

LAPORAN TUGAS PEKAN 8



MATA KULIAH ALGORITMA PEMROGRAMAN

DOSEN PENGAMPU:

DR. WAHYUDI S.T M.T

OLEH:

AZ ZAHRAND SOLICHUL TAJUSSALATHIN

NIM 2511532001

FAKULTAS TEKNOLOGI INFORMASI

DEPARTEMEN INFORMATIKA

UNIVERSITAS ANDALAS

2025

Soal : Program Operator Logika

Program ini melakukan operasi logika berdasarkan input pengguna. Pengguna memilih nilai boolean A dan B melalui dropdown serta memilih operator logika (AND, OR, atau NOT). Program kemudian mengubah nilai input menjadi boolean dan memproses operasi sesuai operator yang dipilih. Hasil operasi logika ditampilkan pada bagian output.

Pseudocode

Judul

Program Operator Logika{Program menerima input boolean, memilih operator logika (AND, OR, NOT), kemudian menampilkan hasil operasi logika pada GUI.}

Deklarasi

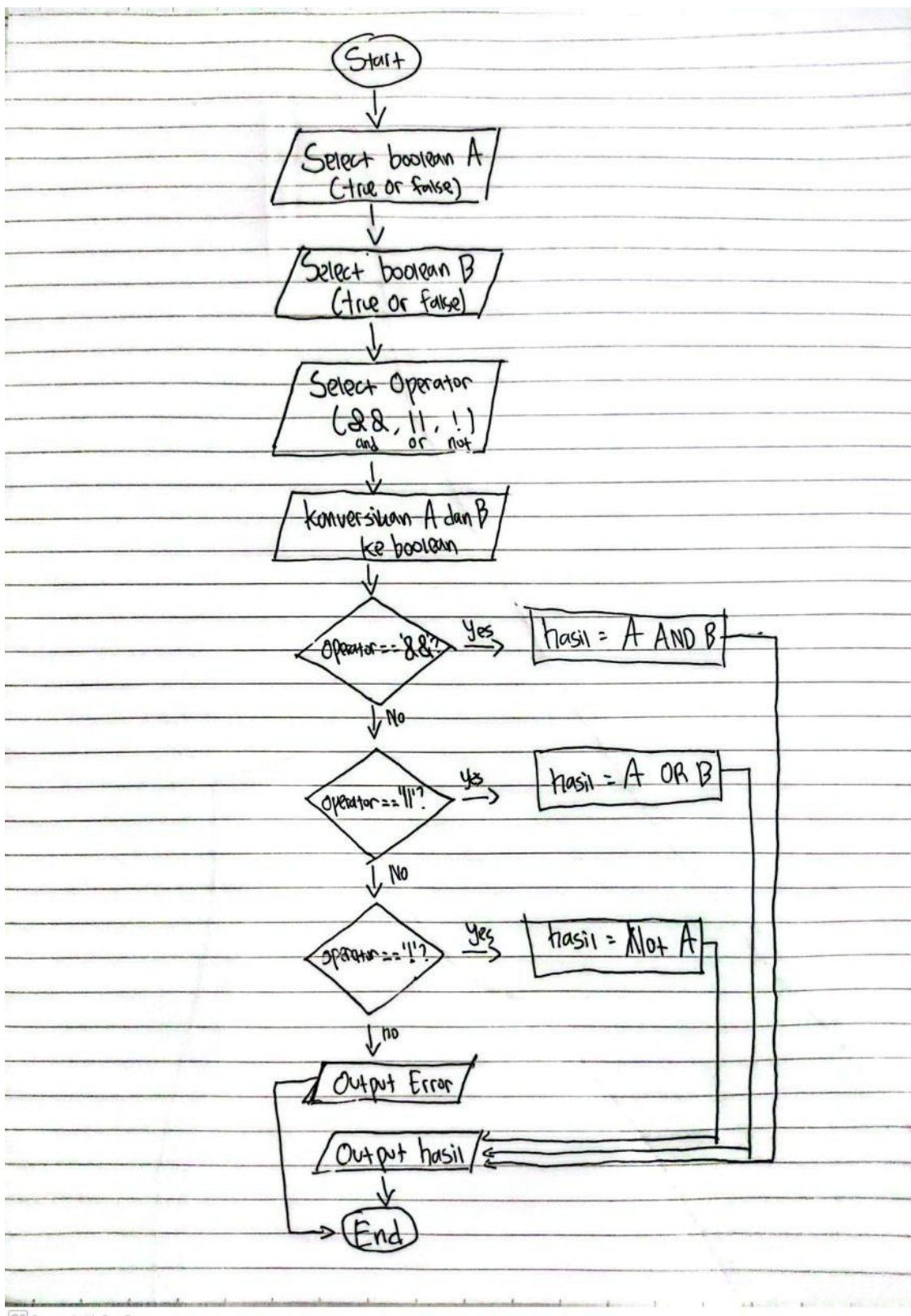
```
Var cbA      : JComboBox<String>
Var cbB      : JComboBox<String>
Var cbOp     : JComboBox<String>
Var txtHasil : JTextField
Var A, B    : String
Var op       : String
Var aBool    : boolean
Var bBool    : boolean
Var hasil    : boolean
```

Pseudocode

1. A ← nilai dari dropdown Boolean A
2. B ← nilai dari dropdown Boolean B
3. op ← nilai dari dropdown Operator
4. aBool ← konversi A menjadi boolean
5. bBool ← konversi B menjadi boolean

