



TUGAS JURNAL
KONSTRUKSI PERANGKAT LUNAK
MODUL 7

D
I
S
U
S
U
N

OLEH :
TIURMA GRACE ANGELINA – 2311104042
S1-SE07-02

Dosen :
YIS

Prodi S1 Rekaya Perangkat Lunak
Direktorat Kampus Purwokerto

1. PEMBUATAN GITHUB REPO UNTUK KELOMPOK

Link github kelompok : https://github.com/tiurmagrace/modul7_kelompok_4.git

2. MENAMBAHKAN JSON DESERIALIZATION 1

Branch 1:

```
C:\WINDOWS\system32\cmd.exe
*****
** Visual Studio 2022 Developer Command Prompt v17.13.0
** Copyright (c) 2022 Microsoft Corporation
*****

C:\Users\USER\source\repos\modul7_kelompok_4>git branch
* main

C:\Users\USER\source\repos\modul7_kelompok_4>git checkout -b tiur1
Switched to a new branch 'tiur1'

C:\Users\USER\source\repos\modul7_kelompok_4>git branch
  main
* tiur1

C:\Users\USER\source\repos\modul7_kelompok_4>_
```

Code Class :

1. jurnal7_1_2311104042.json

```
{
  "firstName": "Tiurma Grace",
  "lastName": "Angelina",
  "gender": "female",
  "age": 19,
  "address": {
    "streetAddress": "Arcawinangun",
    "city": "Purwokerto",
    "state": "Central Java"
  },
  "courses": [
    { "code": "CRI2C4", "name": "Konstruksi Perangkat Lunak" },
    { "code": "CRI2C3", "name": "Pemodelan Perangkat Lunak" }
  ]
}
```

2. DataMahasiswa2311104042.cs

```

using System;
using System.Collections.Generic;
using System.IO;
using System.Text.Json;

public class DataMahasiswa2311104042
{
    public class Address
    {
        public string streetAddress { get; set; }
        public string city { get; set; }
        public string state { get; set; }
    }

    public class Course
    {
        public string code { get; set; }
        public string name { get; set; }
    }

    public class Mahasiswa
    {
        public string firstName { get; set; }
        public string lastName { get; set; }
        public string gender { get; set; }
        public int age { get; set; }
        public Address address { get; set; }
        public List<Course> courses { get; set; }
    }

    public static void ReadJSON()
    {
        string filePath = "jurnal7_1_2311104042.json";
        string jsonString = File.ReadAllText(filePath);

        Mahasiswa mhs = JsonSerializer.Deserialize<Mahasiswa>(jsonString);

        Console.WriteLine("===== DATA MAHASISWA =====");
        Console.WriteLine($"Nama: {mhs.firstName} {mhs.lastName}");
        Console.WriteLine($"Jenis Kelamin: {mhs.gender}");
        Console.WriteLine($"Umur: {mhs.age}");
        Console.WriteLine($"Alamat: {mhs.address.streetAddress}, {mhs.address.city}, {mhs.address.state}");
        Console.WriteLine("\nMata Kuliah yang Diambil:");

        int i = 1;
    }
}

```

```

foreach (var course in mhs.courses)
{
    Console.WriteLine($"MK {i++}: {course.code} - {course.name}");
}

Console.ReadLine();
}
}

