

JURNAL
KONSTRUKSI PERANGKAT LUNAK
PERTEMUAN 5
GRAMMAR-BASED INPUT PROCESSING (PARSING)



Dibuat Oleh :

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SE0601

PROGRAM STUDI S1 SOFTWARE ENGINEERING

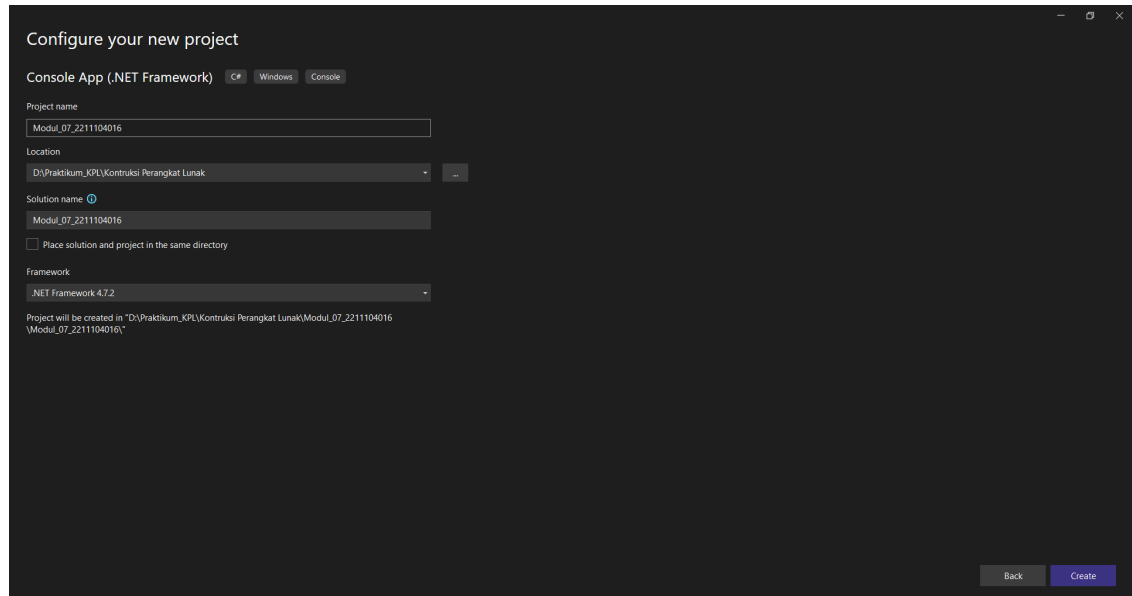
FAKULTAS INFORMATIKA

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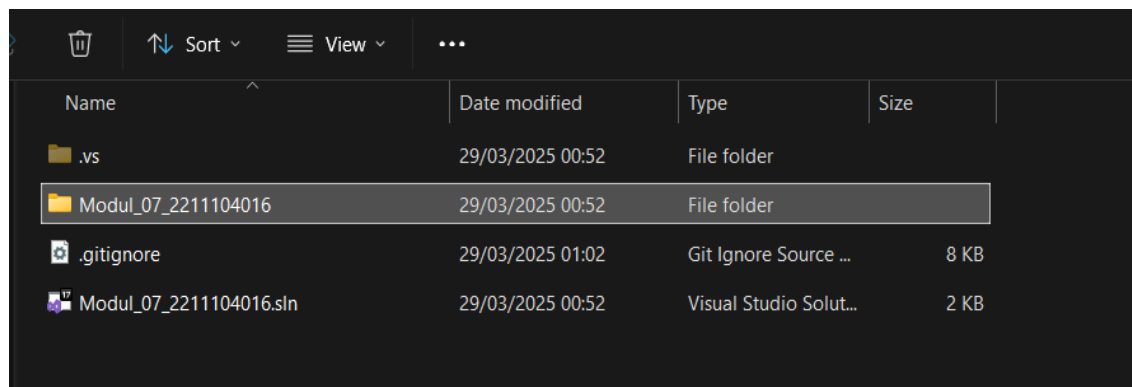
2025

