,
            Short.MAX_VALUE)
        .addGroup(pnIINOUTLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addComponent(txtEstratto, javax.swing.GroupLayout.Alignment.TRAILING,
                javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
                javax.swing.GroupLayout.PREFERRED_SIZE)
            .addComponent(lblEstratto, javax.swing.GroupLayout.Alignment.TRAILING))
        .addGap(70, 70, 70))
);

```

```

jPanel1.setBackground(new java.awt.Color(204, 204, 204));

```

```

btnPushLifo.setText(" Push LIFO");

```

```

btnPushLifo.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        btnPushLifoActionPerformed(evt);
    }
});

```

```

btnPopLifo.setText("Pop LIFO");

```

```

btnPopLifo.addActionListener(new java.awt.event.ActionListener() {

```

```
public void actionPerformed(java.awt.event.ActionEvent evt) {  
    btnPopLifoActionPerformed(evt);  
}  
});
```

```
jScrollPane1.setViewportView(listaLIFO);
```

```
listaLIFO.getAccessibleContext().setAccessibleParent(listaLIFO);
```

```
lblFLIFO.setText("LIFO");
```

```
javax.swing.GroupLayout jPanel1Layout = new javax.swing.GroupLayout(jPanel1);
```

```
jPanel1.setLayout(jPanel1Layout);
```

```
jPanel1Layout.setHorizontalGroup(  
    jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
```

```
        .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.TRAILING)
```

```
            .addComponent(jScrollPane1, javax.swing.GroupLayout.PREFERRED_SIZE, 93,
```

```
            javax.swing.GroupLayout.PREFERRED_SIZE)
```

```
            .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
```

```
                .addComponent(btnPushLifo, javax.swing.GroupLayout.PREFERRED_SIZE, 93,
```

```
                javax.swing.GroupLayout.PREFERRED_SIZE)
```

```
                .addComponent(btnPopLifo, javax.swing.GroupLayout.PREFERRED_SIZE, 93,
```

```
                javax.swing.GroupLayout.PREFERRED_SIZE))
```

```
        .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
```

```
            .addComponent(lblFLIFO)
```

```
            .addComponent(btnPushLifo, javax.swing.GroupLayout.PREFERRED_SIZE, 93,
```

```

        .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))
);

jPanel1Layout.setVerticalGroup(
jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
.addGroup(jPanel1Layout.createSequentialGroup())
.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
.addGroup(jPanel1Layout.createSequentialGroup())
.addContainerGap()
.addComponent(lbIFLIFO)
.addGap(88, 88, 88)
.addComponent(btnPushLifo)
.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)
.addComponent(btnPopLifo))
.addGroup(jPanel1Layout.createSequentialGroup())
.addGap(84, 84, 84)
.addComponent(jScrollPane1, javax.swing.GroupLayout.PREFERRED_SIZE, 211,
javax.swing.GroupLayout.PREFERRED_SIZE)))
.addContainerGap(98, Short.MAX_VALUE)
);

```

```

javax.swing.GroupLayout layout = new javax.swing.GroupLayout(getContentPane());
getContentPane().setLayout(layout);

layout.setHorizontalGroup(
layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
.addGroup(javax.swing.GroupLayout.Alignment.TRAILING, layout.createSequentialGroup())
.addGap(14, 14, 14)
.addComponent(jPanel1, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
.addGap(30, 30, 30)

```

```

        .addComponent(pnlINOUT, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)

        .addGap(37, 37, 37)

        .addComponent(pnlFIFO, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)

        .addContainerGap())
);

layout.setVerticalGroup(

layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

.addGroup(layout.createSequentialGroup())

.addContainerGap()

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

.addComponent(pnlFIFO, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)

.addComponent(pnlINOUT, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)

.addComponent(jPanel1, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE))

.addContainerGap(34, Short.MAX_VALUE))

);

pack();
} // </editor-fold>

```

```

private void btnPushFifoActionPerformed(java.awt.event.ActionEvent evt) {

    model2.addElement(txtInserisci.getText());

}

```

```

private void btnPopLifoActionPerformed(java.awt.event.ActionEvent evt) {

```

```

int index=model.size()-1;

String estratto= model.getElementAt(index).toString();

txtEstratto.setText(estratto);

model.removeElementAt(index);

}

private void btnPushLifoActionPerformed(java.awt.event.ActionEvent evt) {

    model.addElement(txtInserisci.getText());

}

private void btnPopFifoActionPerformed(java.awt.event.ActionEvent evt) {

    int index=model2.size()-(model2.size());

    String estratto= model2.getElementAt(index).toString();

    txtEstratto.setText(estratto);

    model2.removeElementAt(index);

}

/**
 * @param args the command line arguments
 */
public static void main(String args[]) {

    /* Set the Nimbus look and feel */

    //<editor-fold defaultstate="collapsed" desc=" Look and feel setting code (optional) ">

    /* If Nimbus (introduced in Java SE 6) is not available, stay with the default look and feel.

    * For details see http://download.oracle.com/javase/tutorial/uiswing/lookandfeel/plaf.html

    */

```

```

try {
    for (javax.swing.UIManager.LookAndFeelInfo info :
javax.swing.UIManager.getInstalledLookAndFeels()) {
        if ("Nimbus".equals(info.getName())) {
            javax.swing.UIManager.setLookAndFeel(info.getClassName());
            break;
        }
    }
} catch (ClassNotFoundException ex) {
    java.util.logging.Logger.getLogger(lifo.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
} catch (InstantiationException ex) {
    java.util.logging.Logger.getLogger(lifo.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
} catch (IllegalAccessException ex) {
    java.util.logging.Logger.getLogger(lifo.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
} catch (javax.swing.UnsupportedLookAndFeelException ex) {
    java.util.logging.Logger.getLogger(lifo.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
}

```

//</editor-fold>

/\* Create and display the form \*/

```

java.awt.EventQueue.invokeLater(new Runnable() {
    public void run() {
        new lifo().setVisible(true);
    }
});
}

```

DefaultListModel model;



```
DefaultListModel model2;

// Variables declaration - do not modify

private javax.swing.JButton btnPopFifo;

private javax.swing.JButton btnPopLifo;

private javax.swing.JButton btnPushFifo;

private javax.swing.JButton btnPushLifo;

private javax.swing.JPanel jPanel1;

private javax.swing.JScrollPane jScrollPane1;

private javax.swing.JScrollPane jScrollPane3;

private javax.swing.JLabel lblEstratto;

private javax.swing.JLabel lblFIFO;

private javax.swing.JLabel lblLIFO;

private javax.swing.JLabel lblInserire;

private javax.swing.JList<String> listaFIFO;

private javax.swing.JList<String> listaLIFO;

private javax.swing.JPanel pnlFIFO;

private javax.swing.JPanel pnlINOUT;

private javax.swing.JTextField txtEstratto;

private javax.swing.JTextField txtInserisci;

// End of variables declaration

}
```