

**PRAKTIKUM KONSTRUKSI PERANGKAT LUNAK
TUGAS PENDAHULUAN 03**

Implementasi Generic Method & Generic Class



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1. Pendahuluan

Pada praktikum ini, dilakukan implementasi program berbasis Console Application menggunakan C# dengan konsep Generic Class dan Generic Method dalam sebuah kelas. Selain itu, dilakukan juga penggunaan Git untuk manajemen versi kode program serta pembuatan dan pengelolaan branch.

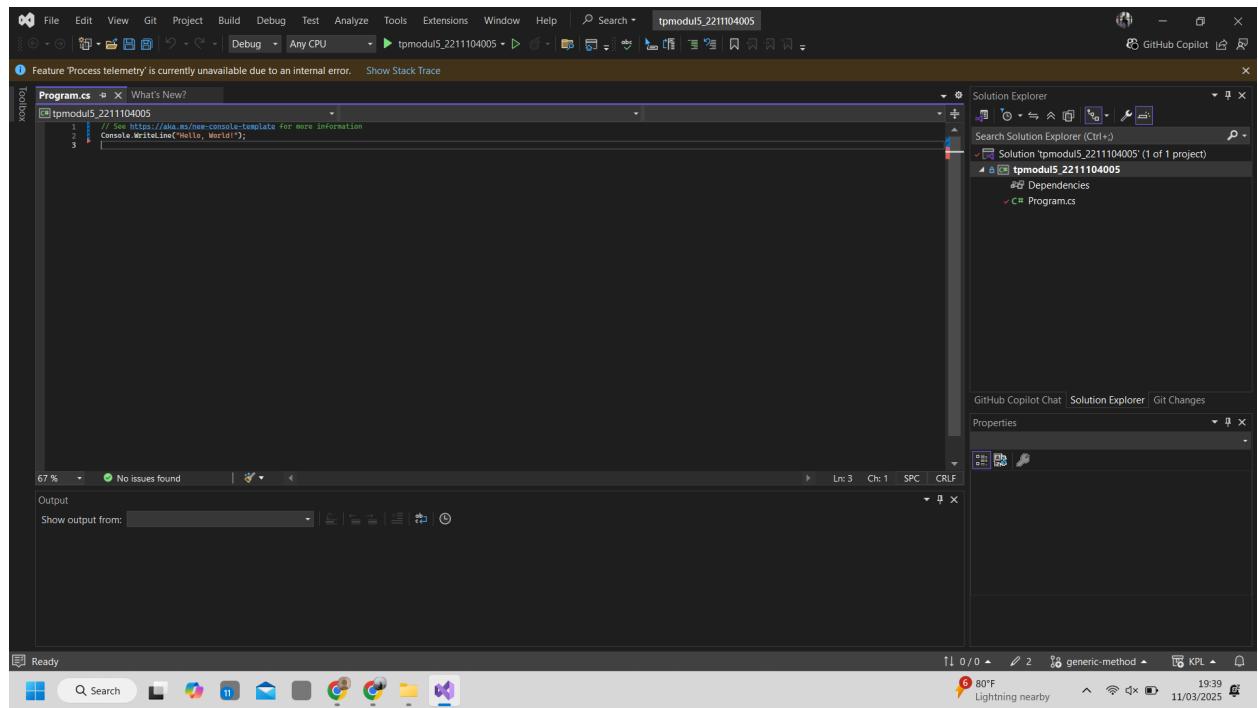
Tujuan:

- a. Membuat proyek Console Application di Visual Studio.
- b. Mengelola kode menggunakan Git dan GitHub.
- c. Membuat branch baru dan mengimplementasikan Generic Method dan Generic Class.
- d. Melakukan commit, push, serta merge perubahan ke repository GitHub.

