11. The last step, do a compile and run on your project, the program will appear as shown below and please fill in your data then click **tampilkan button**

Question

a) What is the function of the following code?

```
java.awt.EventQueue.invokeLater(new Runnable() {
    public void run() {
        new Swing().setVisible(true);
    }
});
```
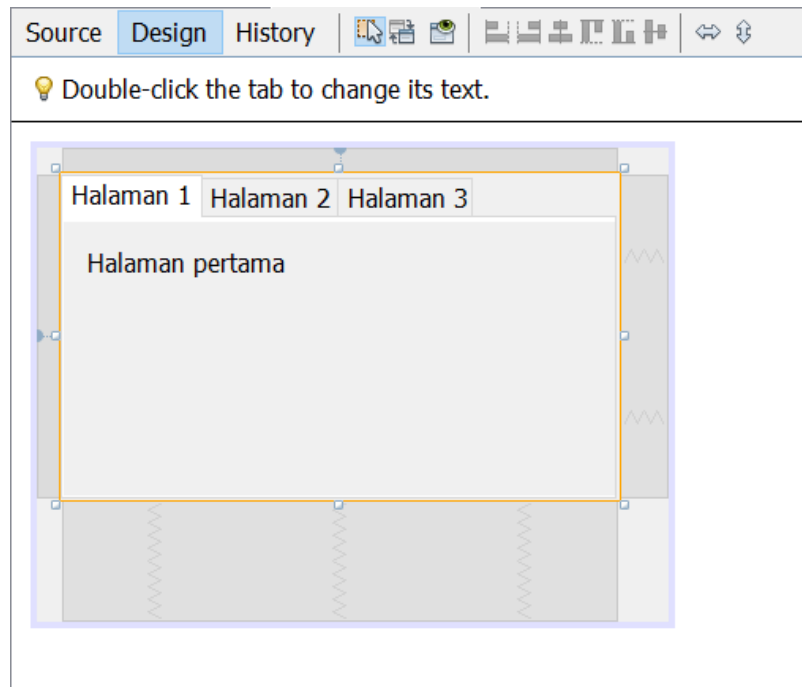
b) Why do you use multiple if checkboxes and checkbox logic?

c) Why, in the logic section of the checkbox and radio button are multiple if used?

d) Modify the program to add input in the form of address and provide a check function to the value of the Address if it is not already filled out by displaying a warning message