1. Pembuatan github repo dan project baru

- Membuat Project baru



- Menambahkan file gitignore pada project



- Melakukan commit

```
Idham@LAPTOP-9DA4K8Q8 MINGW64 /d/Praktikum_KPL/Praktikum_KPL (main)
$ git commit -m "frist commit"
[main (root-commit) 6f17511] frist commit
8 files changed, 651 insertions(+)
create mode 100644 Jurnal07/.gitignore
create mode 100644 Jurnal07/Jurnal07.sln
create mode 100644 Jurnal07/Jurnal07/App.config
create mode 100644 Jurnal07/Jurnal07/Jurnal07.csproj
create mode 100644 Jurnal07/Jurnal07/Program.cs
create mode 100644 Jurnal07/Jurnal07/Properties/AssemblyInfo.cs
create mode 100644 Jurnal07/Jurnal07/jurnal7_1_2211104016.json
create mode 100644 Jurnal07/Jurnal07/packages.config
```

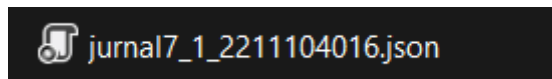
2. MENAMBAHKAN JSON DESERIALIZATION 1

- Membuat Branch Baru

```
Idham@LAPTOP-9DA4K8Q8 MINGW64 /d/Praktikum_KPL/Praktikum_KPL (main)
$ git branch idham_jurnal

Idham@LAPTOP-9DA4K8Q8 MINGW64 /d/Praktikum_KPL/Praktikum_KPL (main)
$ git checkout idham_jurnal
Switched to branch 'idham_jurnal'
```

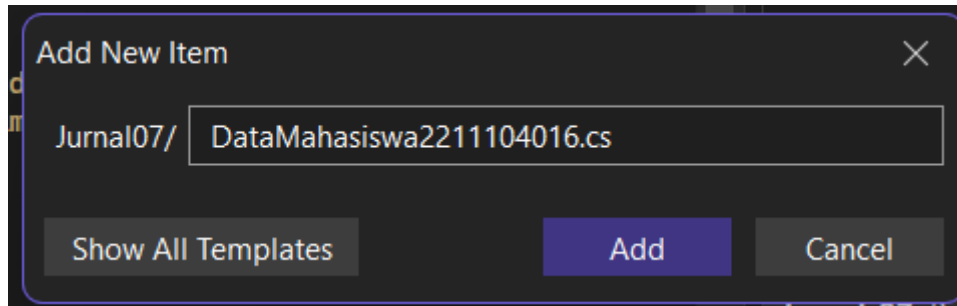
- Download file Jurnal7_1_nim.json dan mengganti dengan nim
kita kemudian pindahkan file json pada folder solution project