```

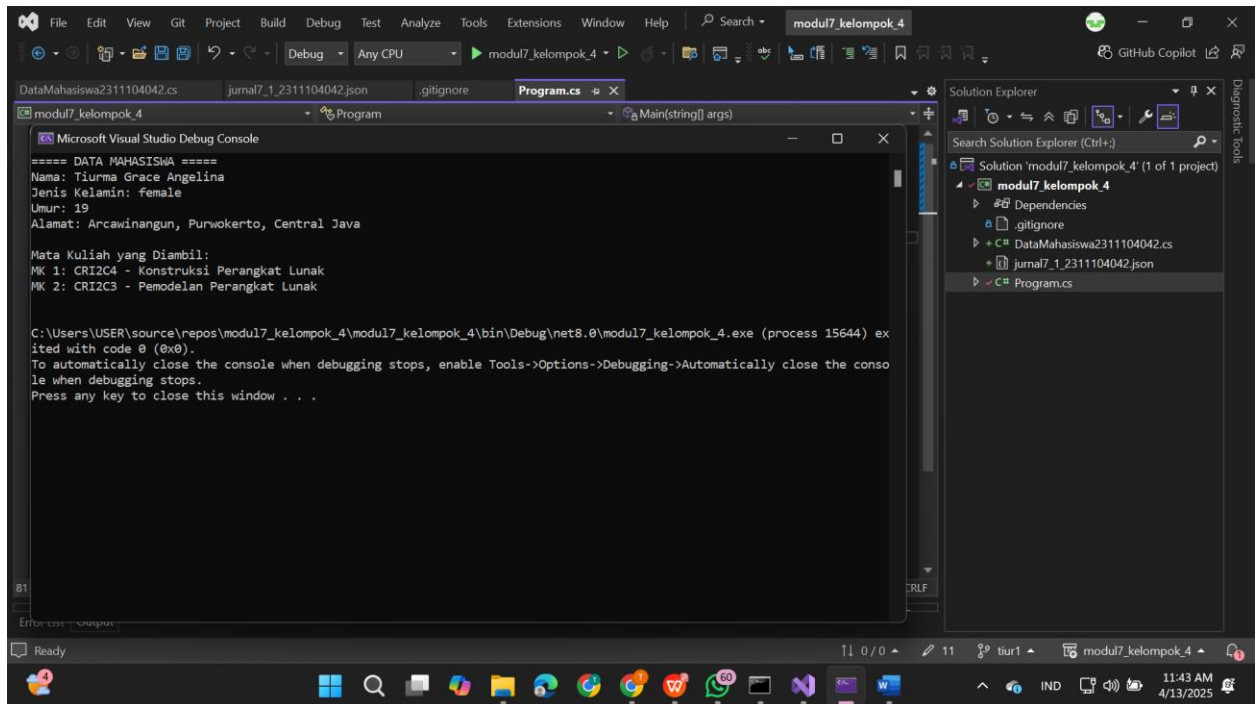
3. Program.cs

```

class Program
{
    static void Main(string[] args)
    {
        DataMahasiswa2311104042.ReadJSON();
    }
}

```

Output :



Commit :

```
C:\WINDOWS\system32\cmd.exe
*****
** Visual Studio 2022 Developer Command Prompt v17.13.0
** Copyright (c) 2022 Microsoft Corporation
*****

C:\Users\USER\source\repos\modul7_kelompok_4>git branch
* main

C:\Users\USER\source\repos\modul7_kelompok_4>git checkout -b tiur1
Switched to a new branch 'tiur1'

C:\Users\USER\source\repos\modul7_kelompok_4>git branch
main
* tiur1

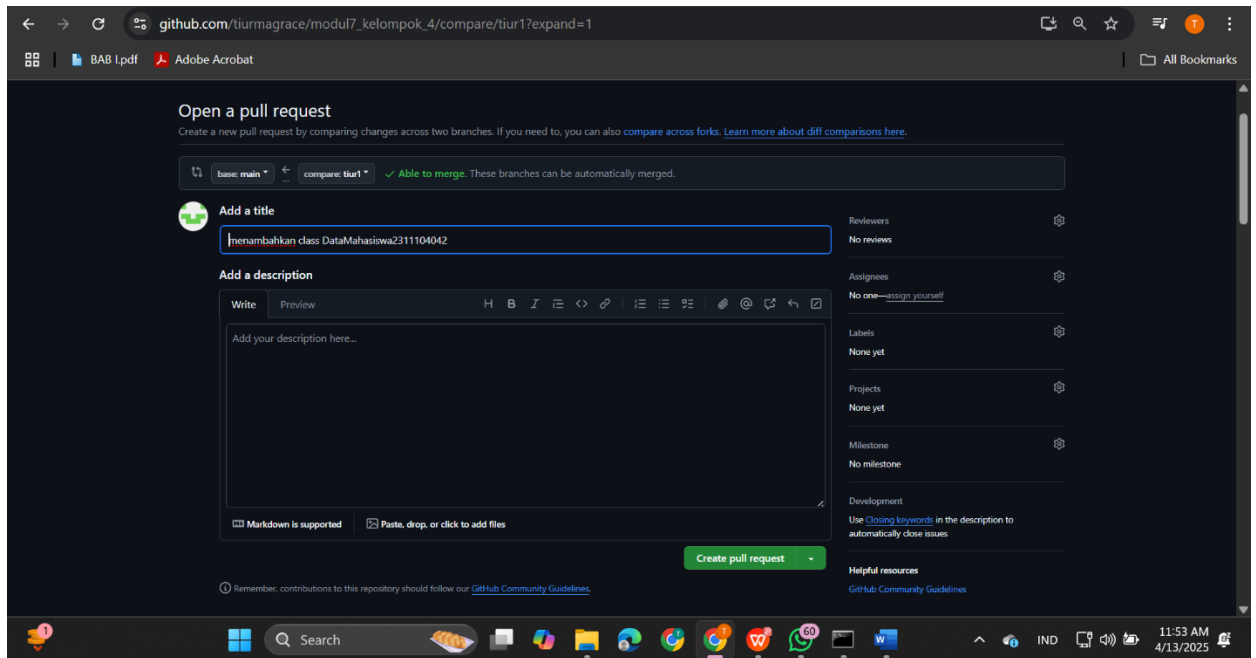
C:\Users\USER\source\repos\modul7_kelompok_4>git add modul7_kelompok_4
warning: in the working copy of 'modul7_kelompok_4/jurnal7_1_2311104042.json', LF will be replaced by CRLF the next time Git touches it

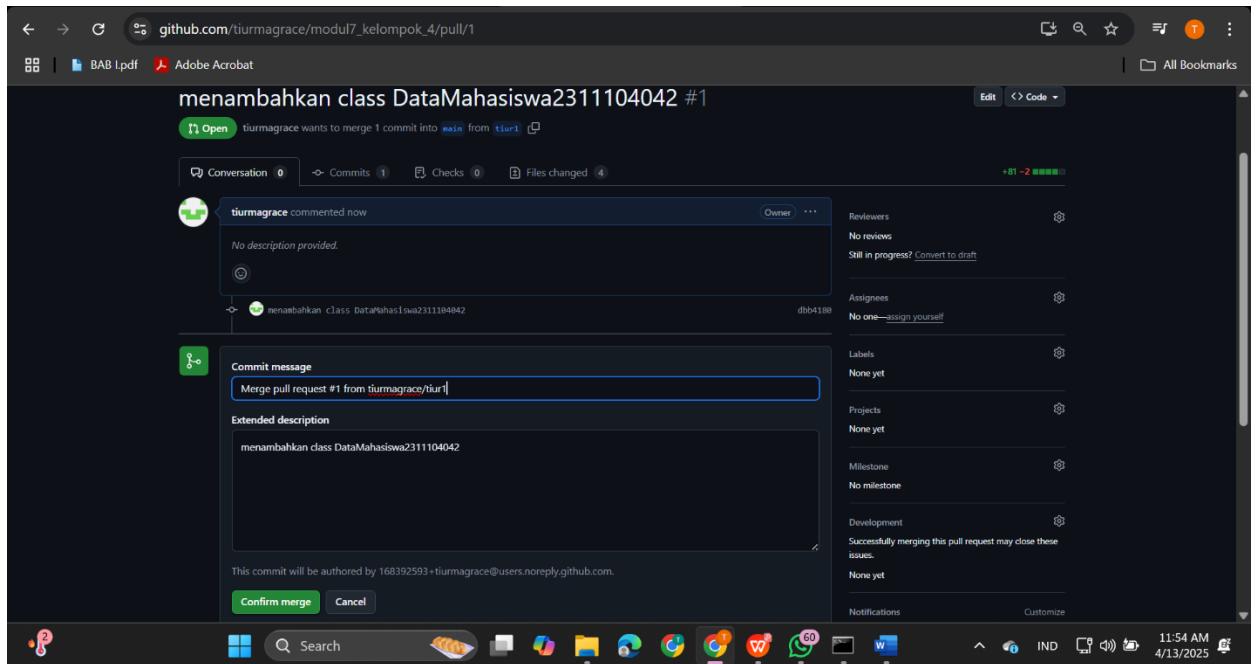
C:\Users\USER\source\repos\modul7_kelompok_4>git commit -m "menambahkan class DataMahasiswa2311104042"
[totur1 dbb4180] menambahkan class DataMahasiswa2311104042
4 files changed, 81 insertions(+), 2 deletions(-)
create mode 100644 modul7_kelompok_4/DataMahasiswa2311104042.cs
create mode 100644 modul7_kelompok_4/jurnal7_1_2311104042.json

C:\Users\USER\source\repos\modul7_kelompok_4>git push origin tiur1
Enumerating objects: 11, done.
Counting objects: 100% (11/11), done.
Delta compression using up to 12 threads
Compressing objects: 100% (7/7), done.
Writing objects: 100% (7/7), 1.48 KiB | 505.00 KiB/s, done.
Total 7 (delta 2), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (2/2), completed with 2 local objects.
remote:
remote: Create a pull request for 'tiur1' on GitHub by visiting:
remote:   https://github.com/tiurmagrace/modul7_kelompok_4/pull/new/tiur1
remote:
To https://github.com/tiurmagrace/modul7_kelompok_4.git
 * [new branch]      tiur1 -> tiur1

C:\Users\USER\source\repos\modul7_kelompok_4>
```

Pull dan Merge





3. MENAMBAHKAN JSON DESERIALIZATION 2

Branch 2

```

C:\WINDOWS\system32\cmd.exe
*****
** Visual Studio 2022 Developer Command Prompt v17.13.0
** Copyright (c) 2022 Microsoft Corporation
*****

C:\Users\USER\source\repos\modul7_kelompok_4>git checkout -b tiur2
Switched to a new branch 'tiur2'

C:\Users\USER\source\repos\modul7_kelompok_4>git branch
main
tiur1
* tiur2

```

Code Class :

1. jurnal7_2_2311104042.json

```

{
  "members": [
    {
      "firstName": "Tiurma Grace Angelina",
      "lastName": "Sihaloho",
      "gender": "female",
      "age": 19,
      "nim": "2311104042"
    },
    {
      "firstName": "farhan",
      "lastName": "kurniawan",
      "gender": "male",
      "age": 19,
      "nim": "2311104073"
    }
  ]
}

```

```

    },
    {
        "firstName": "marvel",
        "lastName": "Sanjaya",
        "gender": "male",
        "age": 19,
        "nim": "2311104053"
    },
    {
        "firstName": "candra",
        "lastName": "dinata",
        "gender": "male",
        "age": 19,
        "nim": "2311104061"
    },
    {
        "firstName": "riyo",
        "lastName": "valentino",
        "gender": "male",
        "age": 19,
        "nim": "456754674"
    }
]
}

```

2. TeamMembers2311104042.cs

```

using System;
using System.Collections.Generic;
using System.IO;
using System.Text.Json;

public class TeamMembers2311104042
{
    public class Member
    {
        public string firstName { get; set; }
        public string lastName { get; set; }
        public string gender { get; set; }
        public int age { get; set; }
        public string nim { get; set; }
    }

    public class MembersData
    {
        public List<Member> members { get; set; }
    }
}

