

JURNAL
KONSTRUKSI PERANGKAT LUNAK
PERTEMUAN 8
API DESIGN DAN CONSTRUCTION USING SWAGGER
Modul 09



Dibuat Oleh :

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SE0601

PROGRAM STUDI S1 SOFTWARE ENGINEERING

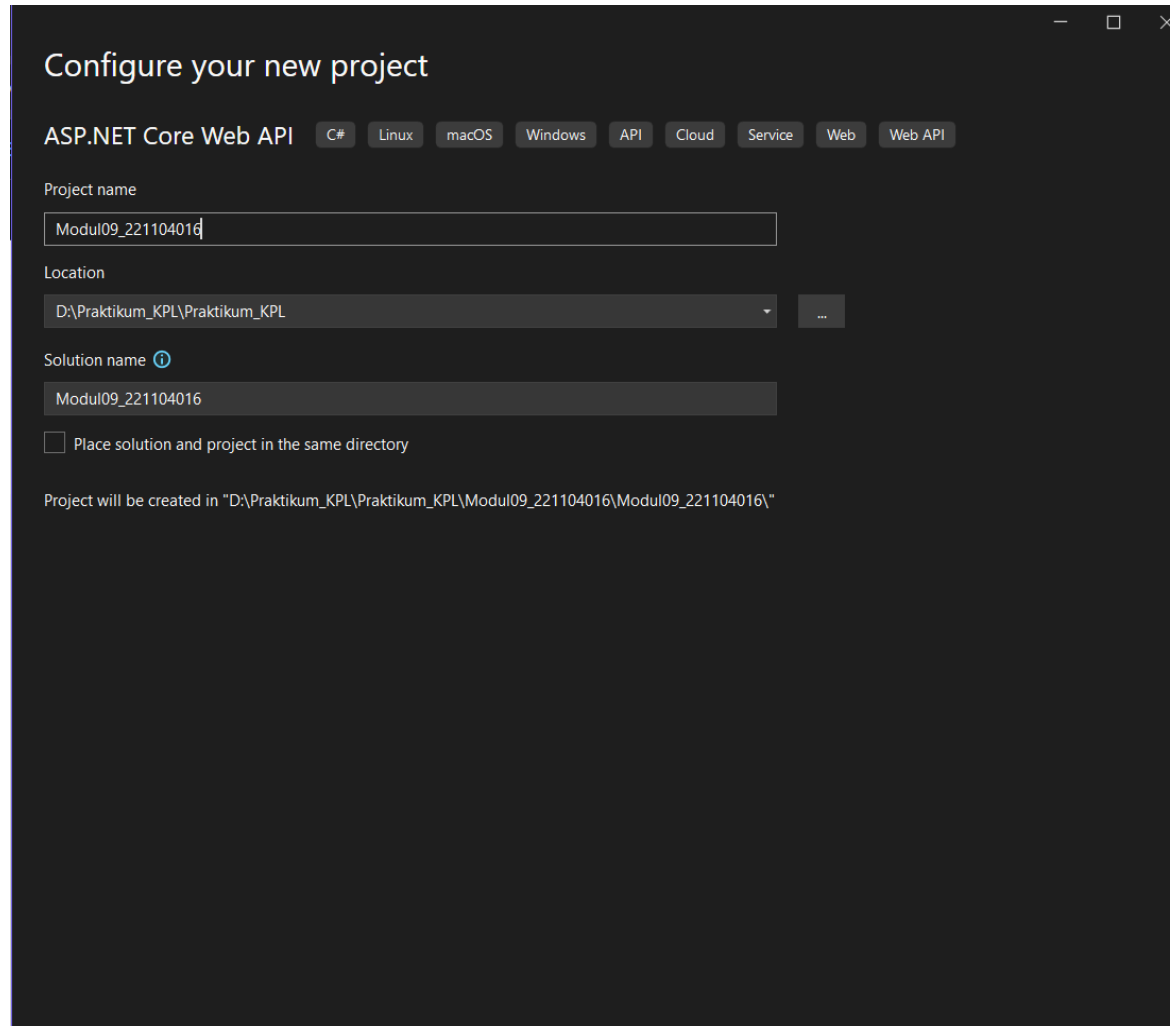
FAKULTAS INFORMATIKA

TELKOM UNIVERSITY PURWOKERTO

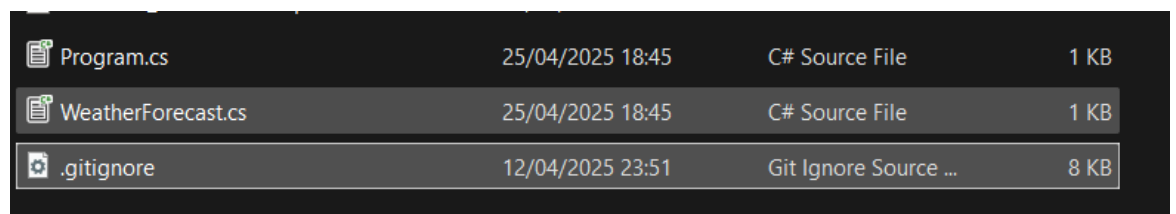
2025

1. MEMBUAT PROJECT WEB API

- Membuat Project baru



- Menambahkan file gitignore pada project



2. MELAKUKAN GIT COMMIT PADA PROJECT

- Melakukan commit

```
Idham@LAPTOP-9DA4K8Q8 MINGW64 /d/Khusus Praktikum/Modul09_221104016
$ git init