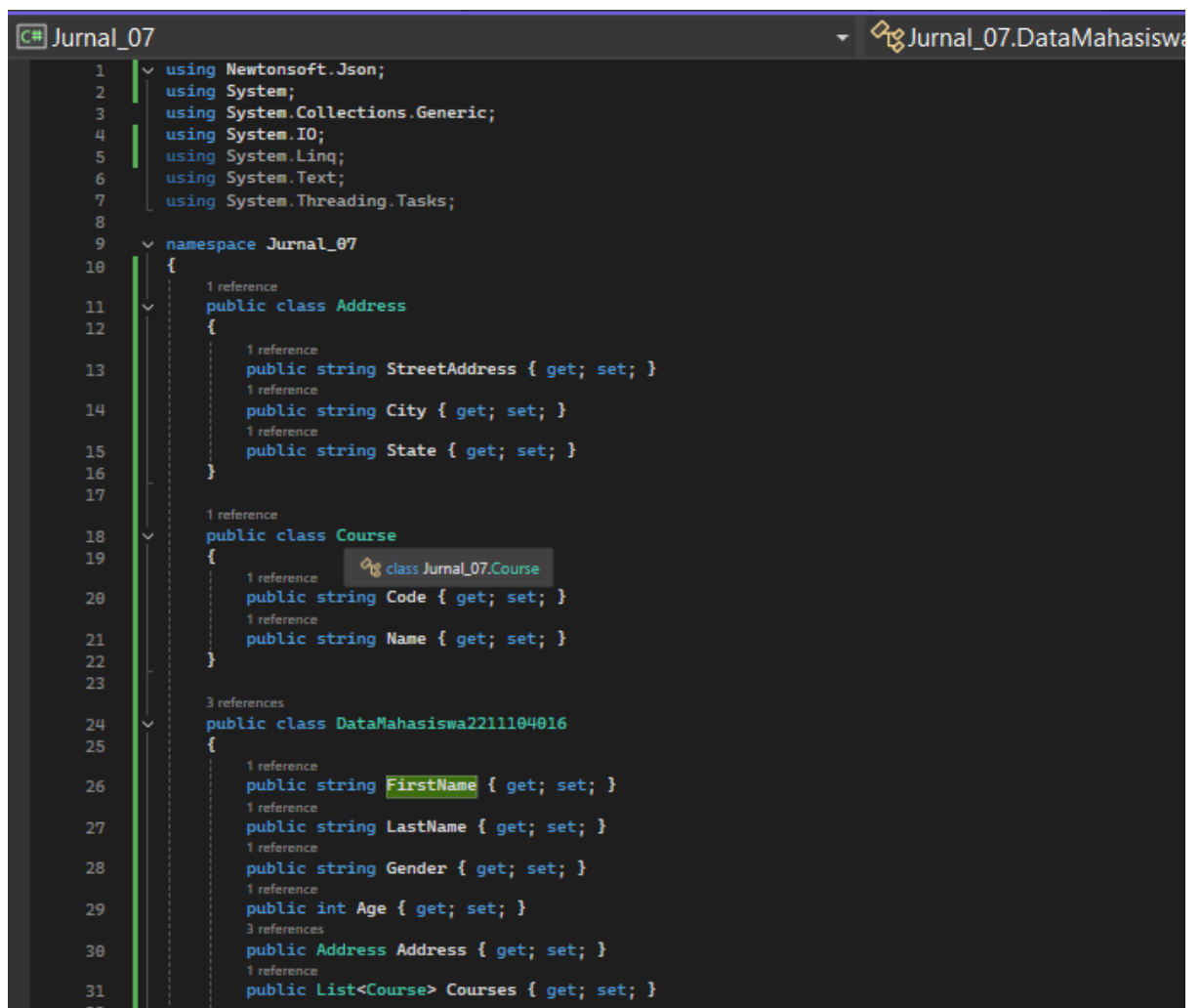
- Menganti isi dari file json sesuai perintah modul

```
{
  "firstName": "Muhammad",
  "lastName": "Idham Cholid",
  "gender": "male",
  "age": 25,
  "address": {
    "streetAddress": "Karandadap",
    "city": "Pekalongan",
    "state": "Paris van java"
  },
  "courses": [
    {
      "code": "CRI2C4",
      "name": "Konstruksi Perangkat Lunak"
    },
    {
      "code": "CRI2XX",
      "name": "Sistem Operasi"
    }
  ]
}
```

- membuat sebuah file class baru dengan nama nama
“DataMahasiswa<NIM_PRAKTIKAN>”.



- Membuat method method “ReadJSON() yang melakukan
parsing untuk file json



- Pada method tersebut, lakukan print hasil deserialisasi dari object yang dibuat dengan format bebas asalkan semua nilai ditampilkan

```
1  using System;
2  using System.Collections.Generic;
3  using System.Linq;
4  using System.Text;
5  using System.Threading.Tasks;
6
7  namespace Jurnal_07
8  {
9      class Program
10     {
11         static void Main(string[] args)
12         {
13             DataMahasiswa2211104016.ReadJSON();
14         }
15     }
16 }
17
```

Output

```
==== Data Mahasiswa ====
Nama: Muhammad Idham Cholid
Jenis Kelamin: male
Umur: 25
Alamat: Karandadap, Pekalongan, Paris van java

Mata Kuliah:
- CRI2C4: Konstruksi Perangkat Lunak
- CRI2XX: Sistem Operasi
```