```

```

public static void ReadJSON()
{
    try
    {
        string filePath = "jurnal7_2_2311104042.json";
        string jsonString = File.ReadAllText(filePath);

        MembersData data =
        JsonSerializer.Deserialize<MembersData>(jsonString);

        Console.WriteLine("Team member list:");
        foreach (var m in data.members)
        {
            Console.WriteLine($"{m.nim} {m.firstName} {m.lastName} ({m.age}
{m.gender})");
        }
    }
    catch (Exception ex)
    {
        Console.WriteLine("Gagal membaca file JSON: " + ex.Message);
    }

    Console.ReadLine();
}
}

```

3. Program.cs

```

class Program
{
    static void Main(string[] args)
    {
        DataMahasiswa2311104042.ReadJSON();
        TeamMembers2311104042.ReadJSON();
    }
}

```

Output :


```
Microsoft Visual Studio Debug Console

===== DATA MAHASISWA =====
Nama: Tiurma Grace Angelina
Jenis Kelamin: female
Umur: 19
Alamat: Arcawinangun, Purwokerto, Central Java

Mata Kuliah yang Diambil:
MK 1: CR12C4 - Konstruksi Perangkat Lunak
MK 2: CR12C3 - Pemodelan Perangkat Lunak

Team member list:
2311104042 Tiurma Grace Angelina Sihalohe (19 female)
2311104073 Farhan kurniawan (19 male)
2311104053 marvel Sanjaya (19 male)
2311104061 candra dinata (19 male)
456754674 riyo valentino (19 male)

C:\Users\USER\source\repos\modul7_kelompok_4\modul7_kelompok_4\bin\Debug\net8.0\modul7_kelompok_4.exe (process 4648) exited with code 0 (0x0).
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .
```

Commit :

```
C:\WINDOWS\system32\cmd.exe
C:\Users\USER\source\repos\modul7_kelompok_4>git branch
  main
* tiur1
+ tiur2

C:\Users\USER\source\repos\modul7_kelompok_4>git add jurnal7_2_2311104042.json TeamMembers2311104042.cs Program.cs
fatal: pathspec 'jurnal7_2_2311104042.json' did not match any files

C:\Users\USER\source\repos\modul7_kelompok_4>cd modul7_kelompok_4

C:\Users\USER\source\repos\modul7_kelompok_4\modul7_kelompok_4>git add jurnal7_2_2311104042.json TeamMembers2311104042.cs Program.cs
warning: in the working copy of 'modul7_kelompok_4/jurnal7_2_2311104042.json', LF will be replaced by CRLF the next time Git touches it

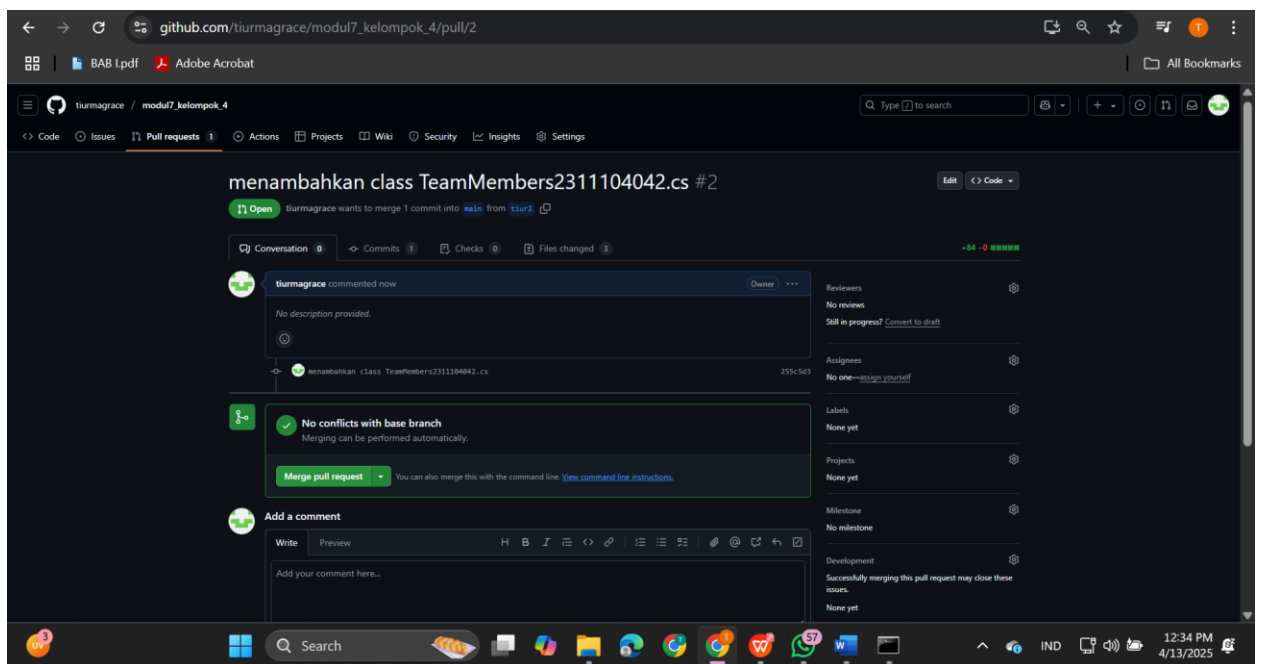
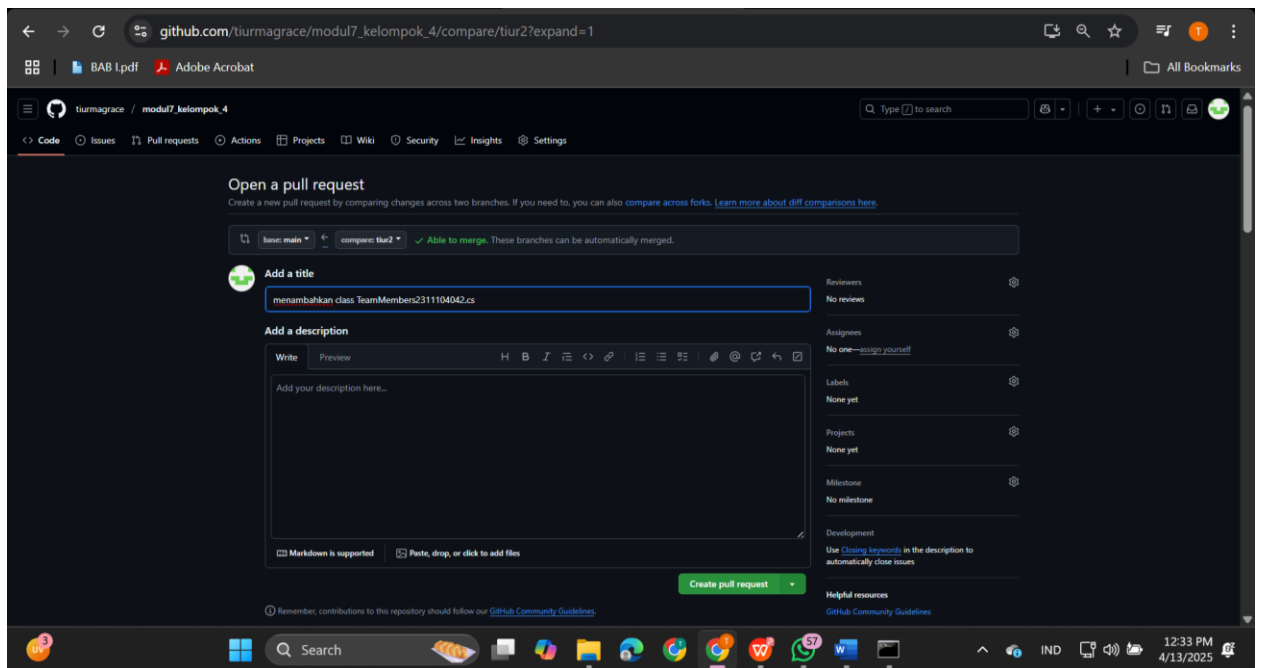
C:\Users\USER\source\repos\modul7_kelompok_4\modul7_kelompok_4>git commit -m "menambahkan class TeamMembers2311104042.cs"
[tiur2 255c5d3] menambahkan class TeamMembers2311104042.cs
3 files changed, 84 insertions(+)
create mode 100644 modul7_kelompok_4/TeamMembers2311104042.cs
create mode 100644 modul7_kelompok_4/jurnal7_2_2311104042.json

