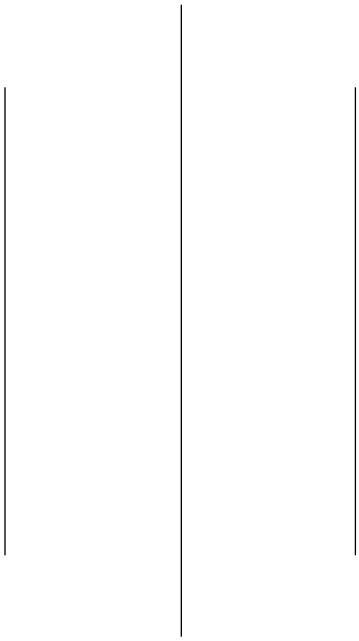
VIRINCHI COLLEGE

Lab Report Of Operating System

On

Page Replacement Algorithm using FIFO



Lab Report No: 05

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Windows Form App

A Windows Forms App is a graphical user interface (GUI) framework for building desktop applications on Microsoft Windows. It's part of the .NET Framework or .NET libraries and allows you to create visually appealing and feature-rich applications.

Procedures

1. Open the Microsoft visual studio application
2. Create new Project
3. Search “Windows Form App” and create the project using GUI

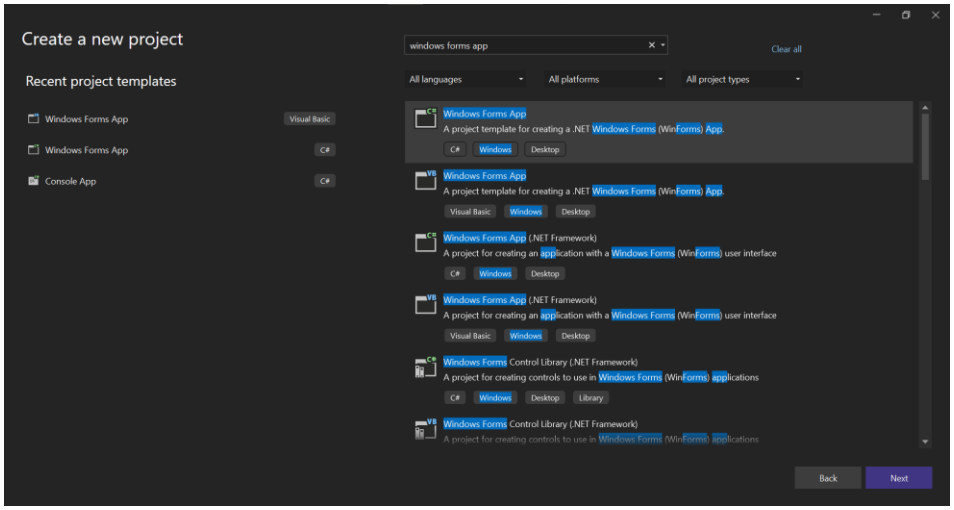

Figure 1 Procedure to create Windows Form App

Perform FIFO PRE using GUI with page frames: 2

Pages: 5 4 5 3 2 1

```
//Source code for login
namespace Using_GUI
{
    public partial class Login : Form
    {
        public Login()
        {
            InitializeComponent();
        }
```

```
        private void label1_Click(object sender, EventArgs e)
        {

        }

        private void label2_Click(object sender, EventArgs e)  {

        }

        private void textBox2_TextChanged(object sender, EventArgs e) {

        }

        private void Login_Load(object sender, EventArgs e)  {
            if (username.Equals("admin") && password.Equals("password"))
            {
                Form1 fm = new Form1();
                fm.Show();
            }
            else     {
                MessageBox.Show("Invalid username or  password");
            }
        }
        private void backgroundWorker1_DoWork(object sender,
System.ComponentModel.DoWorkEventArgs e)     {

        }

        private void btnLogin_Click(object sender, EventArgs e)  {

        }
```

```
        private void username_TextChanged(object sender, EventArgs e){

        }
    }
}
```