Penjelasan

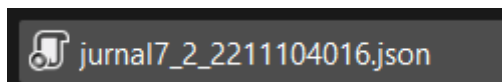
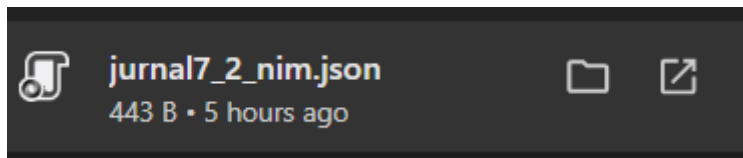
Program ini digunakan untuk membaca file Json yang berisi data mahasiswa yang mengubahnya menjadi objek menggunakan JsonConvert.DeserializeObject. Data mahasiswa, termasuk alamat dan daftar mata kuliah, dan menampilkan hasilnya. Program berhasil memproses JSON dan menampilkan informasi mahasiswa

- Melakukan Commit

```
Idham@LAPTOP-9DA4K8Q8 MINGW64 /d/Praktikum_KPL/Praktikum_KPL (idham_jurnal)
$ git commit -m "menambahkan class DataMahasiswa2211104016"
On branch idham_jurnal
nothing to commit, working tree clean
```

3. MENAMBAHKAN JSON DESERIALIZATION 2

- Download file “jurnal7_2_nim.json” dan rename file tersebut dengan mengganti “nim” dengan NIM praktikan kemudian pindahkan file json tersebut di folder solution projectnya.

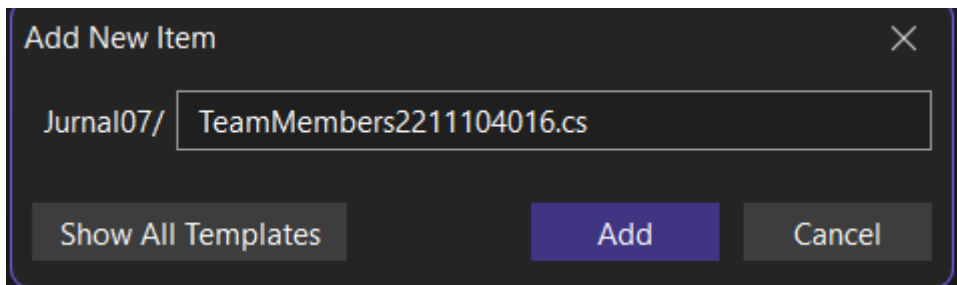


| Name | Date modified | Type | Size |
|----------------------------|------------------|-----------------------|------|
| obj | 29/03/2025 01:59 | File folder | |
| Properties | 29/03/2025 01:59 | File folder | |
| App.config | 29/03/2025 02:11 | XML Configuration... | 1 KB |
| DataMahasiswa2211104016.cs | 29/03/2025 03:18 | C# Source File | 2 KB |
| Jurnal_07.csproj | 29/03/2025 05:39 | VisualStudio.Launc... | 7 KB |
| jurnal7_1_2211104016.json | 29/03/2025 03:15 | JSON File | 1 KB |
| jurnal7_2_2211104016.json | 29/03/2025 05:51 | JSON File | 1 KB |
| packages.config | 29/03/2025 02:11 | XML Configuration... | 2 KB |
| Program.cs | 29/03/2025 05:57 | C# Source File | 1 KB |
| TeamMember2211104016.cs | 29/03/2025 05:59 | C# Source File | 2 KB |

- Ubah isi dari file json tersebut dengan daftar anggota kelompok (untuk tubes).

```
{
  "members": [
    {
      "firstName": "fauzan",
      "lastName": "zan",
      "gender": "male",
      "age": 23,
      "nim": "2211104019"
    },
    {
      "firstName": "Idham",
      "lastName": "damjo",
      "gender": "male",
      "age": 32,
      "nim": "2211104016"
    },
    {
      "firstName": "Hanifa",
      "lastName": "Fa",
      "gender": "female",
      "age": 21,
      "nim": "2211104018"
    },
    {
      "firstName": "Altha",
      "lastName": "Al",
      "gender": "female",
      "age": 21,
      "nim": "2211104013"
    }
  ]
}
```

- Buatlah sebuah file class baru dengan nama
“TeamMembers<NIM_PRAKTIKAN>”.



