



D3 Teknik Informatika (TI)
Jurusan Teknik Informatika
Politeknik Negeri Indramayu

Navigasi GUI

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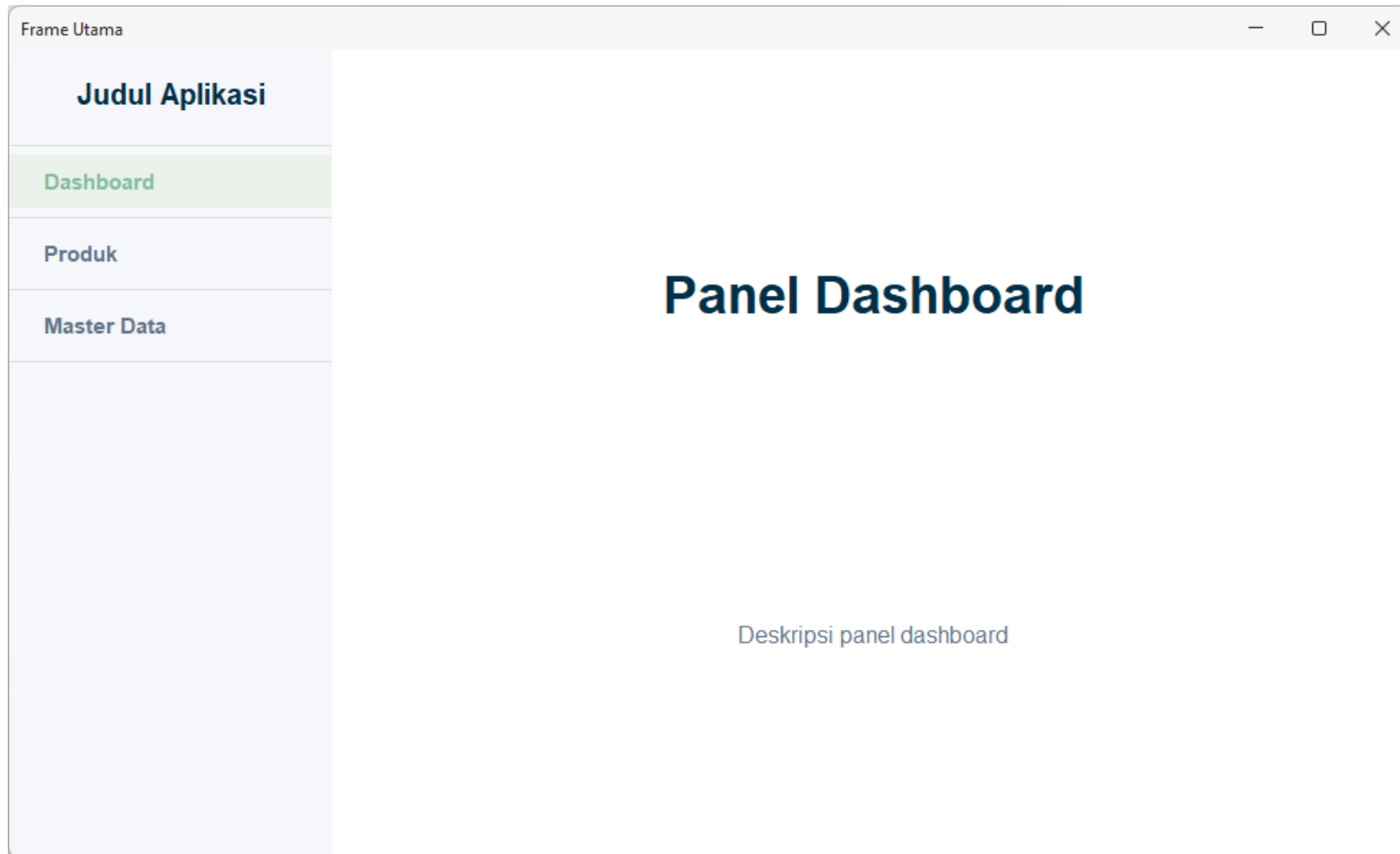
2025

Tujuan

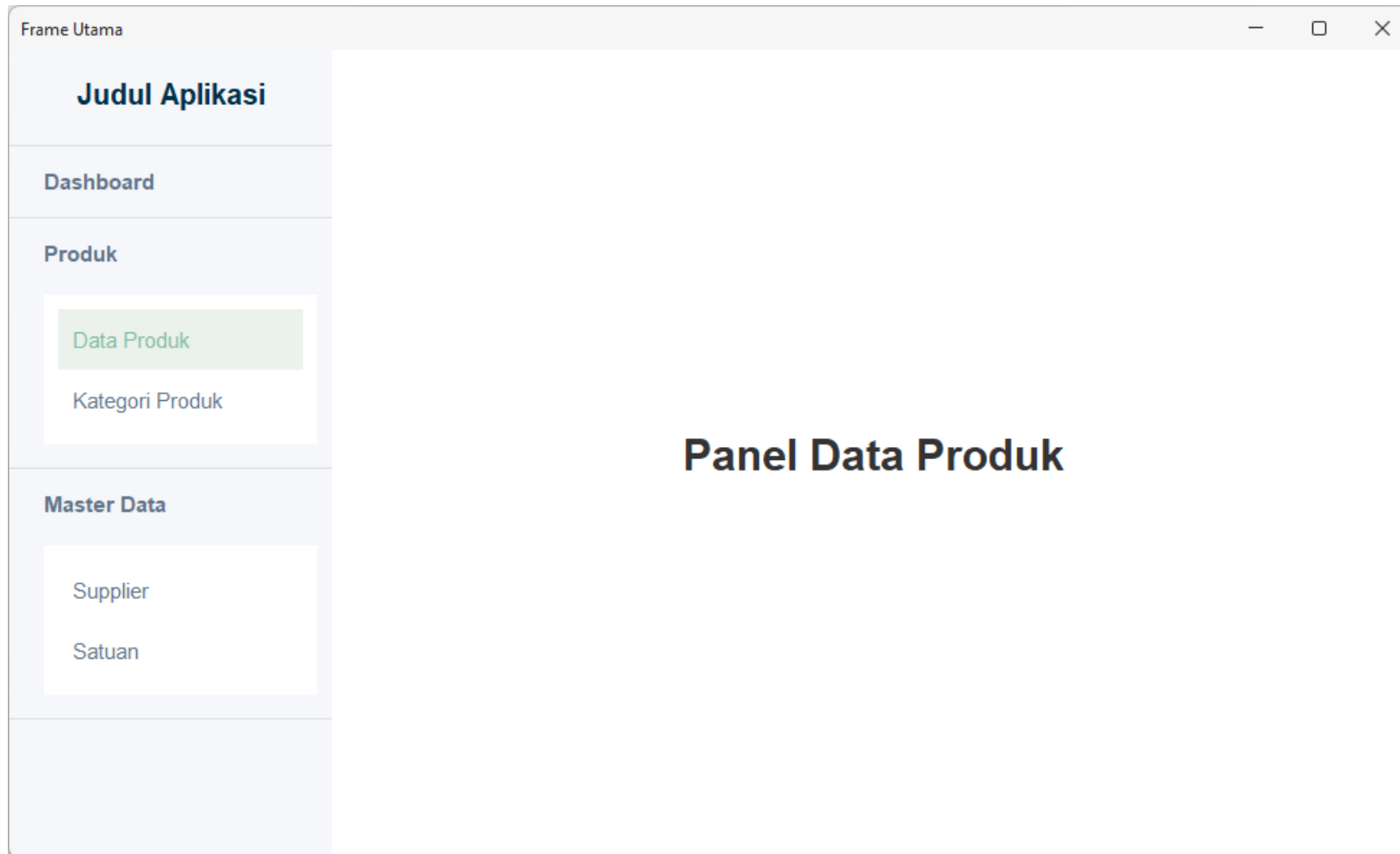
Setelah materi ini disampaikan, mahasiswa diharapkan mampu:

- **Menghubungkan** antar layar / komponen aplikasi

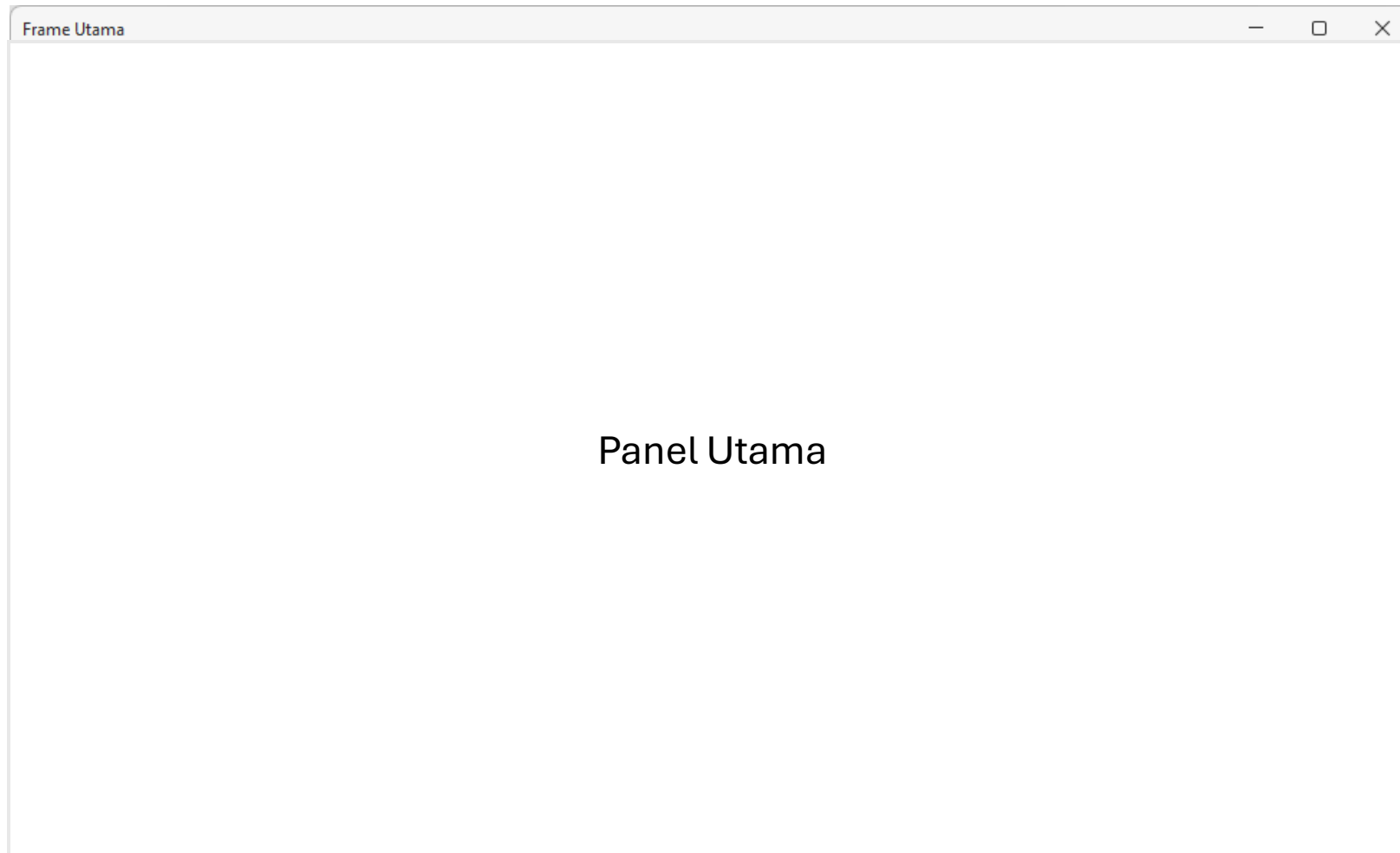
Tampilan UI



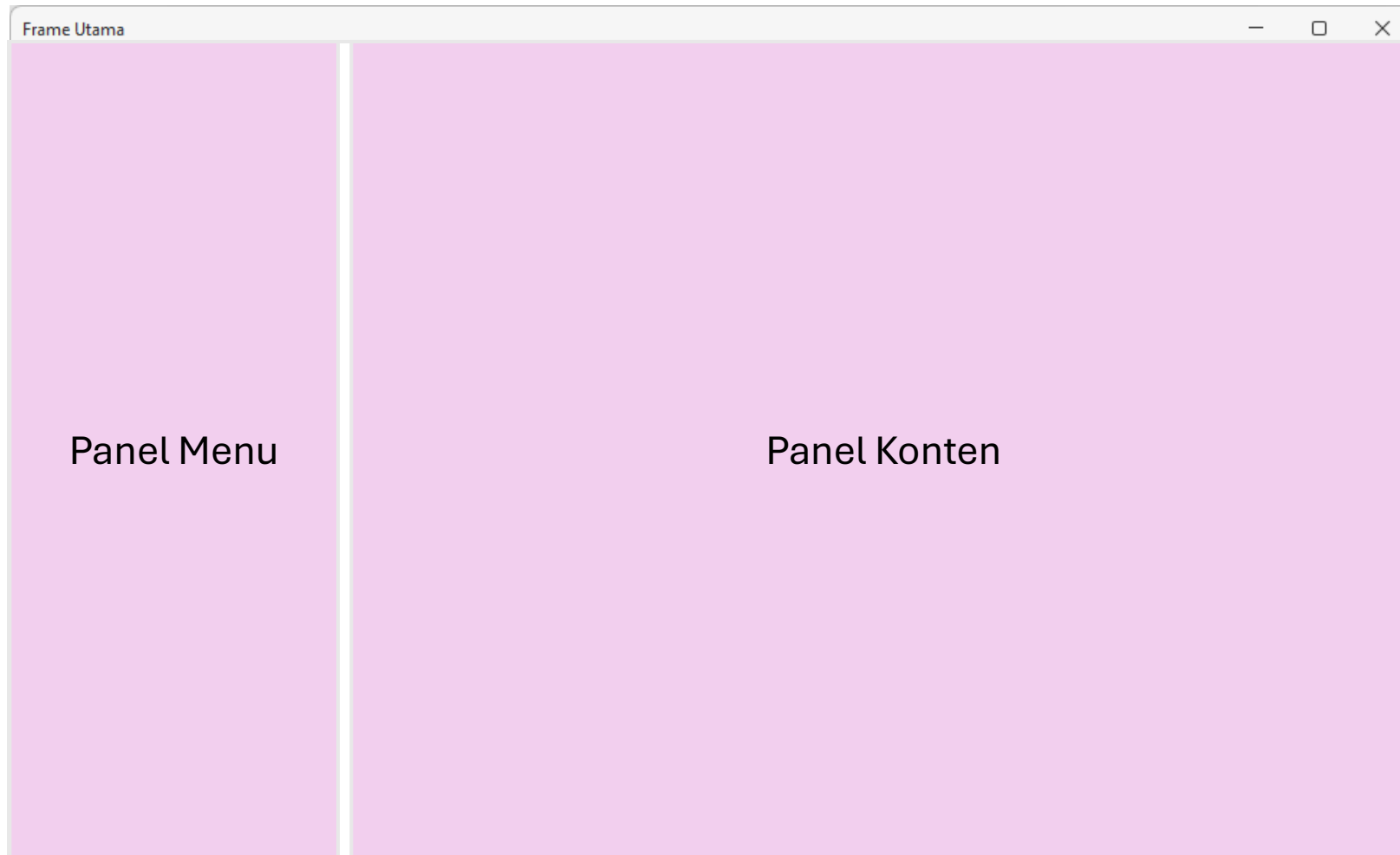
Tampilan UI



Analisis Tampilan UI



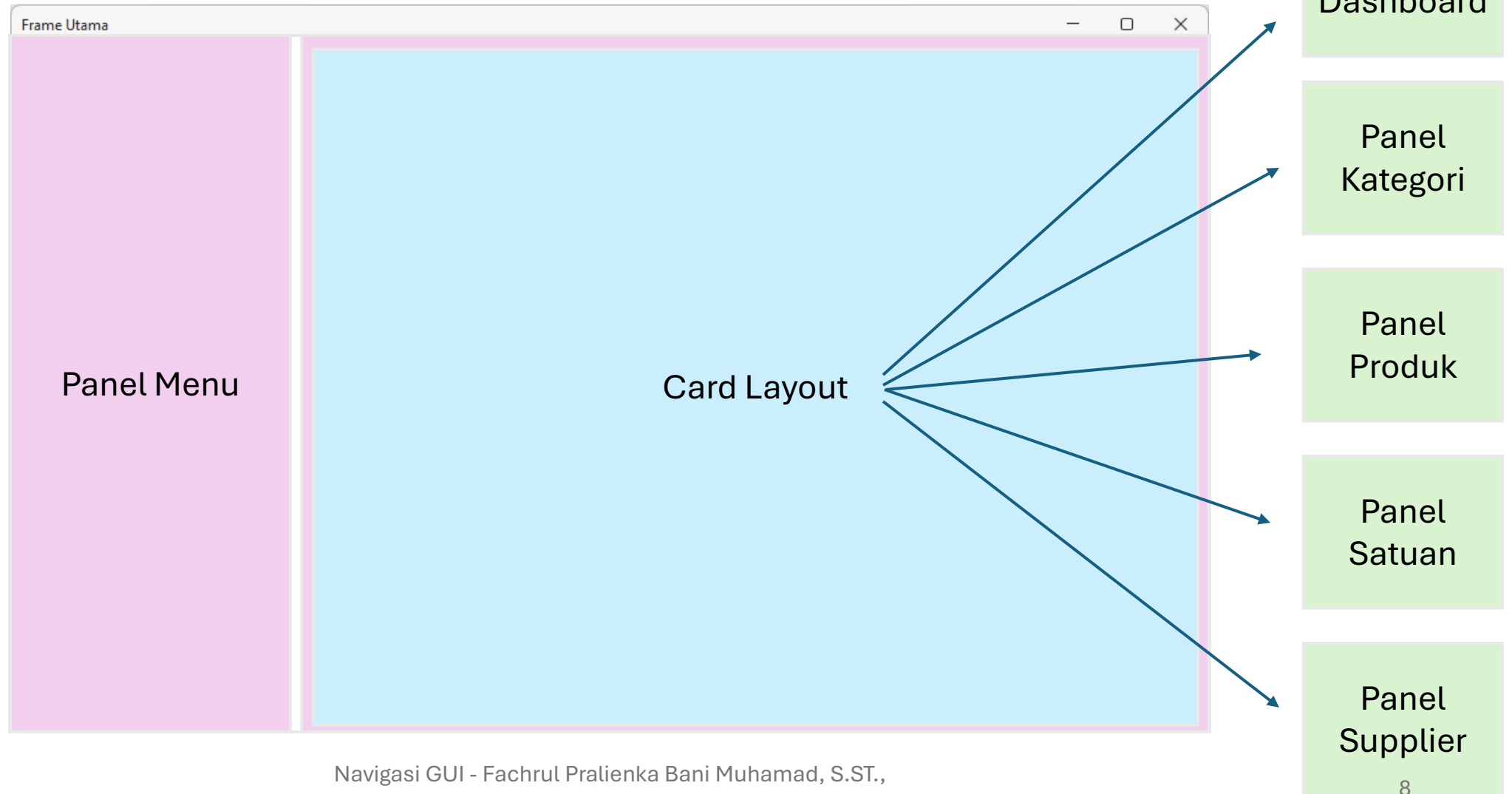
Analisis Tampilan UI



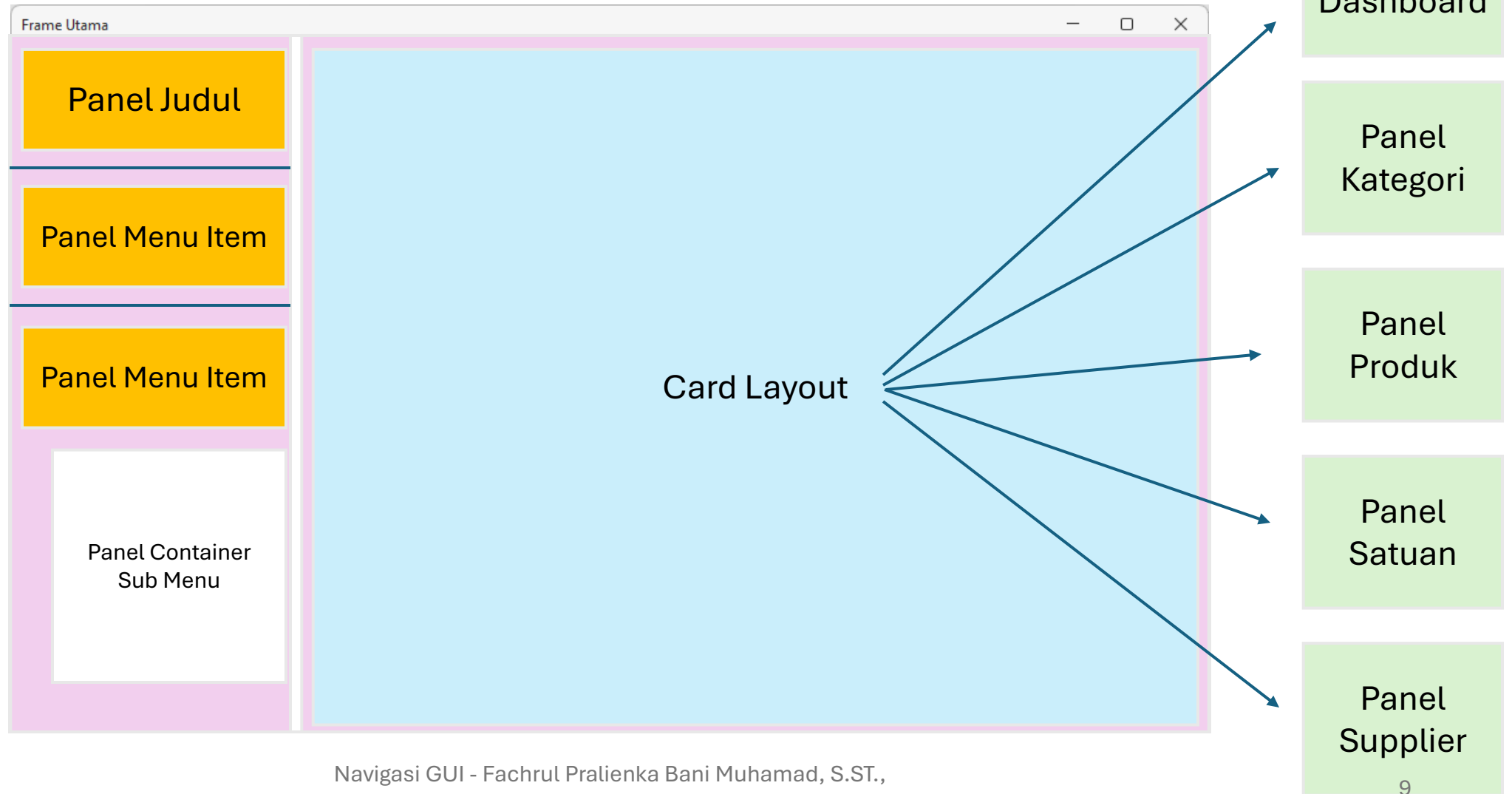
Analisis Tampilan UI



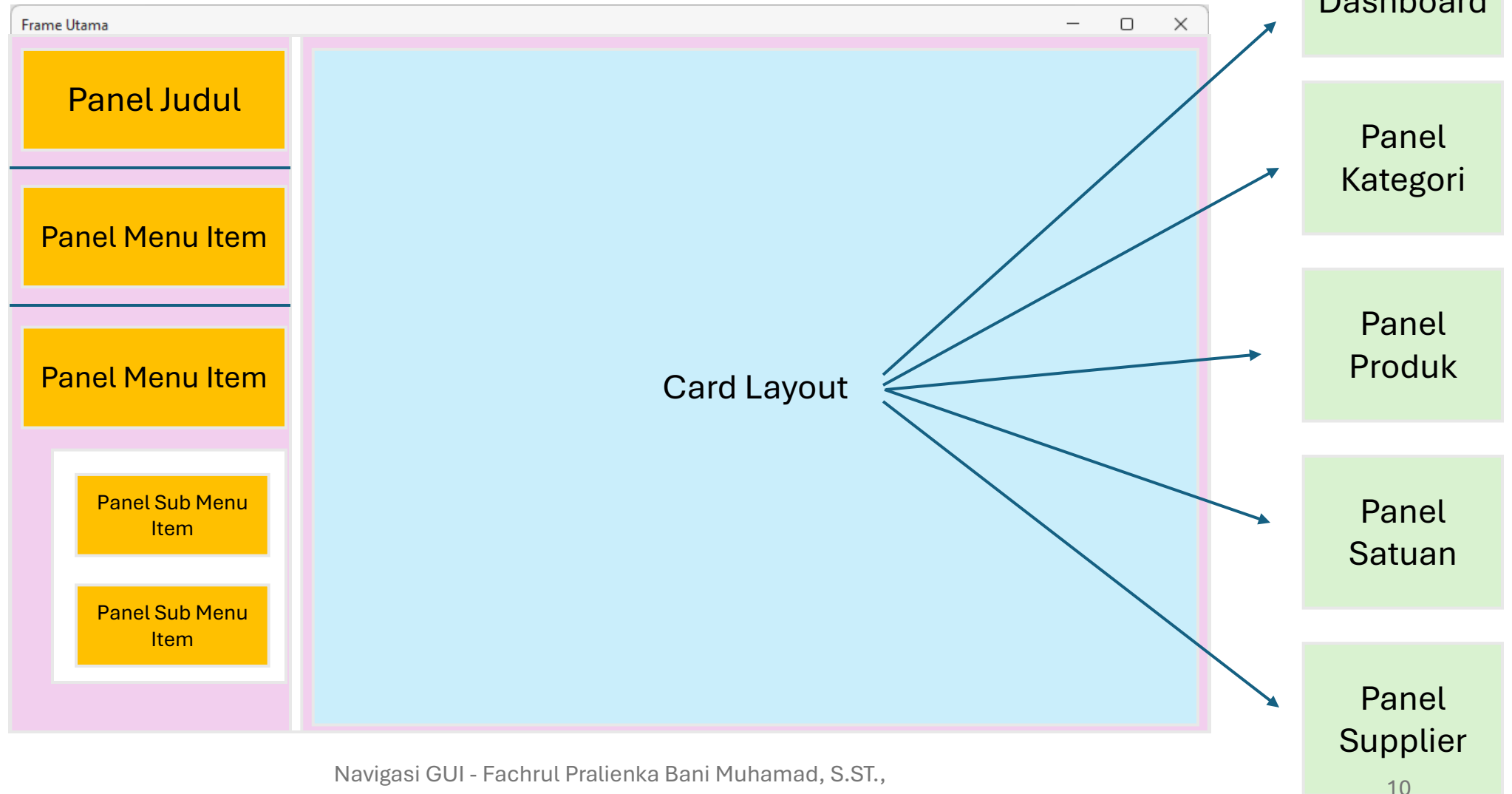
Analisis Tampilan UI



Analisis Tampilan UI



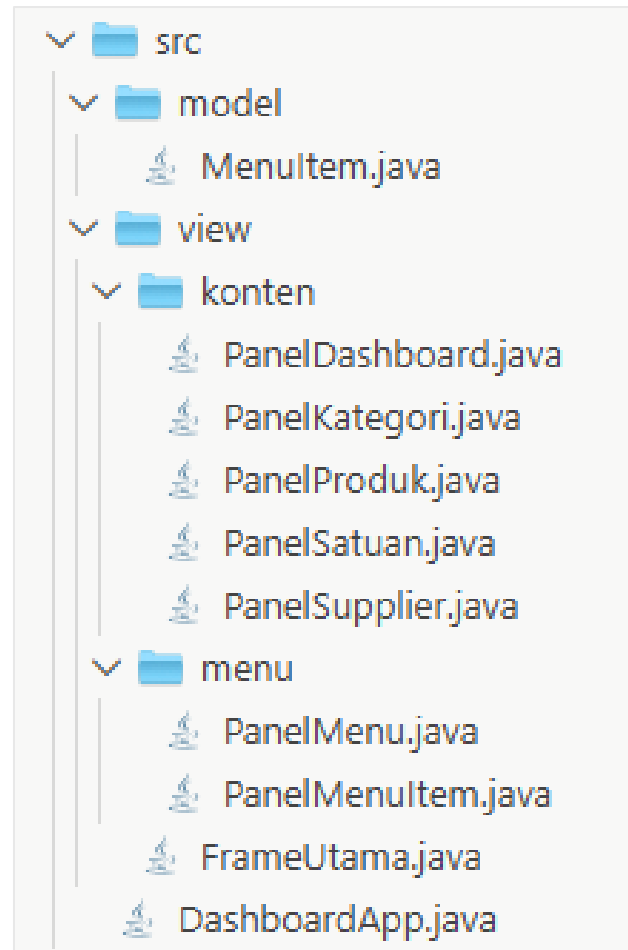
Analisis Tampilan UI



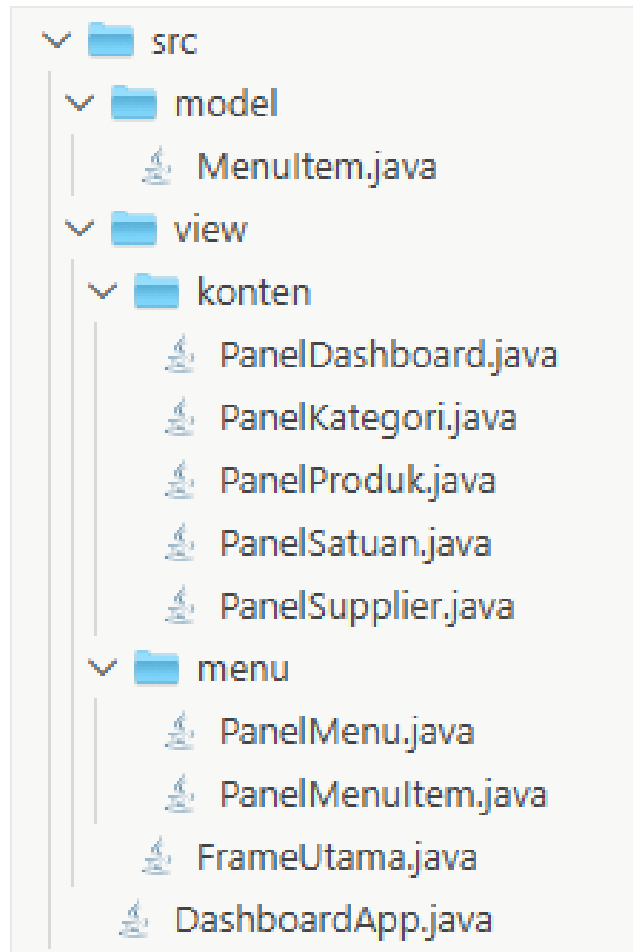
Struktur Project

Nama Project

- **dashboard-app**



Analisis Struktur Project



Urutan pembuatan file kode program (*.java):

1. MenuItem
2. PanelMenuItem
3. PanelMenu
4. DashboardPanel
5. ProdukPanel
6. KategoriPanel
7. SupplierPanel
8. SatuanPanel
9. FrameUtama
10. DashboardApp

Struktur Logika Penyusunan Kode Program

1. Package Declaration

- a. nama package

2. Import Statements

- a. import java
- b. import javax
- c. import third party library
