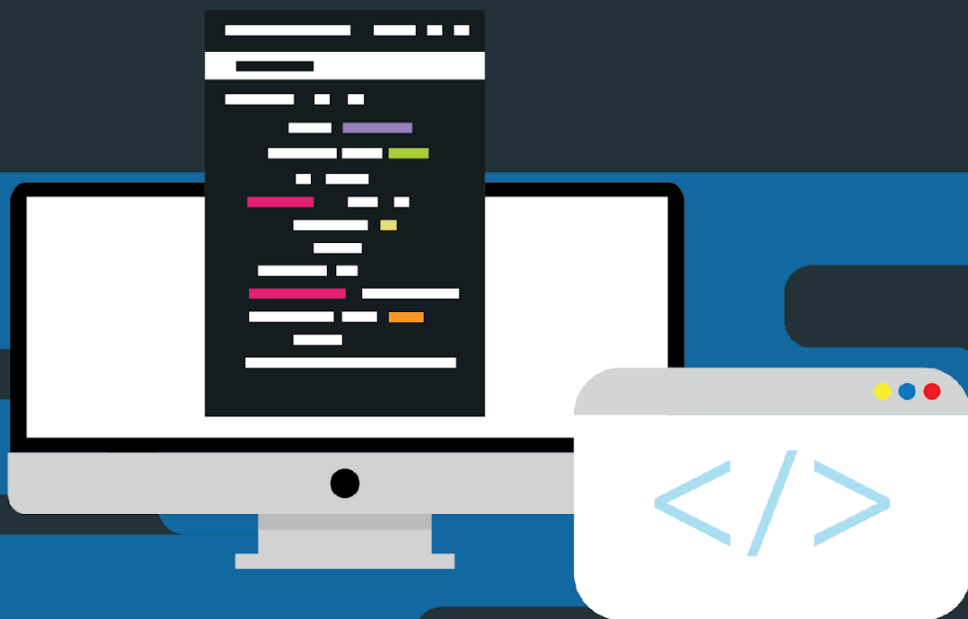


**PRACTICAL MODULE**  
**DESAIN DAN PEMROGRAMAN BERORIENTASI OBJEK**

**INTRODUCTION TO JAVA GUI**  
**WITH APACHE NETBEANS**

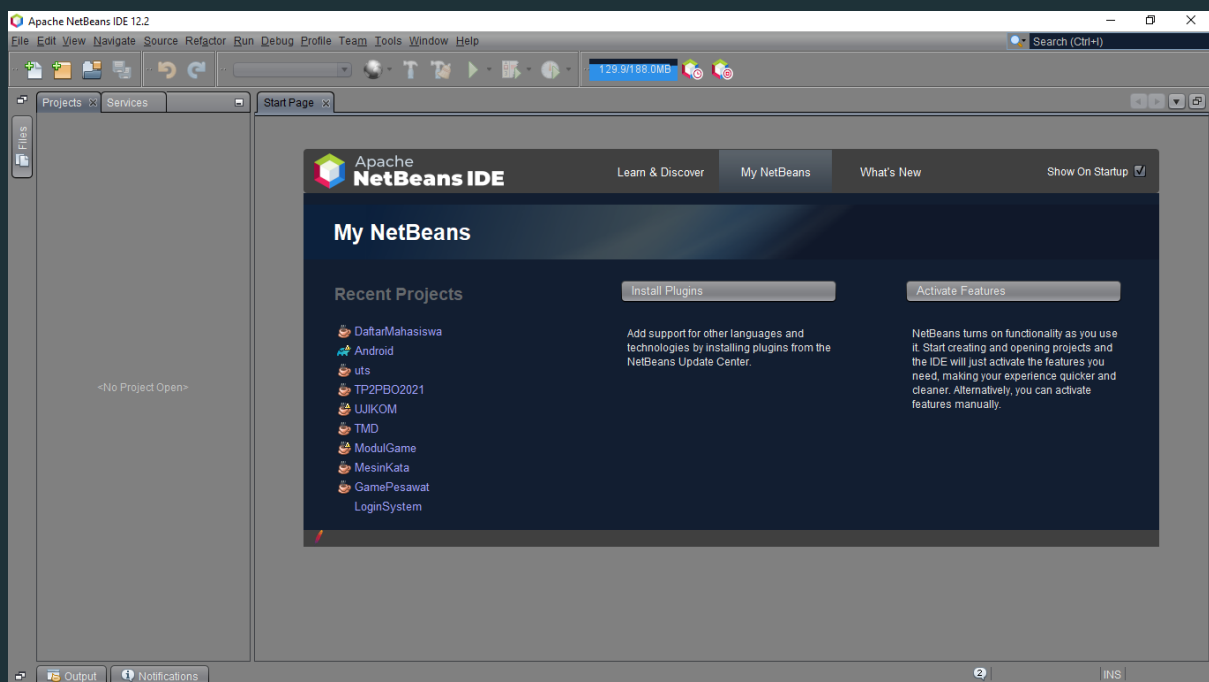


**TIM ASISTEN PEMROGRAMAN**  
**ANGKATAN 11**  
**ILMU KOMPUTER FPMIPA UPI**

# 1. Introduction

In this section, we will study Graphical User Interface (GUI) in programming with Java programming language using