Initialized empty Git repository in D:/Khusus Praktikum/Modul09_221104016/.git/

Idham@LAPTOP-9DA4K8Q8 MINGW64 /d/Khusus Praktikum/Modul09_221104016 (main)
$ git add .

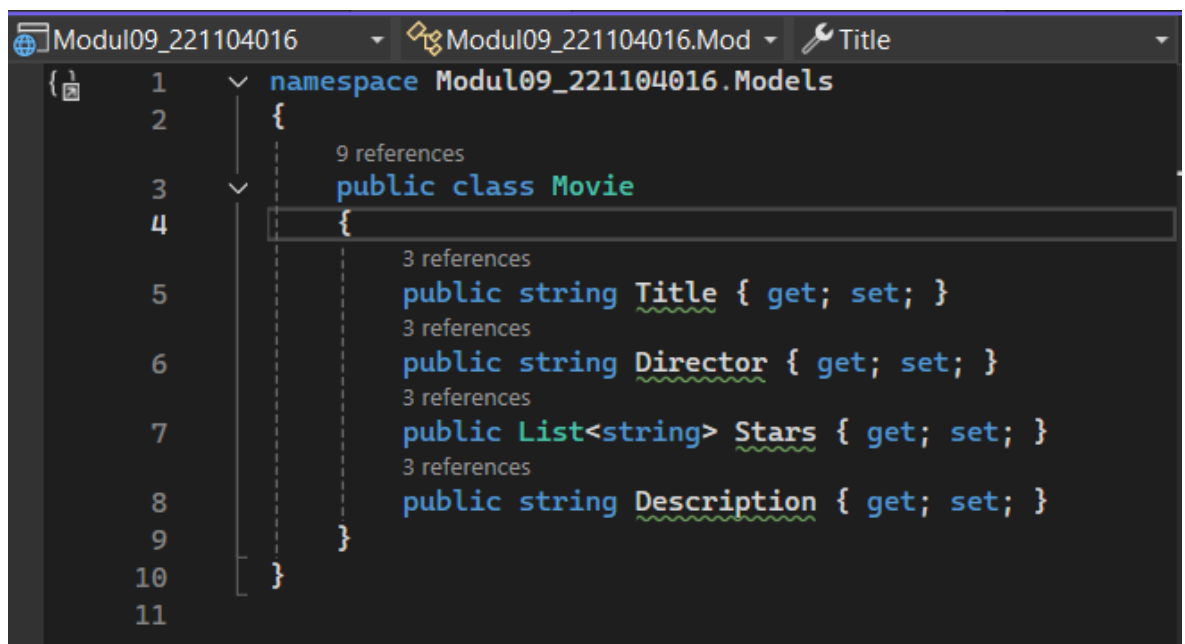
Idham@LAPTOP-9DA4K8Q8 MINGW64 /d/Khusus Praktikum/Modul09_221104016 (main)
$ git commit -m "Membuat project dan menambahkan class"
[main (root-commit) 409f958] Membuat project dan menambahkan class
25 files changed, 1810 insertions(+)
create mode 100644 .vs/Modul09_221104016/DesignTimeBuild/.dtbcache.v2
create mode 100644 .vs/Modul09_221104016/FileContentIndex/0b5aa3e1-bb36-4925-b7
```