2. Hasil dan Pembahasan

Setelah mengikuti seluruh langkah di atas, hasil yang diperoleh adalah:

- a. Membuat Project Console Application



b. Membuat Branch Baru Pada Git Project

The screenshot shows a Git interface with three sections: Default, Your branches, and Active branches. In the Default section, there is one branch named 'main'. In the 'Your branches' and 'Active branches' sections, there are three branches: 'generic-class', 'generic-method', and 'implementasi-generic-method'. Each branch entry includes columns for Updated, Check status, Behind/Ahead, Pull request, and a more options icon.

Default	
Branch	Updated
main	2 minutes ago

Your branches	
Branch	Updated
generic-class	16 minutes ago
generic-method	2 hours ago
implementasi-generic-method	7 hours ago

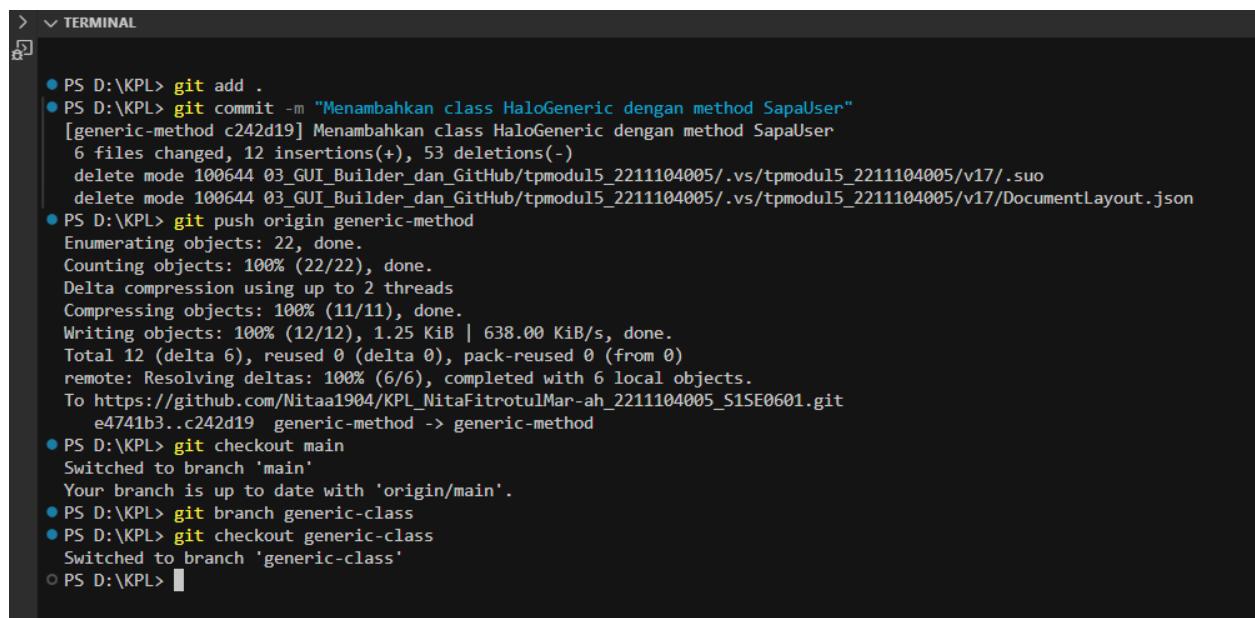
Active branches	
Branch	Updated
generic-class	16 minutes ago
generic-method	2 hours ago
implementasi-generic-method	7 hours ago

c. Menambahkan Method Dengan Generic

The screenshot shows a C# code editor with a file named 'Program.cs'. The code defines a generic class 'HaloGeneric<T>' with a method 'SapaUser(T nama)' that prints a greeting message. It also defines a 'Program' class with a 'Main()' method that creates an instance of 'HaloGeneric<string>' and calls its 'SapaUser("Nita")' method. The code editor highlights the generic type 'T' in red.

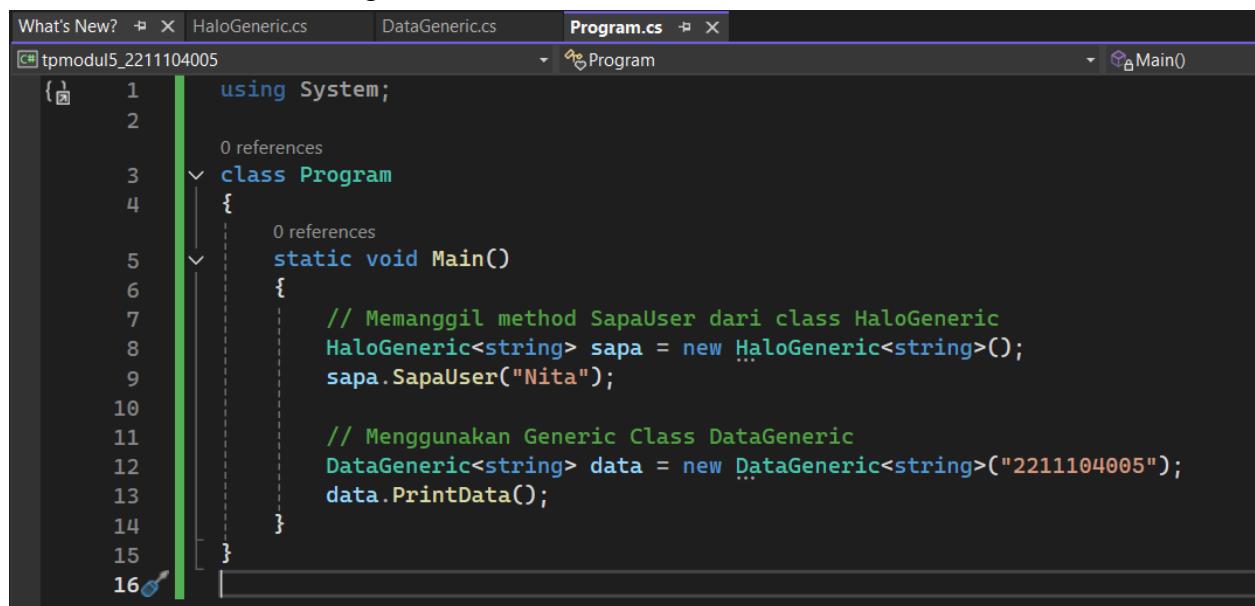
```
1  using System;
2
3  class HaloGeneric<T>
4  {
5      public void SapaUser(T nama)
6      {
7          Console.WriteLine($"Halo user {nama}");
8      }
9  }
10 class Program
11 {
12     static void Main()
13     {
14         HaloGeneric<string> sapa = new HaloGeneric<string>();
15         sapa.SapaUser("Nita"); // Menggunakan nama panggilan
16     }
17 }
```

d. Melakukan Commit, Push, Dan Pindah Ke Branch



```
PS D:\KPL> git add .
PS D:\KPL> git commit -m "Menambahkan class HaloGeneric dengan method SapaUser"
[generic-method c242d19] Menambahkan class HaloGeneric dengan method SapaUser
 6 files changed, 12 insertions(+), 53 deletions(-)
  delete mode 100644 03_GUI_Builder_dan_GitHub/tpmodul5_2211104005/.vs/tpmodul5_2211104005/v17/.suo
  delete mode 100644 03_GUI_Builder_dan_GitHub/tpmodul5_2211104005/.vs/tpmodul5_2211104005/v17/DocumentLayout.json
PS D:\KPL> git push origin generic-method
Enumerating objects: 22, done.
Counting objects: 100% (22/22), done.
Delta compression using up to 2 threads
Compressing objects: 100% (11/11), done.
Writing objects: 100% (12/12), 1.25 KiB | 638.00 KiB/s, done.
Total 12 (delta 6), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (6/6), completed with 6 local objects.
To https://github.com/Nitaai904/KPL_NitaFitrotulMar-ah_2211104005_S1SE0601.git
  e4741b3..c242d19 generic-method -> generic-method
PS D:\KPL> git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
PS D:\KPL> git branch generic-class
PS D:\KPL> git checkout generic-class
Switched to branch 'generic-class'
PS D:\KPL>
```

e. Menambahkan Method Dengan Generic Class



```
What's New? # X HaloGeneric.cs DataGeneric.cs Program.cs # X
tpmodul5_2211104005 Main()
1 using System;
2
3 class Program
4 {
5     static void Main()
6     {
7         // Memanggil method SapaUser dari class HaloGeneric
8         HaloGeneric<string> sapa = new HaloGeneric<string>();
9         sapa.SapaUser("Nita");
10
11         // Menggunakan Generic Class DataGeneric
12         DataGeneric<string> data = new DataGeneric<string>("2211104005");
13         data.PrintData();
14     }
15 }
16
```

What's New? HaloGeneric.cs DataGeneric.cs Program.cs

C# tpmodul5_2211104005 DataGeneric<T> PrintD

```
{ 1  using System;
 2
 3      3 references
 4  public class DataGeneric<T>
 5  {
 6      1 reference
 7      private T data; // Properti generic
 8
 9      1 reference
10     public DataGeneric(T data)
11     {
12         this.data = data;
13
14     1 reference
15     public void PrintData()
16     {
17         Console.WriteLine($"Data yang tersimpan adalah: {data}");
18     }
}
```

What's New? HaloGeneric.cs DataGeneric.cs Program.cs

C# tpmodul5_2211104005 HaloGeneric<T>

```
{ 1  using System;
 2
 3      2 references
 4  public class HaloGeneric<T>
 5  {
 6      1 reference
 7      1 reference
 8  public void SapaUser(T nama)
 9  {
10      Console.WriteLine($"Halo user {nama}");
11  }
12 }
```

Microsoft Visual Studio Debug X + ▾

```
Halo user Nita
Data yang tersimpan adalah: 2211104005
```

f. Melakukan Commit, Push, Dan Pindah Branch Bagian 2

```

PS D:\KPL> git add .
PS D:\KPL> git commit -m "Menambahkan class DataGeneric"
[generic-class d9af1c6] Menambahkan class DataGeneric
 31 files changed, 359 insertions(+)
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005.sln
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\DataGeneric.cs
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\HalogenGeneric.cs
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\Program.cs
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\bin\Debug\net8.0\tpmodul5_2211104005.deps.json
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\bin\Debug\net8.0\tpmodul5_2211104005.dll
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\bin\Debug\net8.0\tpmodul5_2211104005.exe
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\bin\Debug\net8.0\tpmodul5_2211104005.pdb
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\bin\Debug\net8.0\tpmodul5_2211104005.runtimeconfig.json
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\bin\Debug\net8.0\tpmodul5_2211104005.NETCoreApp,Version=v8.0.AssemblyAttributes.cs
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\bin\Debug\net8.0\tpmodul5_2211104005\obj\Debug\net8.0\ref\tpmodul5_2211104005.dll
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\bin\Debug\net8.0\tpmodul5_2211104005\obj\Debug\net8.0\ref\tpmodul5_2211104005.dll
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\bin\Debug\net8.0\tpmodul5_2211104005\obj\Debug\net8.0\tpmodul5_2211104005.AssemblyInfo.cs
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\bin\Debug\net8.0\tpmodul5_2211104005\obj\Debug\net8.0\tpmodul5_2211104005.AssemblyInfoInputs.cache
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\bin\Debug\net8.0\tpmodul5_2211104005\obj\Debug\net8.0\tpmodul5_2211104005.GeneratedMSBuildEditorConfig.editorconfig
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\bin\Debug\net8.0\tpmodul5_2211104005\obj\Debug\net8.0\tpmodul5_2211104005.GlobalUsings.g.cs
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\bin\Debug\net8.0\tpmodul5_2211104005.assets.cache
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\bin\Debug\net8.0\tpmodul5_2211104005.csproj.BuildWithSkippedAnalyzers
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\bin\Debug\net8.0\tpmodul5_2211104005.csproj.CoreCompileInputs.cache
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\bin\Debug\net8.0\tpmodul5_2211104005.csproj.FileListAbsolute.txt
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\bin\Debug\net8.0\tpmodul5_2211104005\obj\Debug\net8.0\tpmodul5_2211104005.dll
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\bin\Debug\net8.0\tpmodul5_2211104005\obj\Debug\net8.0\tpmodul5_2211104005.GeneratedMSBuildEditorConfig.editorconfig
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\bin\Debug\net8.0\tpmodul5_2211104005\obj\Debug\net8.0\tpmodul5_2211104005.GlobalUsings.g.cs
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\bin\Debug\net8.0\tpmodul5_2211104005\obj\Debug\net8.0\tpmodul5_2211104005.assets.cache
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\bin\Debug\net8.0\tpmodul5_2211104005\obj\Debug\net8.0\tpmodul5_2211104005.csproj.nuget.dgspec.json
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\bin\Debug\net8.0\tpmodul5_2211104005\obj\Debug\net8.0\tpmodul5_2211104005.csproj.nuget.g.props
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\bin\Debug\net8.0\tpmodul5_2211104005\obj\Debug\net8.0\tpmodul5_2211104005.csproj.nuget.g.targets
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\bin\Debug\net8.0\tpmodul5_2211104005\obj\Debug\net8.0\tpmodul5_2211104005.csproj
PS D:\KPL> git push origin generic-class
Enumerating objects: 48, done.
Counting objects: 100% (48/48), done.
Delta compression using up to 2 threads
Compressing objects: 100% (35/35), done.
Writing objects: 100% (38/38), 78.62 KiB | 128.00 KiB/s, done.
Total 38 (delta 3), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (3/3), completed with 1 local object.
remote:
remote: Create a pull request for 'generic-class' on GitHub by visiting:
remote:   https://github.com/Nita1904/KPL_NitaFitrotulMar-ah_2211104005_S1SE0601/pull/new/generic-class
remote:
To https://github.com/Nita1904/KPL_NitaFitrotulMar-ah_2211104005_S1SE0601.git
 * [new branch]      generic-class -> generic-class