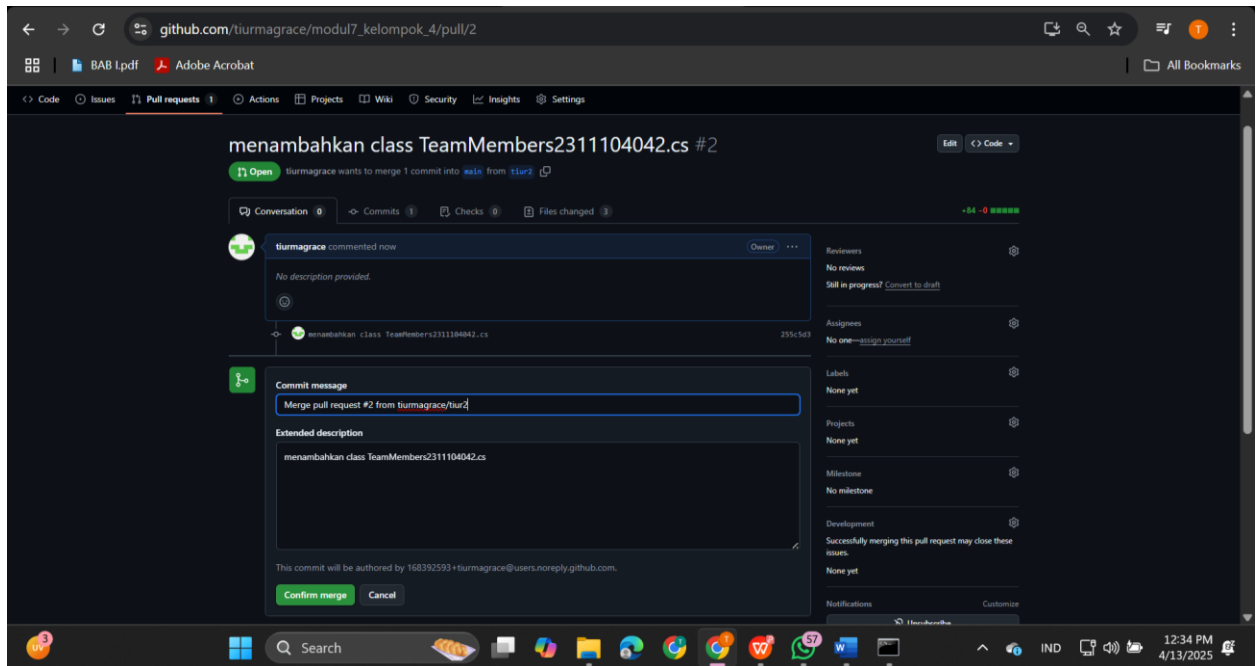
C:\Users\USER\source\repos\modul7_kelompok_4\modul7_kelompok_4>git push origin tiur2
error: src refspec tiur does not match any
error: src refspec 2 does not match any
error: failed to push some refs to 'https://github.com/tiurmagrace/modul7_kelompok_4.git'

C:\Users\USER\source\repos\modul7_kelompok_4\modul7_kelompok_4>git push origin tiur2
Enumerating objects: 9, done.
Counting objects: 100% (9/9), done.
Delta compression using up to 12 threads
Compressing objects: 100% (6/6), done.
Writing objects: 100% (6/6), 1.27 KiB | 433.00 KiB/s, done.
Total 6 (delta 2), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (2/2), completed with 2 local objects.
remote:
remote: Create a pull request for 'tiur2' on GitHub by visiting:
remote:   https://github.com/tiurmagrace/modul7_kelompok_4/pull/new/tiur2
remote:
To https://github.com/tiurmagrace/modul7_kelompok_4.git
 * [new branch]      tiur2 -> tiur2

C:\Users\USER\source\repos\modul7_kelompok_4\modul7_kelompok_4>
```