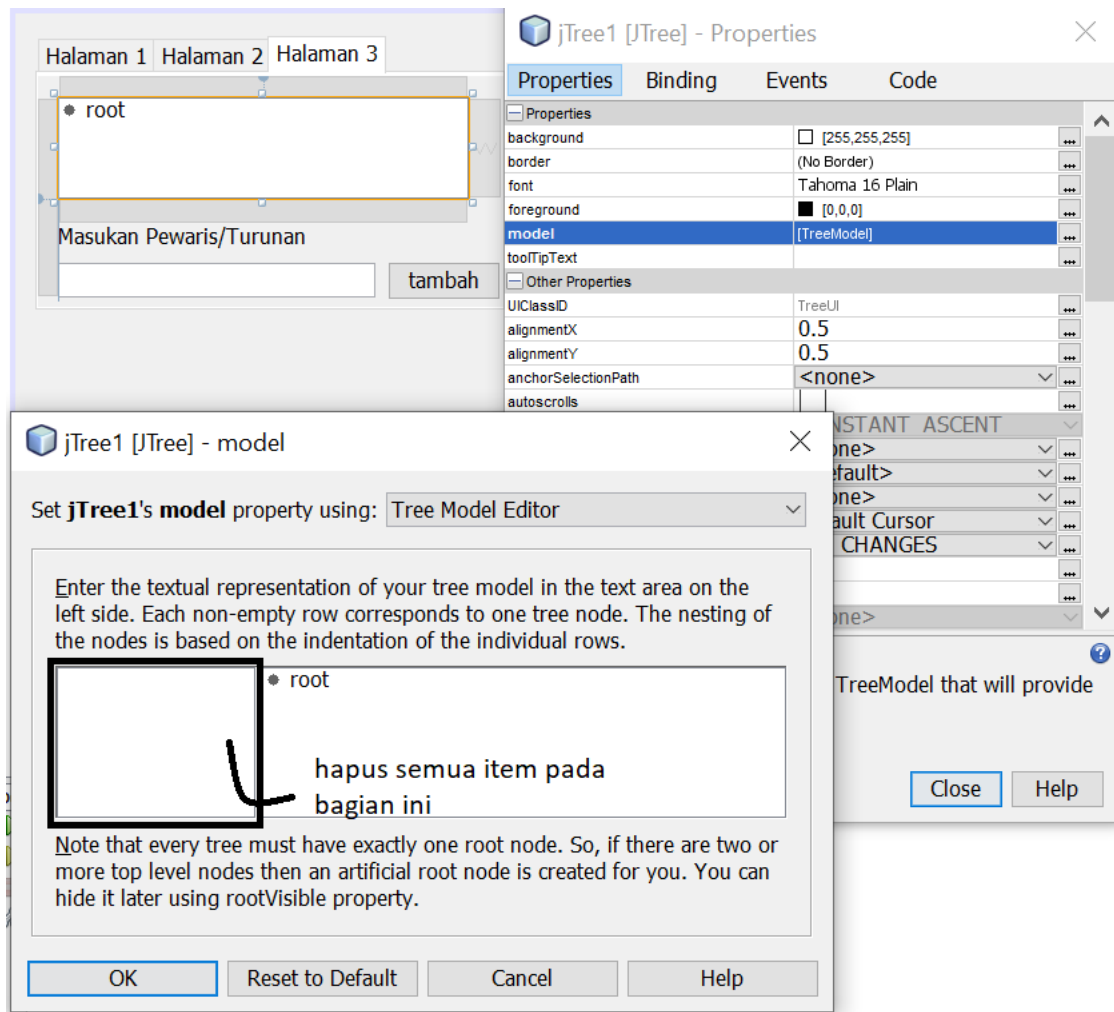## Exercise 5: JTabPane, JTtree, JTable

Perform the same steps as making **new project | java application** and give a name **PercobaanGUI2,** make a new form **JFrame Form** and give a name **Swing2**

1. After the JFrame Form is finished creating, Drag & Drop the JTabPane swing component from the Palette to the same part of the form as making
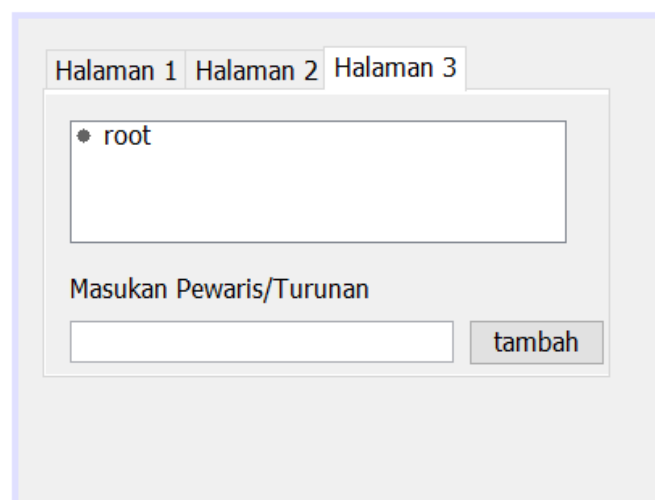
2. After the JFrame Form is finished creating, Drag & Drop the **JTabPane** swing component from the Palette to the **form section**

3. Next, Drag & Drop **Panel** into **JTabPane** that has been created, then a new tab will be formed inside JTabPane. Do it the same way, drag & drop the panel until JTabPane has 3 Tabs as shown below
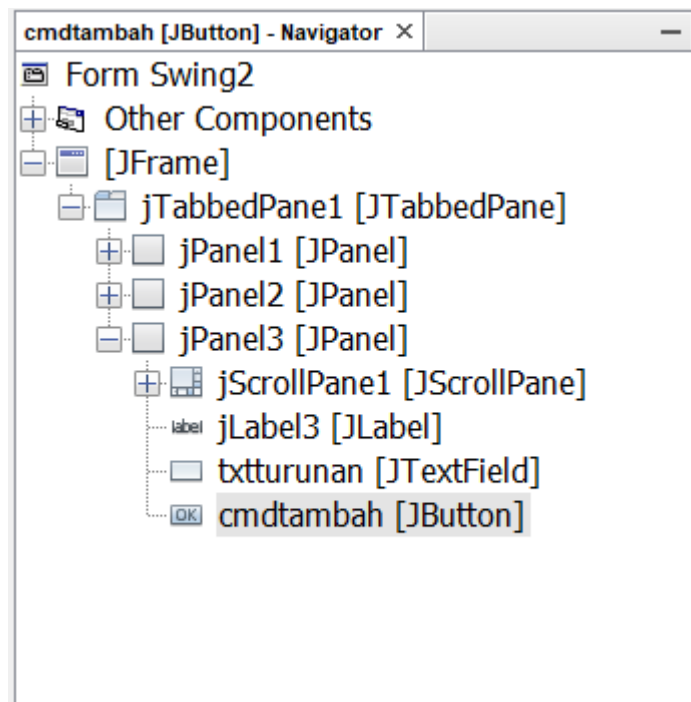

4. Then you can edit the Text on the Tab by **right clicking** on the tab and selecting **Edit Text**. Change the tab names to Page1, Page 2 and Page 3

5. On the **Halaman 1 tab** add the **JLabel** component and edit the text to be **Halaman pertama** to mark the Page 1 tab.