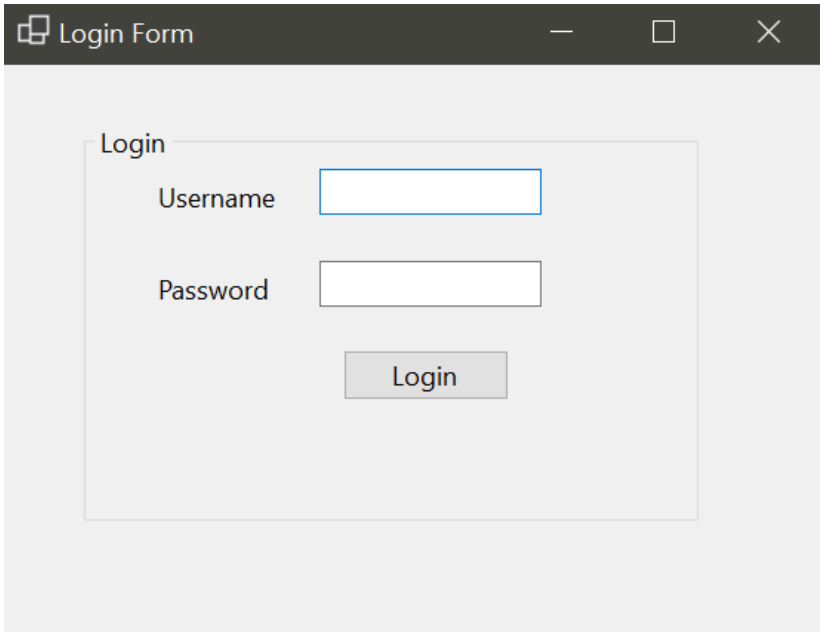

Figure 2 Login Form

```
// Source Code for PRE using FIFO
namespace Using_GUI
{
    public partial class MyForm : Form
    {

        private Queue<int> fifoQueue = new Queue<int>();
        public MyForm()
        {
            InitializeComponent();
        }
```

```
        private void MyForm_Load(object sender, EventArgs e)
        {

        }

        private void button1_Click(object sender, EventArgs e)
        {
            fifoQueue.Clear();

            // Get the page numbers from textboxes
            int pageNumber1 = int.Parse(page1.Text);
            int pageNumber2 = int.Parse(page2.Text);
            int pageNumber3 = int.Parse(page3.Text);
            int pageNumber4 = int.Parse(page4.Text);
            int pageNumber5 = int.Parse(page5.Text);
            int pageNumber6 = int.Parse(page6.Text);

            int pageFaultCount = 0;
            foreach (var page in new[] { pageNumber1, pageNumber2,
pageNumber3, pageNumber4, pageNumber5, pageNumber6 })
            {
                if (!fifoQueue.Contains(page))
                {
                    pageFaultCount++;

                    // If frames are full, remove the oldest page
                    if (fifoQueue.Count == 2)
                    {
                        fifoQueue.Dequeue();
                    }
```

```
                    // Add the new page to frames
                    fifoQueue.Enqueue(page);
                }
            }
            // Set the Reference label
            label8.Text = "Reference: " + string.Join(", ",
fifoQueue);

            // Display the page fault count
            pageFault.Text = pageFaultCount.ToString();
        }

        private void label2_Click(object sender, EventArgs e)   {

        }

        private void label4_Click(object sender, EventArgs e) {

        }

        private void panel1_Paint(object sender, PaintEventArgs e){

        }

        private void label9_Click(object sender, EventArgs e){

        }

        private void textBox9_TextChanged(object sender, EventArgs e){

        }
```

```
        private void textBox3_TextChanged(object sender, EventArgs e){

        }
        private void page1_TextChanged(object sender, EventArgs e)  {

        }

        private void pageFault_TextChanged(object sender, EventArgs e)
{
        }
    }
}
```

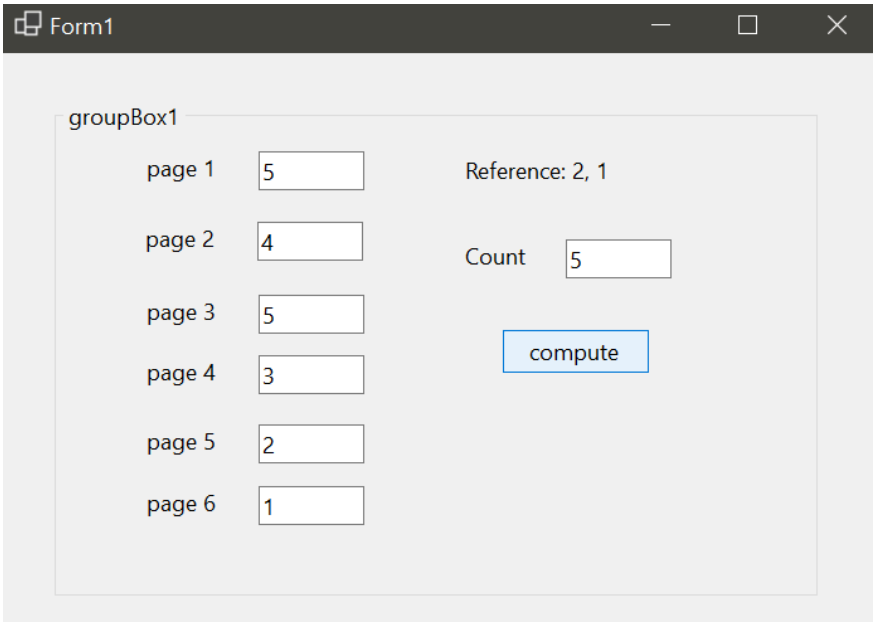

Figure 3 Page Replacement using GUI with page fault count

Conclusion

In this lab report, we successfully implemented the First-In-First-Out (FIFO) page replacement algorithm using a graphical user interface (GUI) application. The application allows users to input a sequence of page references and displays the page faults incurred under the FIFO algorithm with two page frames.