- d. import class dari package lain

3. Class declaration

a. **class**

b. **property** static

c. **property** non-ui

d. **property** ui components

e. **method** constructor

- 1) pemanggilan method initializeUI
- 2) pemanggilan method setupEventHandler
- 3) pemanggilan method loadInitializeData

f. **method** initializeUI

g. **method** setupEventHandler

h. **method** loadInitializeData

i. **method** bisnis (fungsionalitas)

j. **method** getter / setter

k. **method** helper (tampilan)

l. **method** main

Kode Program (MenuItem.java)

```
dashboard-app - MenuItem.java

1  package model;
2
3  import java.util.ArrayList;
4  import java.util.List;
5
6  public class MenuItem {
7      private final String judul;
8      private final String keyCardLayout;
9      private final List<MenuItem> listSubMenuItem;
10
11     public MenuItem(String judul, String keyCardLayout) {
12         this.judul = judul;
13         this.keyCardLayout = keyCardLayout;
14         this.listSubMenuItem = new ArrayList<>();
15     }
16
17     public MenuItem(String judul) {
18         this(judul, null);
19     }
20
21     public String getJudul() {
22         return judul;
23     }
24 }
```

```
24
25     public String getKeyCardLayout() {
26         return keyCardLayout;
27     }
28
29     public List<MenuItem> getListSubMenuItem() {
30         return listSubMenuItem;
31     }
32
33     public boolean hasSubMenuItem() {
34         return !listSubMenuItem.isEmpty();
35     }
36
37     public void addSubMenuItem(MenuItem subMenu) {
38         listSubMenuItem.add(subMenu);
39     }
40 }
41
```

Kode Program (PanelDashboard.java)

```
dashboard-app - PanelDashboard.java

1  package view.konten;
2
3  import java.awt.Color;
4  import java.awt.Font;
5
6  import javax.swing.JLabel;
7  import javax.swing.JPanel;
8
9  import net.miginfocom.swing.MigLayout;
10
11 public class PanelDashboard extends JPanel {
12
13     public PanelDashboard() {
14         initializeUI();
15     }
16
17     private void initializeUI() {
18         setLayout(new MigLayout("fill, insets 60", "[grow]", "[grow]"));
19         setBackground(Color.WHITE);
20         setOpaque(true);
21     }
22 }
```

```
21
22     JLabel title = new JLabel("Panel Dashboard");
23     title.setFont(new Font("Inter", Font.BOLD, 36));
24     title.setForeground(new Color(0, 48, 73)); // #003049
25
26     JLabel info = new JLabel("Deskripsi panel dashboard");
27     info.setFont(new Font("Inter", Font.PLAIN, 16));
28     info.setForeground(new Color(98, 117, 138)); // #62758A
29
30     add(title, "alignx center, wrap 30");
31     add(info, "alignx center");
32 }
33
34 }
```

Kode Program

Kelas berikut mengikuti pola kode program PanelDashboard:

- PanelProduk
- PanelKategori
- PanelSupplier
- PanelSatuan

Kode Program (PanelMenuItem.java)

```
dashboard-app - PanelMenuItem.java

1  package view.menu;
2
3  import java.awt.Color;
4  import java.awt.Font;
5  import java.awt.event.MouseAdapter;
6  import java.awt.event.MouseEvent;
7
8  import javax.swing.JLabel;
9  import javax.swing.JPanel;
10
11 import model.MenuItem;
12
13 import net.miginfocom.swing.MigLayout;
14
15 public class PanelMenuItem extends JPanel {
16
17     private static final Color BG_SIDEBAR = new Color(245, 247, 250); // #F5F7FA
18     private static final Color BG_HOVER = new Color(224, 230, 235); // #E0E6EB
19     private static final Color BG_SELECTED = new Color(234, 242, 235); // #EAF2EB (sage pudar)
20
21     private static final Color TEXT_NORMAL = new Color(98, 117, 138); // #62758A
22     private static final Color TEXT_HOVER = new Color(0, 48, 73); // #003049
23     private static final Color TEXT_SELECTED = new Color(131, 188, 160); // #83BCA0 (sage)
24
25     private final String contentKey;
26     private boolean isSubMenu;
27     private boolean selected = false;
```

Kode Program (PanelMenuItem.java)

```
29     private JPanel panelContainerSubMenu;  
30     private JLabel labelMenu;  
31     private PanelMenuItem panelSubMenuItem;  
32     private PanelMenu panelMenu;  
33  
34     public PanelMenuItem(MenuItem item, PanelMenu panelMenu) {  
35         this(item, panelMenu, false);  
36     }  
37  
38     private PanelMenuItem(MenuItem item, PanelMenu panelMenu, boolean isSubMenu) {  
39         this.contentKey = item.getKeyCardLayout();  
40         this.panelMenu = panelMenu;  
41         this.isSubMenu = isSubMenu;  
42  
43         initializeUI(item);  
44         setupEventHandlers();  
45     }  
46  
47     private void initializeUI(MenuItem item) {  
48         panelContainerSubMenu = new JPanel(  
49             new MigLayout(  
50                 "fillx, insets 10, gap 0, hidemode 3",  
51                 "[grow]",  
52                 ""  
53             )  
54         );  
55  
56         panelContainerSubMenu.setBackground(Color.WHITE);  
57         panelContainerSubMenu.setOpaque(true);  
58
```

Kode Program (PanelMenuItem.java)

```
58
59     setLayout(new MigLayout("fill, insets 0, gap 0", "[grow]", "[]"));
60     setBackground(isSubMenu ? Color.WHITE : BG_SIDE BAR);
61
62     labelMenu = new JLabel();
63     labelMenu.setText(item.getJudul());
64     labelMenu.setFont(new Font("Inter", isSubMenu ? Font.PLAIN : Font.BOLD, 15));
65     labelMenu.setForeground(TEXT_NORMAL);
66
67     if (isSubMenu) {
68         add(labelMenu, "gapleft 10, grow, pushy, wrap");
69     } else {
70         add(labelMenu, "gapleft 24, grow, pushy, wrap");
71     }
72
73     for (MenuItem sub : item.getListSubMenuItem()) {
74         panelSubMenuItem = new PanelMenuItem(sub, panelMenu, true);
75         panelContainerSubMenu.add(panelSubMenuItem, "growx, h 42!, wrap");
76     }
77 }
78
79 private void setupEventHandlers() {
80     addMouseListener(new MouseAdapter() {
81         @Override
82         public void mouseEntered(MouseEvent e) {
83             if (!selected){
84                 setBackground(BG_HOVER);
85                 labelMenu.setForeground(TEXT_HOVER);
86             }
87         }
88     })
89 }
```

Kode Program (PanelMenuItem.java)

```
89         @Override
90         public void mouseExited(MouseEvent e) {
91             if (!selected){
92                 setBackground(isSubMenu ? Color.WHITE : BG_SIDEBAR);
93                 labelMenu.setForeground(TEXT_NORMAL);
94             }
95         }
96
97         @Override
98         public void mousePressed(MouseEvent e) {
99             panelMenu.selectMenuItem(PanelMenuItem.this);
100             if (panelContainerSubMenu.getComponentCount() > 0) {
101                 boolean visible = panelContainerSubMenu.isVisible();
102                 panelContainerSubMenu.setVisible(!visible);
103                 revalidate();
104                 repaint();
105             }
106         }
107     });
108 }
109
```

Kode Program (PanelMenuItem.java)

```
109
110     public void setSelectedByParent(boolean selected) {
111         this.selected = selected;
112         setBackground(selected ? BG_SELECTED : (isSubMenu ? Color.WHITE : BG_SIDEBAR));
113         labelMenu.setForeground(selected ? TEXT_SELECTED : TEXT_NORMAL);
114     }
115
116     public String getContentKey() {
117         return contentKey;
118     }
119
120     public JPanel getPanelCountainerSubMenu() {
121         return panelContainerSubMenu;
122     }
123
124 }
```

Kode Program (PanelMenu.java)

```
dashboard-app - PanelMenu.java

1  package view.menu;
2
3  import java.awt.CardLayout;
4  import java.awt.Color;
5  import java.awt.Dimension;
6  import java.awt.Font;
7  import java.util.List;
8
9  import javax.swing.JLabel;
10 import javax.swing.JPanel;
11 import javax.swing.JSeparator;
12
13 import model.MenuItem;
14
15 import net.miginfocom.swing.MigLayout;
16
17 public class PanelMenu extends JPanel {
18
19     private final CardLayout cardLayout;
20     private final JPanel panelKonten;
21     private JPanel panelSubMenu;
22     private JPanel panelJudul;
23     private JLabel labelJudul;
24     private JLabel labelMenuItem;
25     private PanelMenuItem panelMenuItem;
26     private PanelMenuItem panelDashboard = null;
27
28     public PanelMenu(List<MenuItem> listDaftarMenuItem, CardLayout cardLayout, JPanel panelKonten) {
29         this.cardLayout = cardLayout;
30         this.panelKonten = panelKonten;
```

Kode Program (PanelMenu.java)

```
32     initializeUI();
33     buildMenu(listDaftarMenuItem);
34     selectDefaultMenu();
35 }
36
37 private void initializeUI() {
38     setLayout(new MigLayout("fillx, wrap 1, insets 0, gap 0, hidemode 3", "[grow]", ""));
39     setPreferredSize(new Dimension(280, 0));
40     setBackground(new Color(245, 247, 250)); // #F5F7FA
41
42     panelJudul = new JPanel(new MigLayout("fillx, h 60!, gap 0, insets 10"));
43     labelJudul = new JLabel("Judul Aplikasi");
44     labelJudul.setFont(new Font("Inter", Font.BOLD, 20));
45     labelJudul.setForeground(new Color(0, 48, 73)); // #003049
46     panelJudul.add(labelJudul, "center, pushy");
47     panelJudul.setBackground(getBackground());
48     add(panelJudul, "grow");
49
50     add(new JSeparator(), "growx, gaptop 5, gapbottom 5");
51 }
52
53 private void buildMenu(List<MenuItem> listDaftarMenuItem) {
54     for (MenuItem menu : listDaftarMenuItem) {
55         labelMenuItem = new JLabel(menu.getJudul());
56         labelMenuItem.setFont(new Font("Arial", Font.BOLD, 14));
57
58         /** Panel Menu Item */
59         panelMenuItem = new PanelMenuItem(menu, this);
60         add(panelMenuItem, "growx, wrap, h 37!");
61     }
```


Kode Program (PanelMenu.java)

```
61
62     /** Panel (Sub) Menu Item */
63     if (menu.hasSubMenuItem()) {
64         panelSubMenu = panelMenuItem.getPanelContainerSubMenu();
65         add(panelSubMenu, "growx, wrap, gapleft 24, gapright 10, gaptop 10, gapbottom 10");
66         panelSubMenu.setVisible(false);
67     }
68
69     add(new JSeparator(), "growx, gaptop 5, gapbottom 5");
70
71     if ("Dashboard".equals(menu.getJudul())) {
72         panelDashboard = panelMenuItem;
73     }
74 }
75
76
77 private void selectDefaultMenu() {
78     if (panelDashboard != null) {
79         selectMenuItem(panelDashboard);
80     }
81 }
82
```


Kode Program (PanelMenu.java)

```
82  
83     public void selectMenuItem(PanelMenuItem clickedPanel) {  
84         if (panelMenuItem != null && panelMenuItem != clickedPanel) {  
85             panelMenuItem.setSelectedByParent(false);  
86         }  
87  
88         clickedPanel.setSelectedByParent(true);  
89         panelMenuItem = clickedPanel;  
90  
91         String key = clickedPanel.getContentKey();  
92         if (key != null) {  
93             cardLayout.show(panelKonten, key);  
94         }  
95     }  
96  
97 }
```

Kode Program (FrameUtama.java)



dashboard-app - FrameUtama.java

```
1  package view;
2
3  import java.awt.CardLayout;
4  import java.awt.Color;
5  import java.awt.Dimension;
6  import java.util.ArrayList;
7  import java.util.List;
8
9  import javax.swing.JFrame;
10 import javax.swing.JPanel;
11
12 import net.miginfocom.swing.MigLayout;
13
14 import model.MenuItem;
15 import view.konten.PanelDashboard;
16 import view.konten.PanelKategori;
17 import view.konten.PanelProduk;
18 import view.konten.PanelSatuan;
19 import view.konten.PanelSupplier;
20 import view.menu.PanelMenu;
21
```

Kode Program (FrameUtama.java)

```
21
22 public class FrameUtama extends JFrame {
23
24     MenuItem menuDashboard;
25     MenuItem menuProduk;
26     MenuItem menuMasterData;
27     List<MenuItem> listDaftarMenuItem;
28
29     CardLayout cardLayout;
30     JPanel panelKonten;
31     PanelMenu panelMenu;
32
33     public FrameUtama() {
34         initializeUI();
35         setupPanelKonten();
36         setupPanelMenu();
37         addPanel();
38     }
39
```

Kode Program (FrameUtama.java)

```
40     private void initializeUI() {
41         setTitle("Frame Utama");
42         setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
43         setPreferredSize(new Dimension(1280, 720));
44         setMinimumSize(new Dimension(992, 600));
45         setLocationRelativeTo(null);
46         setLayout(new MigLayout(
47             "fill, insets 0, gap 0",
48             "[224!][grow]",
49             "[grow]"
50         ));
51     }
52
53     private void setupPanelMenu() {
54         listDaftarMenuItem = new ArrayList<>();
55
56         menuDashboard = new MenuItem("Dashboard", "dashboard");
57         menuProduk = new MenuItem("Produk");
58         menuMasterData = new MenuItem("Master Data");
59     }
```

Kode Program (FrameUtama.java)

```
60     menuProduk.addSubMenuItem(new MenuItem("Data Produk", "produk"));
61     menuProduk.addSubMenuItem(new MenuItem("Kategori Produk", "kategori"));
62     menuMasterData.addSubMenuItem(new MenuItem("Supplier", "supplier"));
63     menuMasterData.addSubMenuItem(new MenuItem("Satuan", "satuan"));
64
65     listDaftarMenuItem.add(menuDashboard);
66     listDaftarMenuItem.add(menuProduk);
67     listDaftarMenuItem.add(menuMasterData);
68
69     panelMenu = new PanelMenu(listDaftarMenuItem, cardLayout, panelKonten);
70     panelMenu.setBackground(new Color(245, 247, 250)); // #F5F7FA
71 }
72
73 private void setupPanelKonten() {
74     cardLayout = new CardLayout();
75     panelKonten = new JPanel(cardLayout);
76 }
```

Kode Program (FrameUtama.java)

```
76
77     panelKonten.add(new PanelDashboard(), "dashboard");
78     panelKonten.add(new PanelProduk(), "produk");
79     panelKonten.add(new PanelKategori(), "kategori");
80     panelKonten.add(new PanelSupplier(), "supplier");
81     panelKonten.add(new PanelSatuan(), "satuan");
82 }
83
84 private void addPanel() {
85     add(panelMenu, "growy");
86     add(panelKonten, "grow");
87 }
88 }
89
```

Kode Program (DashboardApp.java)

```
dashboard-app - DashboardApp.java

1  import javax.swing.SwingUtilities;
2  import javax.swing.UIManager;
3
4  import com.formdev.flatlaf.themes.FlatMacLightLaf;
5
6  import view.FrameUtama;
7
8  public class DashboardApp {
9      public static void main(String[] args) {
10
11          try{
12              UIManager.setLookAndFeel(new FlatMacLightLaf());
13          } catch(Exception e){
14              System.err.println(e.getMessage());
15          }
16
17          SwingUtilities.invokeLater(() -> {
18              new FrameUtama().setVisible(true);
19          });
20
21      }
22  }
```



Selesai

Terima kasih 🙏