Lab 07:

Code:

using System;

using System.Collections.Generic;

using System.ComponentModel;

using System.Data;

using System.Drawing;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

using System.Windows.Forms;

namespace CCLab07

{

public partial class Form1 : Form

{

public Form1()

{

InitializeComponent();

}

private void btnParse\_Click(object sender, EventArgs e)

{

string input = txtInput.Text;

lstOutput.Items.Clear();

if (ParseS(input))

{

lblResult.Text = "Valid input according to the grammar.";

}

else

{

lblResult.Text = "Invalid input according to the grammar.";

}

}

// Grammar rules:

// S -> A B

// A -> a

// B -> b | c

// C -> d

// Method to check if input matches 'S'

private bool ParseS(string input)

{

lstOutput.Items.Add("Starting parse from S...");

return ParseA(input) && ParseB(input.Substring(1));

}

// Method to check if input matches 'A' -> a

private bool ParseA(string input)

{

lstOutput.Items.Add("Parsing A...");

if (input.Length >= 1 && input[0] == 'a')

{

lstOutput.Items.Add("A -> a");

return true;

}

lstOutput.Items.Add("A doesn't match.");

return false;

}

// Method to check if input matches 'B' -> b | c

private bool ParseB(string input)

{

lstOutput.Items.Add("Parsing B...");

if (input.Length >= 1 && (input[0] == 'b' || input[0] == 'c'))

{

lstOutput.Items.Add("B -> b or c");

return true;

}

lstOutput.Items.Add("B doesn't match.");

return false;

}

}

}

Output:



