

**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.

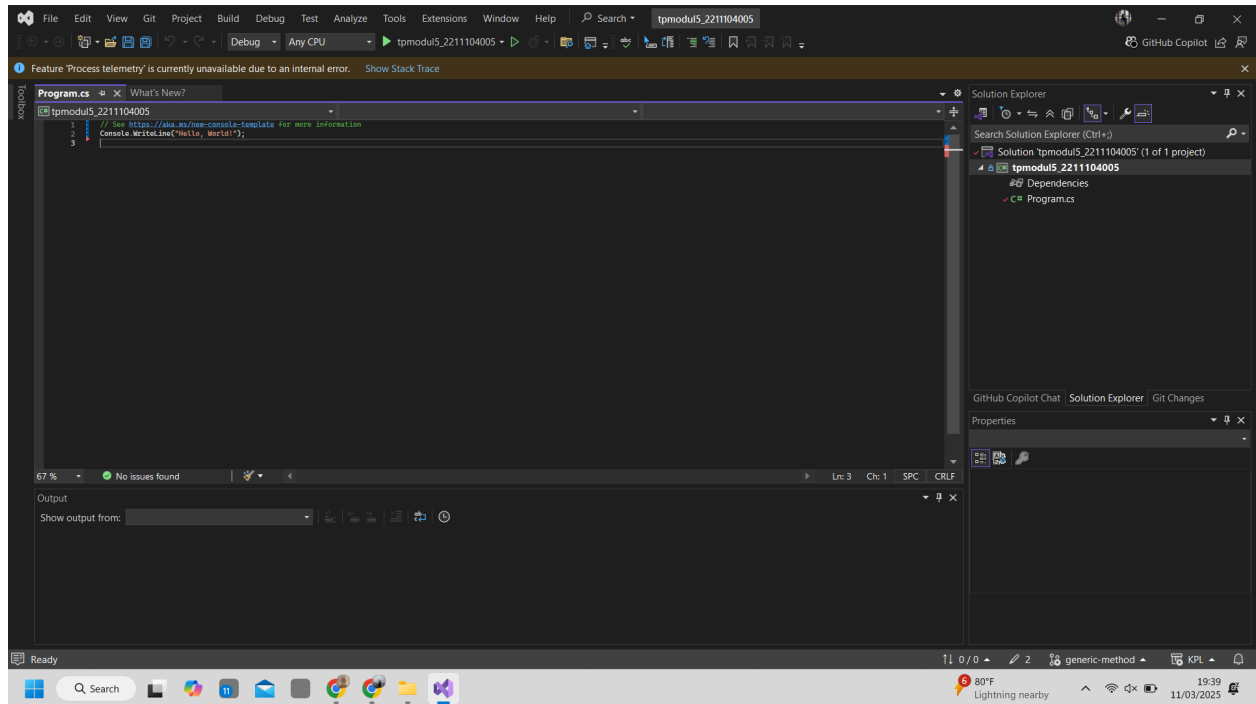
Tujuan:

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

2. Hasil dan Pembahasan

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

- Membuat Project Console Application



b. Membuat Branch Baru Pada Git Project

Default					
Branch	Updated	Check status	Behind	Ahead	Pull request
main	2 minutes ago				Default

Your branches					
Branch	Updated	Check status	Behind	Ahead	Pull request
generic-class	16 minutes ago		3	0	
generic-method	2 hours ago		2	0	
implementasi-generic-method	7 hours ago		6	0	

Active branches					
Branch	Updated	Check status	Behind	Ahead	Pull request
generic-class	16 minutes ago		3	0	
generic-method	2 hours ago		2	0	
implementasi-generic-method	7 hours ago		6	0	

c. Menambahkan Method Dengan Generic

```
Program.cs  What's New?
C# tpmodule5_2211104005 Program
1 using System;
2
3 2 references
4 class HaloGeneric<T>
5 {
6     1 reference
7     public void SapaUser(T nama)
8     {
9         Console.WriteLine($"Halo user {nama}");
10    }
11    0 references
12 class Program
13 {
14     0 references
15     static void Main()
16     {
17         HaloGeneric<string> sapa = new HaloGeneric<string>();
18         sapa.SapaUser("Nita"); // Menggunakan nama panggilan
19     }
20 }
```

d. Melakukan Commit, Push, Dan Pindah Ke Branch

```
> ▾ TERMINAL
[+]
● 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/Nitaa1904/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 ▾ Program
{
1  using System;
2
3  0 references
4  class Program
5  {
6      0 references
7      static void Main()
8      {
9          // Memanggil method SapaUser dari class HaloGeneric
10         HaloGeneric<string> sapa = new HaloGeneric<string>();
11         sapa.SapaUser("Nita");
12
13         // Menggunakan Generic Class DataGeneric
14         DataGeneric<string> data = new DataGeneric<string>("2211104005");
15         data.PrintData();
16     }
17 }
```

```
What's New? | HaloGeneric.cs | DataGeneric.cs | Program.cs
tpmodul5_2211104005 | DataGeneric<T> | PrintD

1 using System;
2
3 3 references
4 public class DataGeneric<T>
5 {
6     private T data; // Properti generic
7
8     // Konstruktor untuk menyimpan data
9     1 reference
10    public DataGeneric(T data)
11    {
12        this.data = data;
13    }
14
15    // Method untuk mencetak data yang tersimpan
16    1 reference
17    public void PrintData()
18    {
19        Console.WriteLine($"Data yang tersimpan adalah: {data}");
20    }
21 }
```

```
What's New? | HaloGeneric.cs | DataGeneric.cs | Program.cs
tpmodul5_2211104005 | HaloGeneric<T>

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