Apache Netbeans. Before we start, you already have to install Apache Netbeans IDE from [here](#). I recommend you to install Apache Netbeans 11th version or above because that version is more stable and has similar features now.

## 2. Apache Netbeans IDE

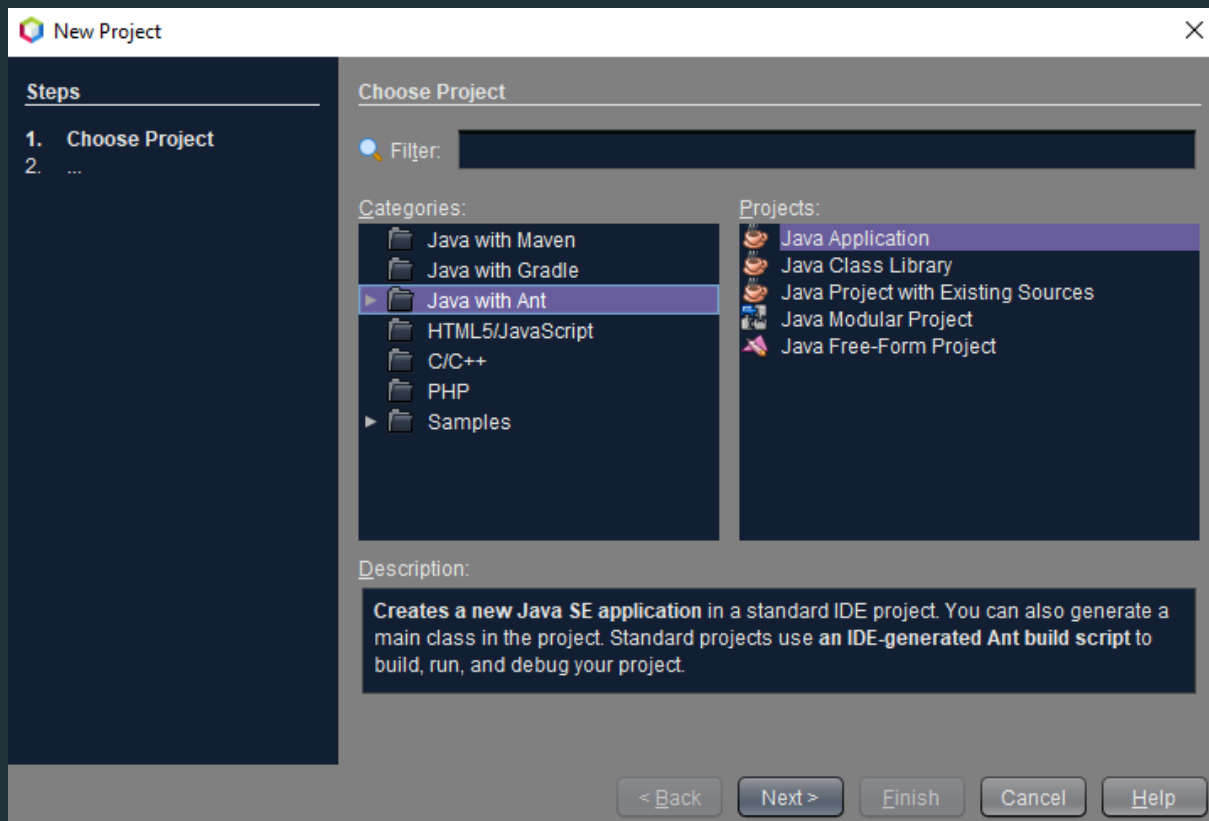


When you first open Apache Netbeans, you will go into Apache Netbeans' start page as you can see in the picture above.