6. IF op = "&&" THEN
7. hasil ← aBool AND bBool
8. ELSE IF op = "||" THEN
9. hasil ← aBool OR bBool
10. ELSE IF op = "!" THEN
11. hasil ← NOT aBool
12. END IF
13. Print Output

Flowchart



Source Code

```
1 package pekan8_2511532001;
2
3 import java.awt.EventQueue;
4 import javax.swing.*;
5 import java.awt.Font;
6 import java.awt.event.ActionEvent;
7 import java.awt.event.ActionListener;
8
9 public class TugasPekan8_2511532001 extends JFrame {
10
11     private static final long serialVersionUID = 1L;
12     private JPanel contentPane;
13     private JComboBox<String> cbA;
14     private JComboBox<String> cbB;
15     private JTextField txtHasil;
16
17     private void warning(String msg) {
18         JOptionPane.showMessageDialog(this, msg, "Warning", JOptionPane.WARNING_MESSAGE);
19     }
20
21     private void error(String msg) {
22         JOptionPane.showMessageDialog(this, msg, "Error", JOptionPane.ERROR_MESSAGE);
23     }
24
25     public static void main(String[] args) {
26         EventQueue.invokeLater(() -> {
27             try {
28                 TugasPekan8_2511532001 frame = new TugasPekan8_2511532001();
29                 frame.setVisible(true);
30             } catch (Exception e) {
31                 e.printStackTrace();
32             }
33         });
34     }
35
36     public TugasPekan8_2511532001() {
37         setTitle("Operator Logika");
38         setResizable(false);
39         setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
40         setBounds(100, 100, 520, 380);
41
42         contentPane = new JPanel();
43         contentPane.setLayout(null);
44         setContentPane(contentPane);
45
46         JLabel lblTitle = new JLabel("OPERATOR LOGIKA");
47         lblTitle.setFont(new Font("Segoe UI Black", Font.PLAIN, 16));
48         lblTitle.setBounds(165, 10, 200, 30);
49         contentPane.add(lblTitle);
50
51         JLabel lblA = new JLabel("Boolean A");
52         lblA.setBounds(55, 60, 100, 25);
53         contentPane.add(lblA);
54
55         JLabel lblB = new JLabel("Boolean B");
56         lblB.setBounds(55, 100, 100, 25);
57         contentPane.add(lblB);
58
59         JLabel lblOp = new JLabel("Operator");
60         lblOp.setBounds(55, 140, 100, 25);
61         contentPane.add(lblOp);
62
63         JLabel lblHasil = new JLabel("Hasil");
64         lblHasil.setBounds(55, 180, 100, 25);
65         contentPane.add(lblHasil);
66
67         cbA = new JComboBox<>();
68         cbA.setModel(new DefaultComboBoxModel<>(new String[]{"true", "false"}));
69         cbA.setBounds(150, 60, 80, 25);
70         contentPane.add(cbA);
71
72         cbB = new JComboBox<>();
73         cbB.setModel(new DefaultComboBoxModel<>(new String[]{"true", "false"}));
74         cbB.setBounds(150, 100, 80, 25);
75         contentPane.add(cbB);
76
77         txtHasil = new JTextField();
78         txtHasil.setEditable(false);
79         txtHasil.setBounds(150, 180, 80, 25);
```

```
80         contentPane.add(txtHasil);
81
82         JComboBox<String> cbOp = new JComboBox<>();
83         cbOp.setModel(new DefaultComboBoxModel<>(new String[]{"&&", "||", "!"}));
84         cbOp.setBounds(150, 140, 80, 25);
85         contentPane.add(cbOp);
86
87         JButton btnProses = new JButton("Proses");
88         btnProses.setBounds(270, 140, 100, 25);
89         contentPane.add(btnProses);
90
91         btnProses.addActionListener(new ActionListener() {
92             public void actionPerformed(ActionEvent e) {
93
94                 String A = cbA.getSelectedItem().toString();
95                 String B = cbB.getSelectedItem().toString();
96                 String op = cbOp.getSelectedItem().toString();
97
98                 boolean a = Boolean.parseBoolean(A);
99                 boolean b = Boolean.parseBoolean(B);
100                boolean hasil = false;
101
102                switch (op) {
103                    case "&&":
104                        hasil = a && b;
105                        break;
106
107                    case "||":
108                        hasil = a || b;
109                        break;
110
111                    case "!" :
112                        hasil = !a;
113                        break;
114                }
115
116                txtHasil.setText(String.valueOf(hasil));
117            }
118        });
119    }
```

Output (3 Test Case)

Operator Logika

OPERATOR LOGIKA

Boolean A	<input type="text" value="true"/>
Boolean B	<input type="text" value="false"/>
Operator	<input type="text" value="&&"/> <input type="button" value="Proses"/>
Hasil	<input type="text" value="false"/>

Operator Logika

OPERATOR LOGIKA

Boolean A	<input type="text" value="true"/>
Boolean B	<input type="text" value="false"/>
Operator	<input type="text" value=" "/> <input type="button" value="Proses"/>
Hasil	<input type="text" value="true"/>

Operator Logika

OPERATOR LOGIKA

Boolean A	<input type="text" value="true"/>
Boolean B	<input type="text" value="false"/>
Operator	<input type="text" value="!"/> <input type="button" value="Proses"/>
Hasil	<input type="text" value="false"/>