```
Microsoft Visual Studio Debug Console
+ v

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

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

```
PROBLEMS OUTPUT TERMINAL PORTS
> TERMINAL
PS D:\KPL> git add .
PS D:\KPL> git commit -m "Menambahkan class DataGeneric"
[generic-class 09af1c6] Menambahkan class DataGeneric
31 files changed, 359 insertions(+)
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/DataGeneric.cs
create mode 100644 03_GUI_Builder_dan_GitHub/tpmodul5_2211104005/tpmodul5_2211104005/HaloGeneric.cs
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/bin/Debug/net8.0/tpmodul5_2211104005.deps.json
create mode 100644 03_GUI_Builder_dan_GitHub/tpmodul5_2211104005/tpmodul5_2211104005/bin/Debug/net8.0/tpmodul5_2211104005.dll
create mode 100644 03_GUI_Builder_dan_GitHub/tpmodul5_2211104005/tpmodul5_2211104005/bin/Debug/net8.0/tpmodul5_2211104005.exe
create mode 100644 03_GUI_Builder_dan_GitHub/tpmodul5_2211104005/tpmodul5_2211104005/bin/Debug/net8.0/tpmodul5_2211104005.pdb
create mode 100644 03_GUI_Builder_dan_GitHub/tpmodul5_2211104005/tpmodul5_2211104005/bin/Debug/net8.0/tpmodul5_2211104005.runtimeconfig.json
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/apphost.exe
create mode 100644 03_GUI_Builder_dan_GitHub/tpmodul5_2211104005/tpmodul5_2211104005/obj/Debug/net8.0/ref/tpmodul5_2211104005.dll
create mode 100644 03_GUI_Builder_dan_GitHub/tpmodul5_2211104005/tpmodul5_2211104005/obj/Debug/net8.0/refint/tpmodul5_2211104005.dll
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/Debug/net8.0/tpmodul5_2211104005.csproj.BuildWithSkipAnalyzers
create mode 100644 03_GUI_Builder_dan_GitHub/tpmodul5_2211104005/tpmodul5_2211104005/obj/Debug/net8.0/tpmodul5_2211104005.csproj.CoreCompileInputs.cache
create mode 100644 03_GUI_Builder_dan_GitHub/tpmodul5_2211104005/tpmodul5_2211104005/obj/Debug/net8.0/tpmodul5_2211104005.FileListAbsolute.txt
create mode 100644 03_GUI_Builder_dan_GitHub/tpmodul5_2211104005/tpmodul5_2211104005/obj/Debug/net8.0/tpmodul5_2211104005.dll
create mode 100644 03_GUI_Builder_dan_GitHub/tpmodul5_2211104005/tpmodul5_2211104005/obj/Debug/net8.0/tpmodul5_2211104005.genruntimeconfig.cache
create mode 100644 03_GUI_Builder_dan_GitHub/tpmodul5_2211104005/tpmodul5_2211104005/obj/Debug/net8.0/tpmodul5_2211104005.pdb
create mode 100644 03_GUI_Builder_dan_GitHub/tpmodul5_2211104005/tpmodul5_2211104005/obj/Debug/net8.0/tpmodul5_2211104005.sourcelink.json
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.csproj.nuget.dgspec.json
create mode 100644 03_GUI_Builder_dan_GitHub/tpmodul5_2211104005/tpmodul5_2211104005.csproj.nuget.g.props
create mode 100644 03_GUI_Builder_dan_GitHub/tpmodul5_2211104005/tpmodul5_2211104005.csproj.nuget.g.targets
create mode 100644 03_GUI_Builder_dan_GitHub/tpmodul5_2211104005/tpmodul5_2211104005.csproj
PS D:\KPL> git push origin generic-class
Enumerating objects: 40, done.
Counting objects: 100% (40/40), 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/Nitaa1904/KPL_NitaiFitrotulMar-ah_2211104005_S1SE0601/pull/new/generic-class
remote:
To https://github.com/Nitaa1904/KPL_NitaiFitrotulMar-ah_2211104005_S1SE0601.git
 * [new branch]      generic-class -> generic-class
```

g. Melakukan Git Merge Dari Kedua Branch Baru

```
PROBLEMS OUTPUT TERMINAL PORTS
> TERMINAL
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 +
.../04005.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.csproj.nuget.dgspec.json
create mode 100644 03_GUI_Builder_dan_GitHub/tpmodul5_2211104005/tpmodul5_2211104005.csproj.nuget.g.props
create mode 100644 03_GUI_Builder_dan_GitHub/tpmodul5_2211104005/tpmodul5_2211104005.csproj.nuget.g.targets
create mode 100644 03_GUI_Builder_dan_GitHub/tpmodul5_2211104005/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/tpmodul5_2211104005.AssemblyInfo.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.GeneratedMSBuildEditorConfig.editorconfig
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.
```

> ▾ 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> █
```