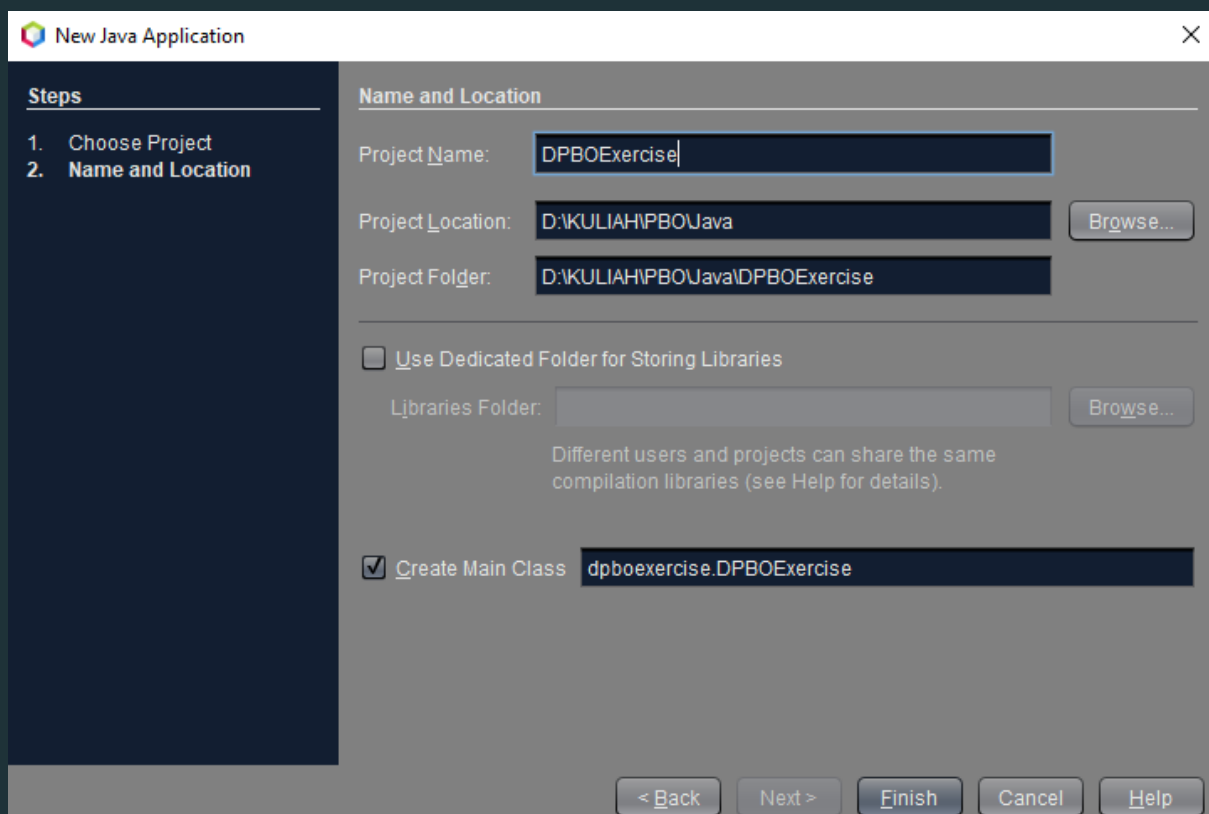
### Create Your First Application Project

If you want to create your own project, here are the steps that you need to do:

1. Go to **File > New Project**, or you can use **Ctrl + Shift + N**
2. As you can see, there will be show a dialog. You can choose **Java With Ant (in Categories Section) > Java Application (in Projects Section)**, and then click Next