- Melakukan Push

```
Idham@LAPTOP-9DA4K8Q8 MINGW64 /d/Khusus Praktikum/Modul09_221104016 (laprak)
$ git push -u origin laprak
Enumerating objects: 41, done.
Counting objects: 100% (41/41), done.
Delta compression using up to 4 threads
Compressing objects: 100% (35/35), done.
Writing objects: 100% (38/38), 103.35 KiB | 2.52 MiB/s, done.
Total 38 (delta 2), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (2/2), done.
To https://github.com/Ridham2345/Praktikum_KPL.git
6885217..96e0ff4 laprak -> laprak
branch 'laprak' set up to track 'origin/laprak'.
```

3. IMPLEMENTASI WEB API

- Movie.cs



```
1 namespace Modul09_221104016.Models
2 {
3     9 references
4     public class Movie
5     {
6         3 references
7         public string Title { get; set; }
8         3 references
9         public string Director { get; set; }
10        3 references
11        public List<string> Stars { get; set; }
12        3 references
13        public string Description { get; set; }
14    }
15 }
```

- MoviesController.cs

```

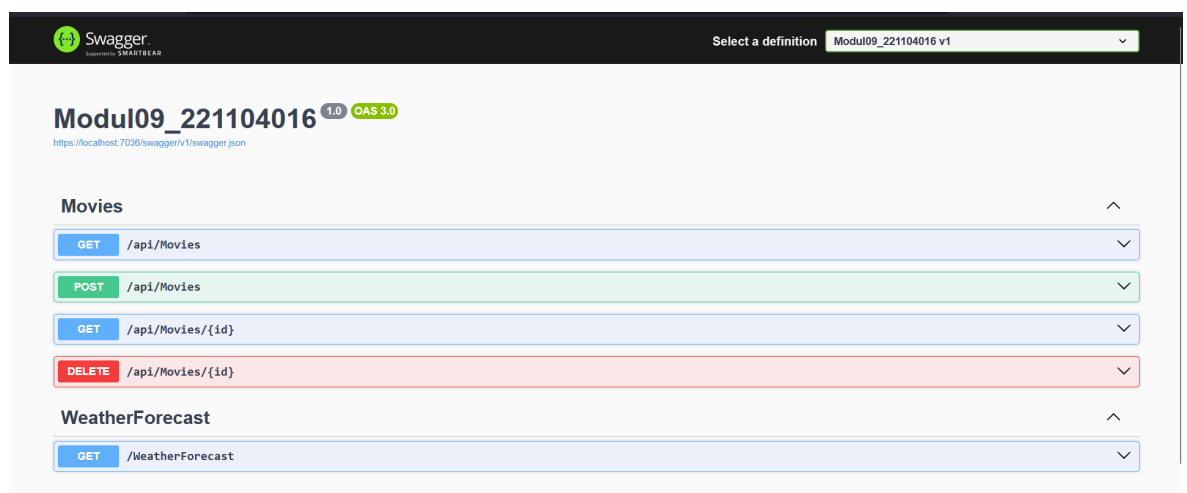
Modul09_221104016
1  using Microsoft.AspNetCore.Mvc;
2  using Modul09_221104016.Models;
3  using System.Collections.Generic;
4  using System.Linq;
5  namespace Modul09_221104016.Controllers
6  {
7      [Route("api/[controller]")]
8      [ApiController]
9      public class MoviesController : ControllerBase
10     {
11         private static List<Movie> _movies = new List<Movie>
12         {
13             new Movie
14             {
15                 Title = "The Shawshank Redemption",
16                 Director = "Frank Darabont",
17                 Stars = new List<string> { "Tim Robbins", "Morgan Freeman" },
18                 Description = "Two imprisoned men bond over a number of years."
19             },
20             new Movie
21             {
22                 Title = "The Godfather",
23                 Director = "Francis Ford Coppola",
24                 Stars = new List<string> { "Marlon Brando", "Al Pacino" },
25                 Description = "The aging patriarch of an organized crime dynasty."
26             },
27             new Movie
28             {
29                 Title = "The Dark Knight",
30                 Director = "Christopher Nolan",
31                 Stars = new List<string> { "Christian Bale", "Heath Ledger" },
32                 Description = "Batman faces the Joker in Gotham City."
33             }
34         };
35         // GET: api/Movies
36         [HttpGet]
37         public ActionResult<IEnumerable<Movie>> GetMovies()
38         {