Add New Item

Jurnal07/ TeamMembers2211104016.cs

Show All Templates Add Cancel

- Buat method “ReadJSON() yang melakukan parsing untuk file tersebut menjadi object sesuai.

```

C# Jurnal_07
1 using Newtonsoft.Json;
2 using System;
3 using System.Collections.Generic;
4 using System.IO;
5
6 namespace Jurnal_07
7 {
8     1 reference
9     public class Member
10     {
11         1 reference
12         public string NIM { get; set; }
13         1 reference
14         public string FirstName { get; set; }
15         1 reference
16         public string LastName { get; set; }
17         1 reference
18         public int Age { get; set; }
19         1 reference
20         public string Gender { get; set; }
21     }
22
23     4 references
24     public class TeamMembers2211104016
25     {
26         3 references
27         public List<Member> Members { get; set; }
28
29         1 reference
30         public void ReadJSON()
31         {
32             try
33             {
34                 string filePath = "jurnal7_2_2211104016.json";
35
36                 if (!File.Exists(filePath))
37                 {
38                     Console.WriteLine("File JSON tidak ditemukan.");
39                     return;
40                 }
41
42                 string jsonContent = File.ReadAllText(filePath);
43
44                 TeamMembers2211104016 team = JsonConvert.DeserializeObject<TeamMembers2211104016>(jsonContent);
45
46                 if (team?.Members == null || team.Members.Count == 0)
47                 {
48                     Console.WriteLine("Tidak ada data anggota tim.");
49                     return;
50                 }
51
52                 Console.WriteLine("Team member list:");
53                 foreach (var member in team.Members)
54                 {
55                     Console.WriteLine($"{member.NIM} {member.FirstName} {member.LastName} ({member.Age} {member.Gender})");
56                 }
57             }
58             catch (Exception ex)
59             {
60                 Console.WriteLine($"Error reading JSON: {ex.Message}");
61             }
62         }
63     }
64 }

```

- Pada method tersebut, lakukan print hasil deserialisasi dari object yang dibuat

```

C# Jurnal_07
1 using Newtonsoft.Json;
2 using System;
3 using System.Collections.Generic;
4
5 namespace Jurnal_07
6 {
7     0 references
8     class Program
9     {
10         0 references
11         static void Main(string[] args)
12         {
13             TeamMembers2211104016 team = new TeamMembers2211104016();
14             team.ReadJSON();
15         }
16     }
17 }

```


Penjelasan

Program di atas digunakan untuk membaca dan menampilkan data anggota tim dari sebuah file JSON, Class Member berfungsi sebagai model data dengan properti NIM, FirstName, LastName, Age, dan Gender, sementara TeamMembers2211104016 menyimpan daftar objek Member dalam bentuk list (List<Member>). Method ReadJSON() pada class TeamMembers2211104016 membaca file JSON bernama jurnal7_2_2211104016.json menggunakan JsonConvert.DeserializeObject. Jika file tidak ditemukan atau format JSON tidak valid, program akan menampilkan pesan kesalahan. Program juga memastikan data tidak kosong sebelum mencetak daftar anggota tim

4. MELAKUKAN COMMIT

Pada branch yang dibuat sebelumnya:

- Lakukan commit dengan pesan “menambahkan class <NAMA_CLASS>”.