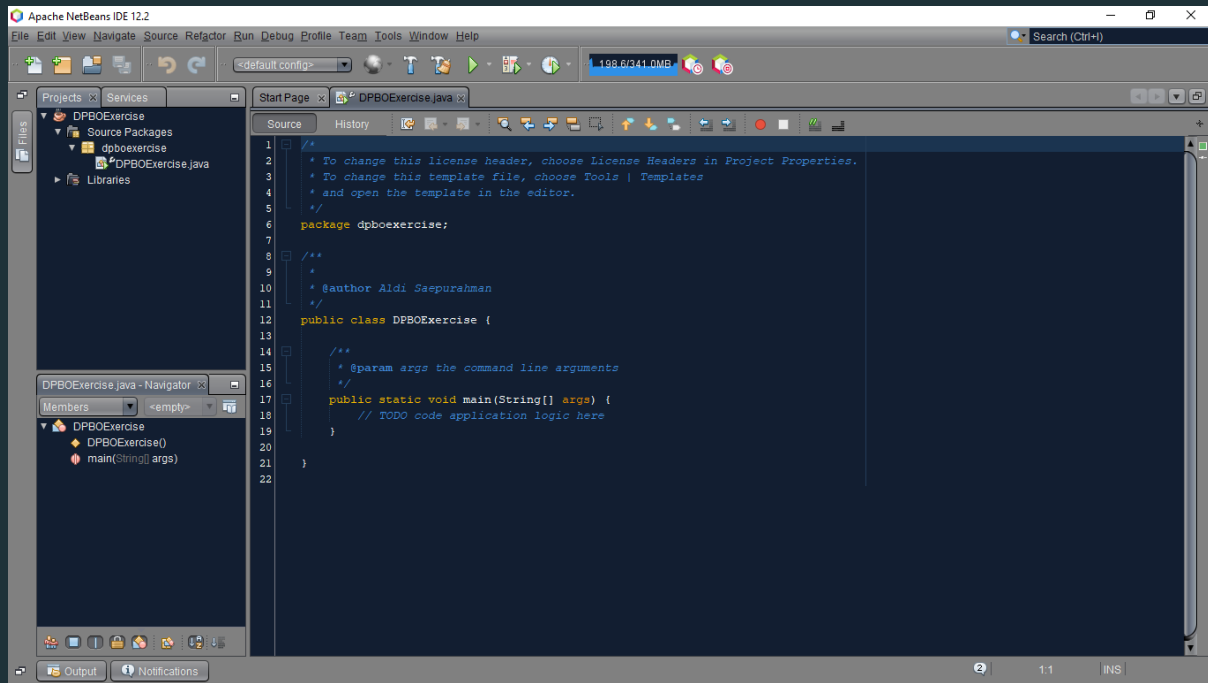


3. After that, you have to fill your **Project Name**, choose your **Project Location** or where you want to save that, and check or uncheck **Create Main Class**. For example, i will fill my **Project Name** with “DPBOExercise”.



Note : If you want to create Java GUI program, you must **uncheck Create Main Class** option, because we will create and use another class as our Main Class.

4. If you are sure with your project configuration (like Project Name etc), you can click **Finish** button.
5. This is how it looks when your project is created



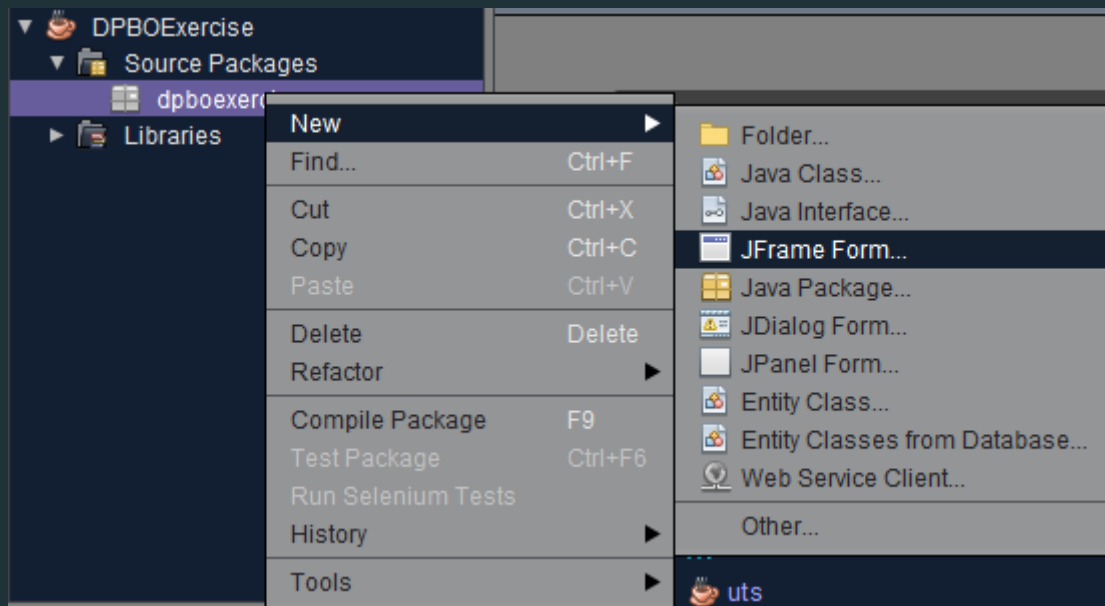
When you look the picture above, you can look more feature and navigation options that you can use to build your project.

- Projects Tab : this is where you can look your active project
- Services Tab : this tab is used to configure your project with third party like database, gradle etc
- Navigator Tab : this section is used to explain what methods are available in our active class/file

## Create Your JFrame Form Class

Short explanation about JFrame, this class is used to show your program as GUI, not CLI like you create your program in Alpro & Strukdat. How we can create our JFrame? Here are the steps that you need to do:

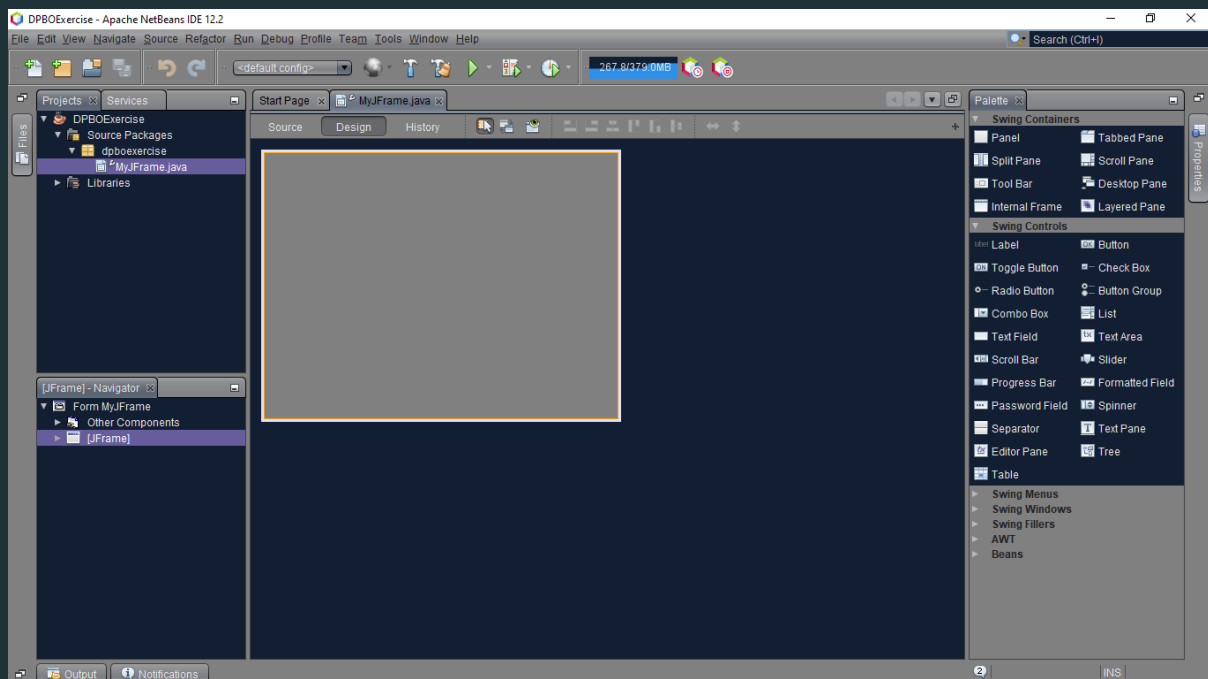
1. Right click on your project package, and choose **New > JFrame Form**



2. In this step, you can see a dialog that you can fulfil to create this file. **You just fill** your JFrame class name and click Finish.

Note : When you fill the class name, it will automatically generate your JFrame name with that.