6. Do the same thing on **halaman2** by adding **JTabel component** by drag & drop Jtable to **tab Halaman 2**

7. On **halaman 3 tab** adding the **JTree component** by drag & drop

8. Then right click on **JTree** and select next **property** in the Model section click the dots on the right side of the model, then a new window will appear and delete all items in the left column as in the following image

9. The next step, on the page tab 3 add 1 **JTextField and 1 JButton** so the display will look like this
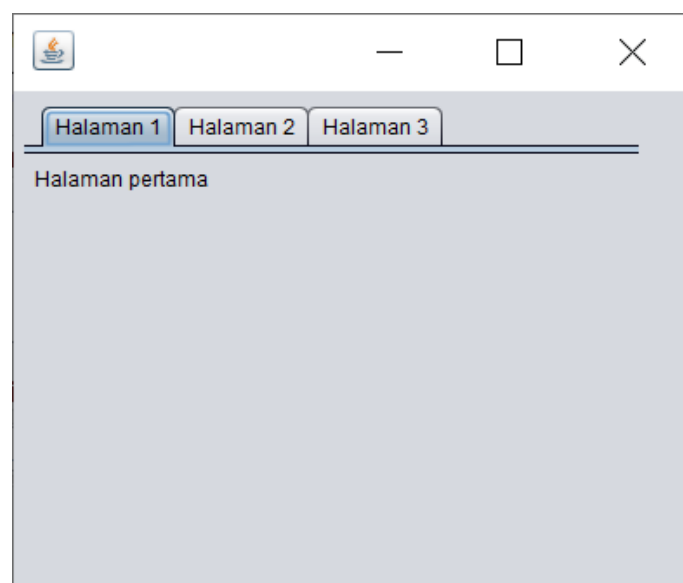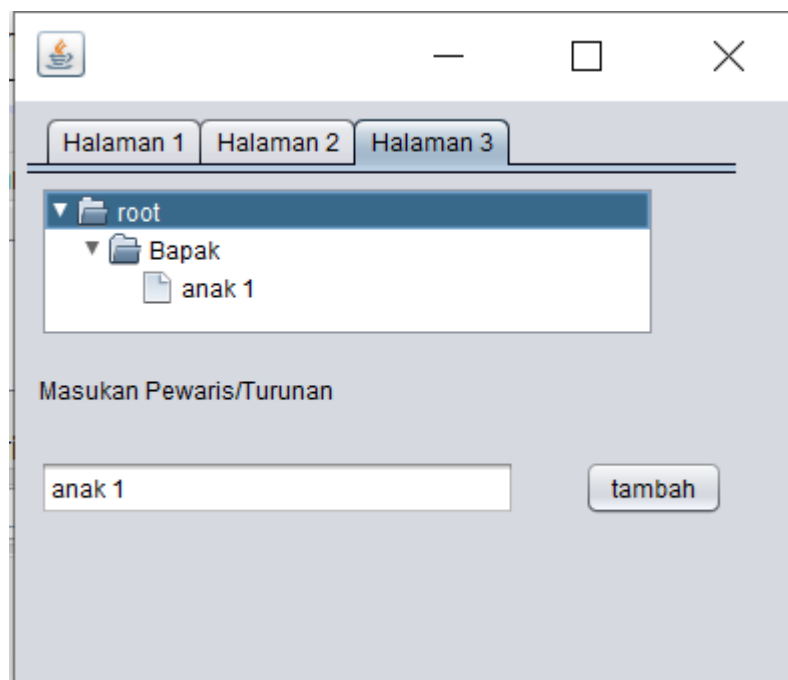
10. Next, double click on the **JButton cmdtambah**. Then you will enter the coding / source code section, then add the following script

```
private void cmdtambahActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    DefaultMutableTreeNode admin = new DefaultMutableTreeNode(txtturunan.getText());
    DefaultMutableTreeNode set = (DefaultMutableTreeNode) jTree1.getLastSelectedPathComponent();
    DefaultTreeModel dt;
    dt = (DefaultTreeModel) jTree1.getModel();
    dt.insertNodeInto(admin, set, set.getChildCount());
}
```

11. The final step, compile and run your project, then the program will appear as shown below

12. Select the Page 3 tab and click on **Jtree root**. And type **Bapak** in JTextField then click Add. Then Jtree will increase as shown below

Question

1. What are the uses of the JTabPane and JTtree swing components, in experiment 5?
2. Modify the program by adding JTable components to the Halaman 1 and Halaman 2 tabs

Assigment

Make a program that has functions like a calculator (able to add, subtract, multiply and share. With a display like the following.