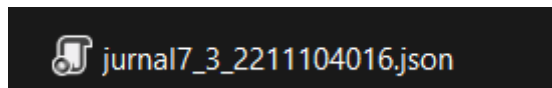
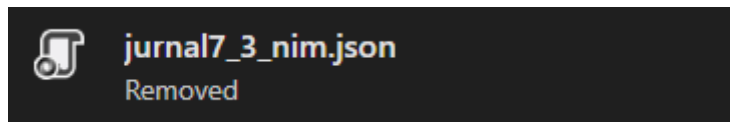
```
Idham@LAPTOP-9DA4K8Q8 MINGW64 /d/Praktikum_KPL/Praktikum_KPL (idham_jurnal)
$ git commit -m "menambahkan clas TeamMembers2211104016"
On branch idham_jurnal
nothing to commit, working tree clean
```

- Lakukan push ke github ke branch yang dibuat di bagian sebelumnya.

```
Idham@LAPTOP-9DA4K8Q8 MINGW64 /d/Praktikum_KPL/Praktikum_KPL (idham_jurnal)
$ git push origin idham_jurnal
Everything up-to-date
```

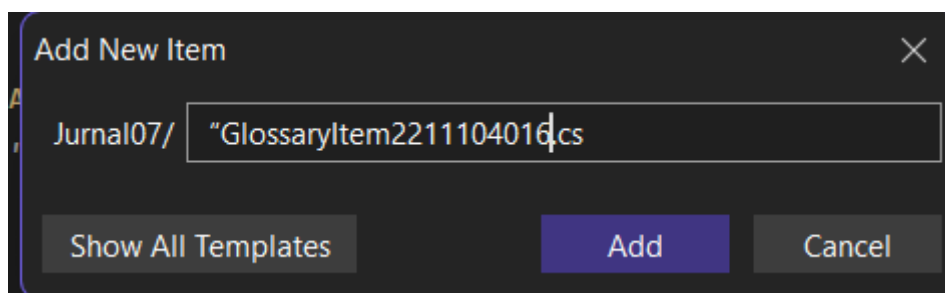
5. MENAMBAHKAN JSON DESERIALIZATION 3

- Download file “jurnal7_3_nim.json” dan rename file tersebut dengan mengganti “nim” dengan NIM praktikan kemudian pindahkan file json tersebut di folder solution projectnya.



| Name | Date modified | Type | Size |
|----------------------------|------------------|-----------------------|------|
| .vs | 29/03/2025 05:29 | File folder | |
| bin | 29/03/2025 02:47 | File folder | |
| obj | 29/03/2025 01:59 | File folder | |
| Properties | 29/03/2025 01:59 | File folder | |
| App.config | 29/03/2025 02:11 | XML Configuration... | 1 KB |
| DataMahasiswa2211104016.cs | 29/03/2025 03:18 | C# Source File | 2 KB |
| Jurnal_07.csproj | 29/03/2025 06:25 | VisualStudio.Launc... | 8 KB |
| jurnal7_1_2211104016.json | 29/03/2025 03:15 | JSON File | 1 KB |
| jurnal7_2_2211104016.json | 29/03/2025 05:51 | JSON File | 1 KB |
| jurnal7_3_2211104016.json | 29/03/2025 06:25 | JSON File | 1 KB |
| packages.config | 29/03/2025 02:11 | XML Configuration... | 2 KB |
| Program.cs | 29/03/2025 06:11 | C# Source File | 1 KB |
| TeamMembers2211104016.cs | 29/03/2025 06:12 | C# Source File | 2 KB |
| "GlossaryItem2211104016.cs | 29/03/2025 06:33 | C# Source File | 1 KB |

- Buatlah sebuah file class baru dengan nama “GlossaryItem<NIM_PRAKTIKAN>”.