3. When you first create JFrame class, you will see the display like this



In this page, you can create your own GUI design with more components in the navigation on the right.

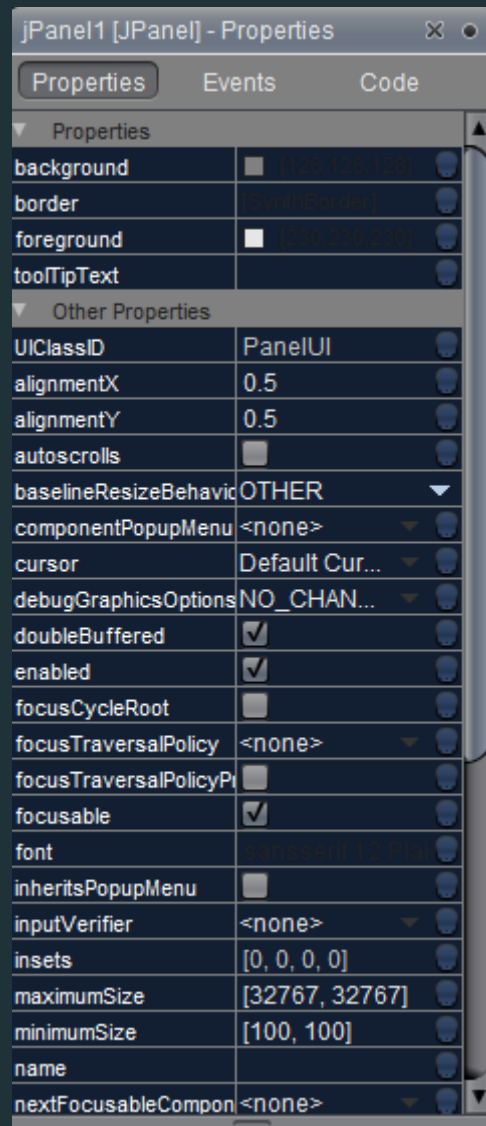
- Swing Containers : this can be used as our container program
- Swing Controls : this can be used for display the contents in our program like Label, Button, Text Field, Radio Button, etc

- Swing Menus : this features are used for create custom menu

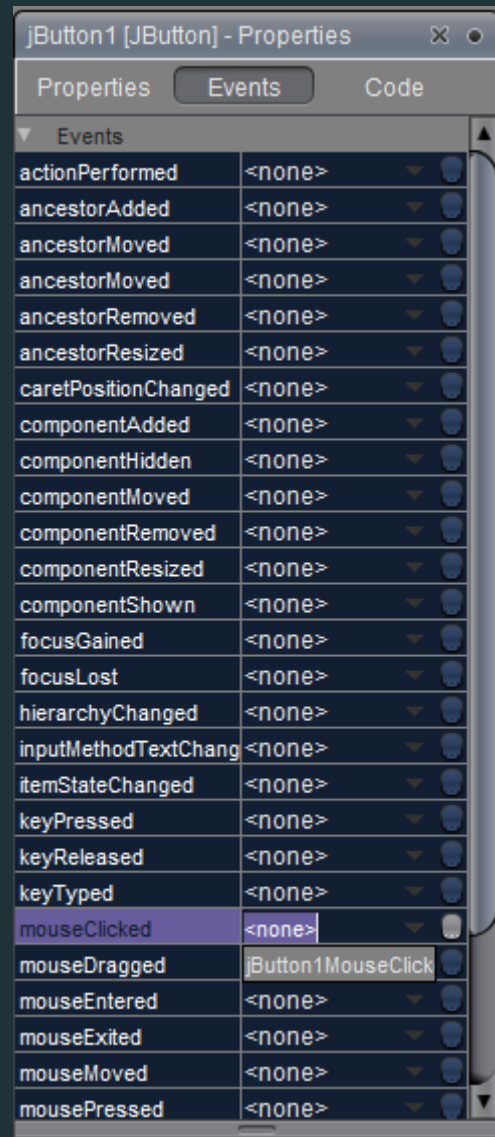
Beside that, this page show the navigation which you can choose to display your code or your design. If you choose **Source** tab, you will be directed to your code page, and if you choose **Design** tab, you will be directed back to your design page.



4. When you insert any content (swing container, controls, or menu), you can customize that with **properties** menu beside Palette tab, or you can click the components which you want to customize and choose **properties**.