39             return Ok(_movies);
40         }
41         // GET: api/Movies/5
42         [HttpGet("{id}")]
43         public ActionResult<Movie> GetMovie(int id)
44         {
45             if (id < 0 || id >= _movies.Count)
46                 return NotFound();
47             return Ok(_movies[id]);
48         }
49         // POST: api/Movies
50         [HttpPost]
51         public ActionResult<Movie> PostMovie(Movie movie)
52         {
53             _movies.Add(movie);
54             return CreatedAtAction(nameof(GetMovie), new { id = _movies.Count - 1 }, movie);
55         }
56         // DELETE: api/Movies/5
57         [HttpDelete("{id}")]
58         public IActionResult DeleteMovie(int id)
59         {
60             if (id < 0 || id >= _movies.Count)
61                 return NotFound();
62             _movies.RemoveAt(id);
63             return NoContent();
64         }
65     }
66 }
67

```

- Program.cs

```
Modul09_221104016
1 var builder = WebApplication.CreateBuilder(args);
2
3 // Add services to the container.
4
5 builder.Services.AddControllers();
6 // Learn more about configuring Swagger/OpenAPI at https://aka.ms/aspnetcore/swashbuckle
7 builder.Services.AddEndpointsApiExplorer();
8 builder.Services.AddSwaggerGen();
9
10 var app = builder.Build();
11
12 // Configure the HTTP request pipeline.
13 if (app.Environment.IsDevelopment())
14 {
15     app.UseSwagger();
16     app.UseSwaggerUI();
17 }
18
19 app.UseHttpsRedirection();
20
21 app.UseAuthorization();
22
23 app.MapControllers();
24
25 app.Run();
26
```

Hasil Running



4. MENDEMONSTRASI WEB API

- Mencoba GET /api/Movies → 3 film awal.

Curl

```
curl -X 'GET' \
'http://localhost:5195/api/Movies' \
-H 'accept: text/plain'
```

Request URL

`http://localhost:5195/api/Movies`

Server response

Code	Details
200	<p>Response body</p> <pre>[{ "title": "The Shawshank Redemption", "director": "Frank Darabont", "stars": ["Tim Robbins", "Morgan Freeman"], "description": "Two imprisoned men bond over a number of years." }, { "title": "The Godfather", "director": "Francis Ford Coppola", "stars": ["Marlon Brando", "Al Pacino"], "description": "The aging patriarch of an organized crime dynasty." }, { "title": "The Dark Knight", "director": "Christopher Nolan", "stars": ["Christian Bale", "Heath Ledger"], "description": "Batman faces the Joker in Gotham City." }]</pre> <p>Response headers</p> <pre>content-type: application/json; charset=utf-8 date: Fri,25 Apr 2025 17:17:46 GMT server: Kestrel transfer-encoding: chunked</pre>

- POST /api/Movies → Tambah film ke-4 dari IMDB.