- Buat method “ReadJSON() yang melakukan parsing untuk file tersebut menjadi object sesuai.

```
using System.Text.Json.Serialization;

1 reference
✓ public class GlossaryItem12345
{
    [JsonPropertyName("glossary")]
    1 reference
    public Glossary Glossary { get; set; }
}

1 reference
✓ public class Glossary
{
    [JsonPropertyName("title")]
    0 references
    public string Title { get; set; }

    [JsonPropertyName("GlossDiv")]
    1 reference
    public GlossDiv GlossDiv { get; set; }
}

1 reference
✓ public class GlossDiv
{
    [JsonPropertyName("title")]
    0 references
    public string Title { get; set; }

    [JsonPropertyName("GlossList")]
    1 reference
    public GlossList GlossList { get; set; }
}

1 reference
✓ public class GlossList
{
    [JsonPropertyName("GlossEntry")]
    1 reference
    public GlossEntry GlossEntry { get; set; }
}

✓ public class GlossEntry
{
    [JsonPropertyName("ID")]
    1 reference
    public string ID { get; set; }

    [JsonPropertyName("SortAs")]
    1 reference
    public string SortAs { get; set; }

    [JsonPropertyName("GlossTerm")]
    1 reference
    public string GlossTerm { get; set; }

    [JsonPropertyName("Acronym")]
    1 reference
    public string Acronym { get; set; }

    [JsonPropertyName("Abbrev")]
    1 reference
    public string Abbrev { get; set; }

    [JsonPropertyName("GlossDef")]
    2 references
    public GlossDef GlossDef { get; set; }

    [JsonPropertyName("GlossSee")]
    1 reference
    public string GlossSee { get; set; }
}

1 reference
✓ public class GlossDef
{
    [JsonPropertyName("para")]
    1 reference
    public string Para { get; set; }

    [JsonPropertyName("GlossSeeAlso")]
    1 reference
    public string[] GlossSeeAlso { get; set; }
}
```

- Pada method tersebut, lakukan print hasil deserialisasi dari object yang dibuat dengan format bebas untuk bagian “GlossEntry”

```

1  using System;
2  using System.IO;
3  using System.Text.Json;
4
5  public class Program
6  {
7      public static void ReadJSON()
8      {
9          string jsonFilePath = "jurnal7_3_2211104016.json";
10
11          try
12          {
13              string jsonString = File.ReadAllText(jsonFilePath);
14
15              var glossaryItem = JsonSerializer.Deserialize<GlossaryItem12345>(jsonString);
16
17              GlossEntry entry = glossaryItem.Glossary.GlossDiv.GlossList.GlossEntry;
18
19              Console.WriteLine("=== GlossEntry ===");
20              Console.WriteLine($"ID: {entry.ID}");
21              Console.WriteLine($"Sort As: {entry.SortAs}");
22              Console.WriteLine($"Term: {entry.GlossTerm}");
23              Console.WriteLine($"Acronym: {entry.Acronym}");
24              Console.WriteLine($"Abbreviation: {entry.Abbrev}");
25              Console.WriteLine($"Definition: {entry.GlossDef.Para}");
26              Console.WriteLine($"See Also: {string.Join(" ", entry.GlossDef.GlossSeeAlso)}");
27              Console.WriteLine($"Gloss See: {entry.GlossSee}");
28              Console.WriteLine("=====");
29          }
30          catch (Exception ex)
31          {
32              Console.WriteLine($"Error reading JSON: {ex.Message}");
33          }
34      }
35
36      public static void Main(string[] args)
37      {
38          ReadJSON();
39      }
40  }

```

Output

```

Microsoft Visual Studio Debug Console
=== GlossEntry ===
ID: SGML
Sort As: SGML
Term: Standard Generalized Markup Language
Acronym: SGML
Abbreviation: ISO 8879:1986
Definition: A meta-markup language, used to create markup languages such as DocBook.
See Also: GML, XML
Gloss See: markup
=====

```

6. MELAKUKAN COMMIT TERAKHIR

- Lakukan commit dengan pesan “menambahkan class <NAMA_CLASS>”.

```
Idham@LAPTOP-9DA4K8Q8 MINGW64 /d/Praktikum_KPL/Praktikum_KPL (idham_jurnal)
$ git commit -m "Menambahkan class GlossaryItem2211104016"
On branch idham_jurnal
nothing to commit, working tree clean
```

- Lakukan push ke github ke branch yang dibuat di bagian sebelumnya.

```
Idham@LAPTOP-9DA4K8Q8 MINGW64 /d/Praktikum_KPL/Praktikum_KPL (idham_jurnal)
$ git push origin idham_jurnal
Everything up-to-date
```