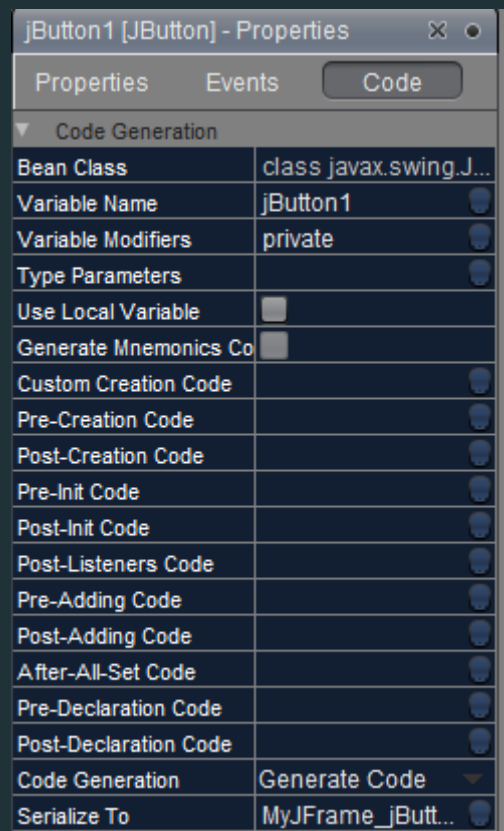
5. In properties menu, you can customize what color will be used in your components, what is the size of your component did you choose before, and etc
6. If you want to create your components can trigger an action (ex: Button can be clicked and redirect to other page), you can click **event** tab in properties menu. In this tab, you can choose many action that you want to create (example: if you want to create your button can be clicked, you can choose **mouseClicked** event)



7. After you choose that, you will be directed to your event method did you choose before. In this method, you can insert your code and your logic to create your component can run as you expected.

```
private void jButton1MouseClicked(java.awt.event.MouseEvent evt) {  
    // TODO add your handling code here:  
}
```

8. If you want to change your component identity (like component name, and access modifier), you can choose **Code** tab in property menu. This is the display from Code tab



### 3. Exercise & Challenge

Khusus bagian ini pake Bahasa Indo ya.

Pada bagian ini, kita akan menggunakan program GUI DataMahasiswa yang bisa kalian download [disini](#). Pada program ini, kalian bisa lihat beberapa fitur masih belum berjalan dengan baik dan beberapa style juga belum terlihat baik. Disini kalian perlu memperbaiki masalah tersebut berdasarkan poin yang dijabarkan di bawah ini:

- Mengganti font dan ukuran teks
- Mengubah nama variabel setiap komponen (misal komponen input NIM diberi nama variabel txtNim)
- Menambahkan validasi ketika inputan tidak lengkap, seperti memunculkan pesan error menggunakan class JOptionPane
- Menghapus data pada label inputan ketika sudah selesai add, update, delete, maupun ketika menekan tombol cancel
- Mengupdate tabel setiap kali ada perubahan pada data hasil add, update dan delete



Bonus:

- Menambahkan atribut inputan baru selain yang sudah ada pada form, namun tetap berkaitan dengan data mahasiswa. Pastikan penambahan ini ditampilkan juga di tabel

Note:

- Buat terlebih dahulu satu repository github dengan nama "LATIHAN5DPBO2022"
- Jangan lupa, build projectnya sampe bisa ada file .jar
- Simpan screenshot hasil program di dalam repository (kalau bisa di readme.md nya langsung)
- Link submission latihan nya [disini](#)

## 4. Closing

The authors express huge thanks to all the elements who have supported this practical session in Desain and Pemrograman Berorientasi Objek courses. We hope what did we get in this session can be blessed for all of us.

## 5. Reference

Rosa Ariani Sukamto. (2021). Pengenalan Kelas dan Implementasinya. Desain dan Pemrograman Berorientasi Objek. Bandung, Jawa Barat, Indonesia

Asisten Pemrograman 10. (2021). Praktikum 2 PBO. Desain dan Pemrograman Berorientasi Objek. Bandung, Jawa Barat, Indonesia

Apache Netbeans

<https://netbeans.apache.org/kb/>

JOptionPane

<https://www.petanikode.com/java-swing-joptionpane/>