Curl

```
curl -X 'POST' \
'http://localhost:5195/api/Movies' \
-H 'accept: text/plain' \
-H 'Content-Type: application/json' \
-d '{
  "title": "Mr Robot",
  "director": "Eliot",
  "stars": [
    "Eliot alderson"
  ],
  "description": "Ingin Mengubah Dunia "
}'
```

Request URL

`http://localhost:5195/api/Movies`

- GET /api/Movies → Cek lagi, pastikan film baru muncul.

Curl

```
curl -X 'GET' \
  'http://localhost:5195/api/Movies' \
  -H 'accept: text/plain'
```

Request URL

http://localhost:5195/api/Movies

Server response

Code	Details
200	<p>Response body</p> <pre>{ "description": "The aging patriarch of an organized crime dynasty.", }, { "title": "The Dark Knight", "director": "Christopher Nolan", "stars": ["Christian Bale", "Heath Ledger"], "description": "Batman faces the Joker in Gotham City." }, { "title": "string", "director": "string", "stars": ["string"], "description": "string" }, { "title": "Mr Robot", "director": "Eliot", "stars": ["Eliot alderson"], "description": "Ingin Mengubah Dunia " }]</pre> <p>Response headers</p> <pre>content-type: application/json; charset=utf-8 date: Fri,25 Apr 2025 17:27:17 GMT server: Kestrel transfer-encoding: chunked</pre>

- GET /api/Movies/3 → Ambil film baru tadi.

Curl

```
curl -X 'GET' \
  'http://localhost:5195/api/Movies/3' \
  -H 'accept: text/plain'
```

Request URL

http://localhost:5195/api/Movies/3

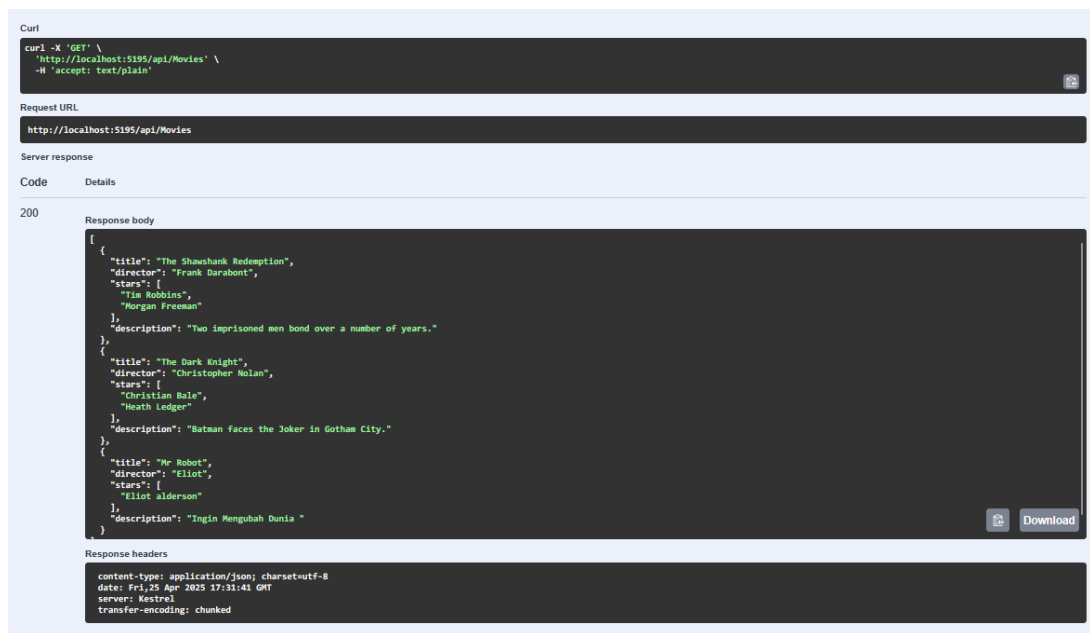
Server response

Code	Details
200	<p>Response body</p> <pre>{ "title": "Mr Robot", "director": "Eliot", "stars": ["Eliot alderson"], "description": "Ingin Mengubah Dunia " }</pre> <p>Response headers</p> <pre>content-type: application/json; charset=utf-8 date: Fri,25 Apr 2025 17:30:31 GMT server: Kestrel transfer-encoding: chunked</pre>