```

g. Melakukan Git Merge Dari Kedua Branch Baru

```

PS D:\KPL> git merge generic-method
Updating 0bcf206..c242d19
Fast-forward
.../03_Jurnal_GUI_Builder_dan_GitHub.pdf | Bin 0 -> 644005 bytes
.../tpmodul5_2211104005/tpmodul5_2211104005.sln | 25 ++++++
.../tpmodul5_2211104005/Program.cs | 17 +++++
.../.NETCoreApp,Version=v8.0.AssemblyAttributes.cs | 4 ++
.../net8.0/tpmodul5_2211104005.AssemblyInfo.cs | 23 ++++++
.../tpmodul5_2211104005.AssemblyInfoInputs.cache | 1 +
.../0005.GeneratedMSBuildEditorConfig.editorconfig | 15 +++
.../net8.0/tpmodul5_2211104005.GlobalUsings.g.cs | 8 +++
.../Debug/net8.0/tpmodul5_2211104005.assets.cache | Bin 0 -> 227 bytes
.../tpmodul5_2211104005/obj/project.assets.json | 79 ++++++=====
.../tpmodul5_2211104005/obj/project.nuget.cache | 8 +++
.../tpmodul5_2211104005.csproj.nuget.dgspec.json | 73 ++++++=====
.../obj/tpmodul5_2211104005.csproj.nuget.g.props | 16 +++
.../obj/tpmodul5_2211104005.csproj.nuget.g.targets | 2 +
.../tpmodul5_2211104005/tpmodul5_2211104005.csproj | 10 +++
15 files changed, 281 insertions(+)
create mode 100644 03 GUI_Builder_dan_GitHub/03_Jurnal_GUI_Builder_dan_GitHub.pdf
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\tpmodul5_2211104005.sln
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\tpmodul5_2211104005\Program.cs
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\tpmodul5_2211104005\obj\Debug\net8.0/.NETCoreApp,Version=v8.0.AssemblyAttributes.cs
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\tpmodul5_2211104005\obj\Debug\net8.0\tpmodul5_2211104005.AssemblyInfo.cs
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\tpmodul5_2211104005\obj\Debug\net8.0\tpmodul5_2211104005.AssemblyInfoInputs.cache
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\tpmodul5_2211104005\obj\Debug\net8.0\tpmodul5_2211104005.GeneratedMSBuildEditorConfig.editorconfig
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\tpmodul5_2211104005\obj\Debug\net8.0\tpmodul5_2211104005.GlobalUsings.g.cs
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\tpmodul5_2211104005\obj\Debug\net8.0\tpmodul5_2211104005.assets.cache
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\tpmodul5_2211104005\obj\project.assets.json
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\tpmodul5_2211104005\obj\project.nuget.cache
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\tpmodul5_2211104005\obj\Debug\net8.0\tpmodul5_2211104005.csproj.nuget.dgspec.json
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\tpmodul5_2211104005\obj\Debug\net8.0\tpmodul5_2211104005.csproj.nuget.g.props
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\tpmodul5_2211104005\obj\Debug\net8.0\tpmodul5_2211104005.csproj.nuget.g.targets
create mode 100644 03 GUI_Builder_dan_GitHub\tpmodul5_2211104005\tpmodul5_2211104005\obj\Debug\net8.0\tpmodul5_2211104005.csproj
PS D:\KPL> git merge generic-class
Auto-merging 03_GUI_Builder_dan_GitHub\tpmodul5_2211104005\tpmodul5_2211104005.sln
CONFLICT (add/add): Merge conflict in 03_GUI_Builder_dan_GitHub\tpmodul5_2211104005\tpmodul5_2211104005.sln
Auto-merging 03_GUI_Builder_dan_GitHub\tpmodul5_2211104005\tpmodul5_2211104005\Program.cs
CONFLICT (add/add): Merge conflict in 03_GUI_Builder_dan_GitHub\tpmodul5_2211104005\tpmodul5_2211104005\Program.cs
Auto-merging 03_GUI_Builder_dan_GitHub\tpmodul5_2211104005\tpmodul5_2211104005\obj\Debug\net8.0/.NETCoreApp,Version=v8.0.AssemblyAttributes.cs
CONFLICT (add/add): Merge conflict in 03_GUI_Builder_dan_GitHub\tpmodul5_2211104005\tpmodul5_2211104005\obj\Debug\net8.0\tpmodul5_2211104005.AssemblyInfo.cs
Auto-merging 03_GUI_Builder_dan_GitHub\tpmodul5_2211104005\tpmodul5_2211104005\obj\Debug\net8.0\tpmodul5_2211104005.AssemblyInfoInputs.cache
CONFLICT (add/add): Merge conflict in 03_GUI_Builder_dan_GitHub\tpmodul5_2211104005\tpmodul5_2211104005\obj\Debug\net8.0\tpmodul5_2211104005.AssemblyInfoInputs.cache
Automatic merge failed; fix conflicts and then commit the result.
PS D:\KPL>

```

```
> ˇ TERMINAL
PS D:\KPL> git add .
PS D:\KPL> git commit -m "Merge branch generic-class ke main"
[main 7dc8ca3] Merge branch generic-class ke main
PS D:\KPL> git push origin main
Enumerating objects: 29, done.
Counting objects: 100% (29/29), done.
Delta compression using up to 2 threads
Compressing objects: 100% (9/9), done.
Writing objects: 100% (11/11), 1.13 KiB | 64.00 KiB/s, done.
Total 11 (delta 6), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (6/6), completed with 6 local objects.
To https://github.com/Nitaa1904/KPL_NitaFitrotulMar-ah_2211104005_S1SE0601.git
  0bcf206..7dc8ca3  main -> main
PS D:\KPL>
```