Pull dan Merge :





Penjelasan Keseluruhan :

1. DataMahasiswa2311104042.cs

Tujuan:

Untuk membaca dan menampilkan data mahasiswa dari file JSON pertama (jurnal7_1_2311104042.json).

Struktur Kelas:

- Address: Menyimpan informasi alamat mahasiswa.
- Course: Menyimpan data mata kuliah (kode dan nama).
- Mahasiswa: Representasi keseluruhan data mahasiswa (nama, umur, alamat, dan mata kuliah).
- ReadJSON(): Fungsi untuk membaca file JSON, mendeserialisasi menjadi objek Mahasiswa, lalu menampilkannya ke console.

Inti:

```
string jsonString = File.ReadAllText(filePath);
```

```
Mahasiswa mhs = JsonSerializer.Deserialize<Mahasiswa>(jsonString);
```

2. TeamMembers2311104042.cs

Tujuan:

Untuk menampilkan daftar anggota kelompok dari file JSON kedua (jurnal7_2_2311104042.json).

Struktur Kelas:

- Member: Representasi satu anggota (nama, umur, gender, NIM).
- MembersData: Representasi seluruh data yang memiliki properti members (list of Member).
- ReadJSON(): Fungsi untuk membaca file JSON, mendeserialisasi ke objek MembersData, lalu menampilkannya ke console.

Inti:

```
MembersData data = JsonSerializer.Deserialize<MembersData>(jsonString);
```

```
foreach (var m in data.members) { ... }
```

Fitur tambahan:

- Menggunakan blok try-catch untuk menangani error jika file tidak ditemukan atau rusak.

3. Program.cs

Tujuan:

Sebagai titik masuk utama (entry point) program.

Fungsi:

- Menjalankan ReadJSON() dari kedua class:

```
DataMahasiswa2311104042.ReadJSON();
```

```
TeamMembers2311104042.ReadJSON();
```

4. jurnal7_1_2311104042.json

JSON ini merepresentasikan data satu mahasiswa lengkap dengan alamat dan daftar mata kuliah yang diambil.

Struktur:

```
{  
  "firstName": "Tiurma Grace",
```

```
"lastName": "Angelina",
"gender": "female",
"age": 19,
"address": {
  "streetAddress": "Arcawinangun",
  "city": "Purwokerto",
  "state": "Central Java"
},
"courses": [
  { "code": "CRI2C4", "name": "Konstruksi Perangkat Lunak" },
  { "code": "CRI2C3", "name": "Pemodelan Perangkat Lunak" }
]
}
```

Penjelasan:

- firstName, lastName, gender, age → data dasar mahasiswa.
- address → nested object yang berisi:
 - streetAddress, city, state → detail alamat.
- courses → array yang berisi daftar mata kuliah yang diambil:
 - Setiap elemen punya code dan name.

5. jurnal7_2_2311104042.json

JSON ini berisi daftar anggota kelompok, masing-masing dengan data pribadi.

Struktur:

```
{
  "members": [
    {
      "firstName": "Tiurma Grace Angelina",
```

```

        "lastName": "Sihaloho",
        "gender": "female",
        "age": 19,
        "nim": "2311104042"
    },
    {
        "firstName": "farhan",
        "lastName": "kurniawan",
        "gender": "male",
        "age": 19,
        "nim": "2311104073"
    },
    ...
]
}

```

Penjelasan:

- members → array yang menyimpan data tiap anggota.
- Setiap anggota punya:
 - firstName, lastName, gender, age, dan nim.

Kesimpulan:

- DataMahasiswa2311104042.cs → menampilkan data pribadi + kuliah seorang mahasiswa.
- TeamMembers2311104042.cs → menampilkan data semua anggota kelompok.
- Program.cs → menggabungkan dan menampilkan hasil dari kedua class di atas.