- DELETE /api/Movies/1 → Hapus film index ke-1 (The Godfather).



- GET /api/Movies → Cek, pastikan The Godfather udah hilang. (Kehapus 3 jir)



5. MELAKUKAN COMMIT DAN PUSH

```
Idham@LAPTOP-9DA4K8Q8 MINGW64 /d/Khusus_Praktikum/Modul09_221104016 (laprak)
$ git commit -m "Menambahkan API Movies"
[laprak 31351b0] Menambahkan API Movies
30 files changed, 72 insertions(+), 673 deletions(-)
delete mode 100644 .vs/Modul09_221104016/FileContentIndex/0b5aa3e1-bb36-4925-b710-abe9b5bef4eb.vsidx
delete mode 100644 .vs/Modul09_221104016/FileContentIndex/0d093876-6cc6-4e27-ad3c-a9ab70894815.vsidx
create mode 100644 .vs/Modul09_221104016/FileContentIndex/3fc982c0-1bf6-421d-be83-0f44475f5403.vsidx
delete mode 100644 .vs/Modul09_221104016/FileContentIndex/9ee621cf-f814-4364-aae3-58bfb0132845.vsidx
create mode 100644 .vs/Modul09_221104016/FileContentIndex/a467bf17-5543-471c-98f2-a9166793cffc.vsidx
create mode 100644 .vs/Modul09_221104016/FileContentIndex/a5566323-68b2-455b-af4a-7e4d742c2c1d.vsidx
delete mode 100644 .vs/Modul09_221104016/FileContentIndex/b425fb88-9e70-46cd-a81a-ccb1e95d7ee8.vsidx
create mode 100644 .vs/Modul09_221104016/FileContentIndex/b56173fa-a1fe-481a-88ed-6bb3afc1ab7b.vsidx
create mode 100644 .vs/Modul09_221104016/FileContentIndex/d127bf62-9762-4aac-87c1-cf91666ce6d2.vsidx
delete mode 100644 TP09_2211104016.sln
delete mode 100644 .vs/Modul09_2211104016/.gitignore
delete mode 100644 TP09_2211104016/Controllers/MahasiswaController.cs
delete mode 100644 TP09_2211104016/Controllers/WeatherForecastController.cs
delete mode 100644 TP09_2211104016/Models/Mahasiswa.cs
delete mode 100644 TP09_2211104016/Program.cs
delete mode 100644 TP09_2211104016/Properties/launchSettings.json
delete mode 100644 TP09_2211104016/TP09_2211104016.csproj
delete mode 100644 TP09_2211104016/TP09_2211104016.http
delete mode 100644 TP09_2211104016/WeatherForecast.cs
delete mode 100644 TP09_2211104016/appsettings.Development.json
delete mode 100644 TP09_2211104016/appsettings.json

Idham@LAPTOP-9DA4K8Q8 MINGW64 /d/Khusus_Praktikum/Modul09_221104016 (laprak)
$ git push -u origin laprak
Enumerating objects: 38, done.
Counting objects: 100% (38/38), done.
Delta compression using up to 4 threads
Compressing objects: 100% (20/20), done.
Writing objects: 100% (21/21), 43.30 KiB | 2.06 MiB/s, done.
Total 21 (delta 8), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (8/8), completed with 7 local objects.
To https://github.com/Ridham2345/Praktikum_KPL.git
  96e0ff4...31351b0 laprak -> laprak
branch 'laprak' set up to track 'origin/laprak'.
```