

**JURNAL**  
**KONSTRUKSI PERANGKAT LUNAK**  
**PERTEMUAN 7**  
**Runtime Configuration dan Internationalization**  
**Modul 8**



**Oleh :**

**Muhammad Idham Cholid**

**2211104016**

**SE0601**

**PROGRAM STUDI S1 SOFTWARE ENGINEERING**

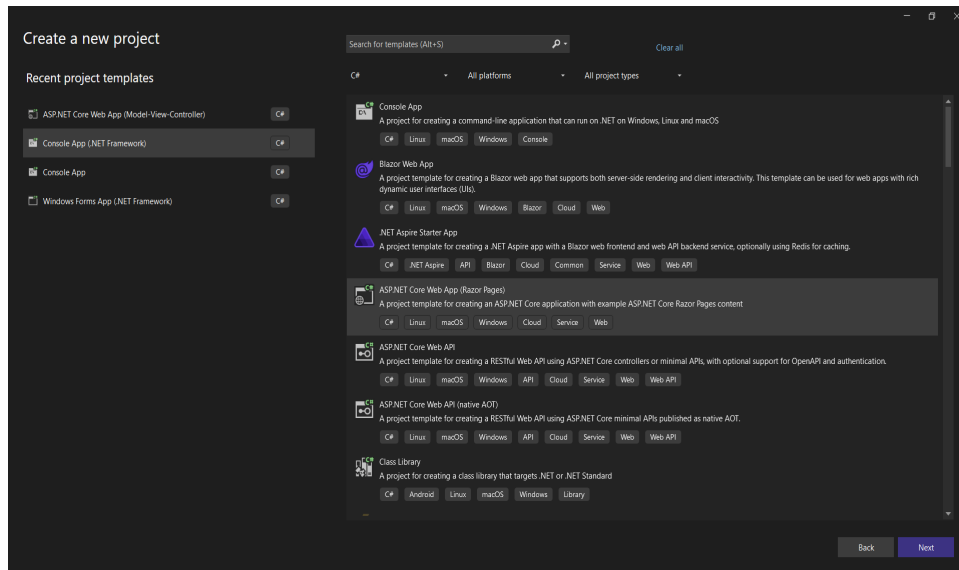
**FAKULTAS INFORMATIKA**

**TELKOM UNIVERSITY PURWOKERTO**

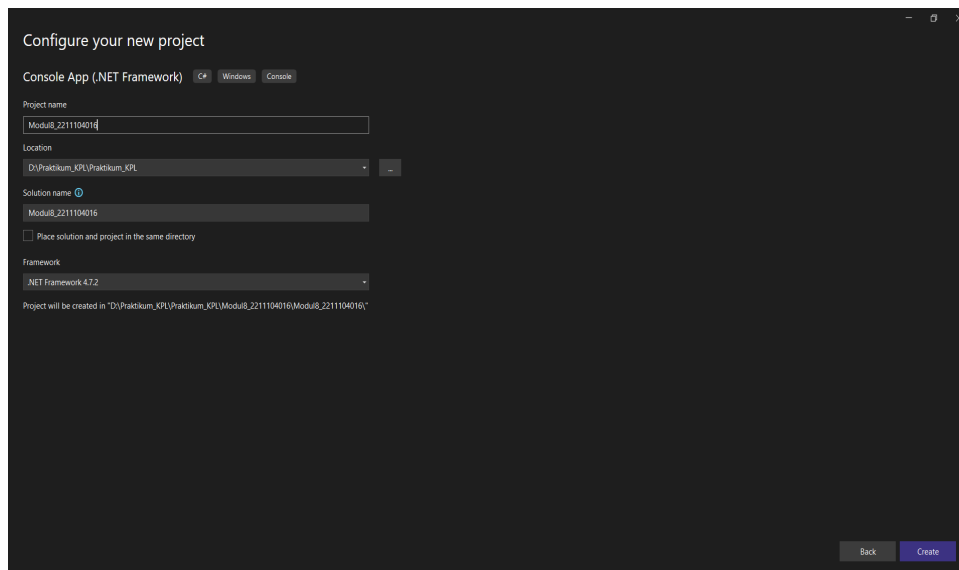
**2025**

## 1. MEMBUAT PROJECT CONSOLE/TANPA GUI

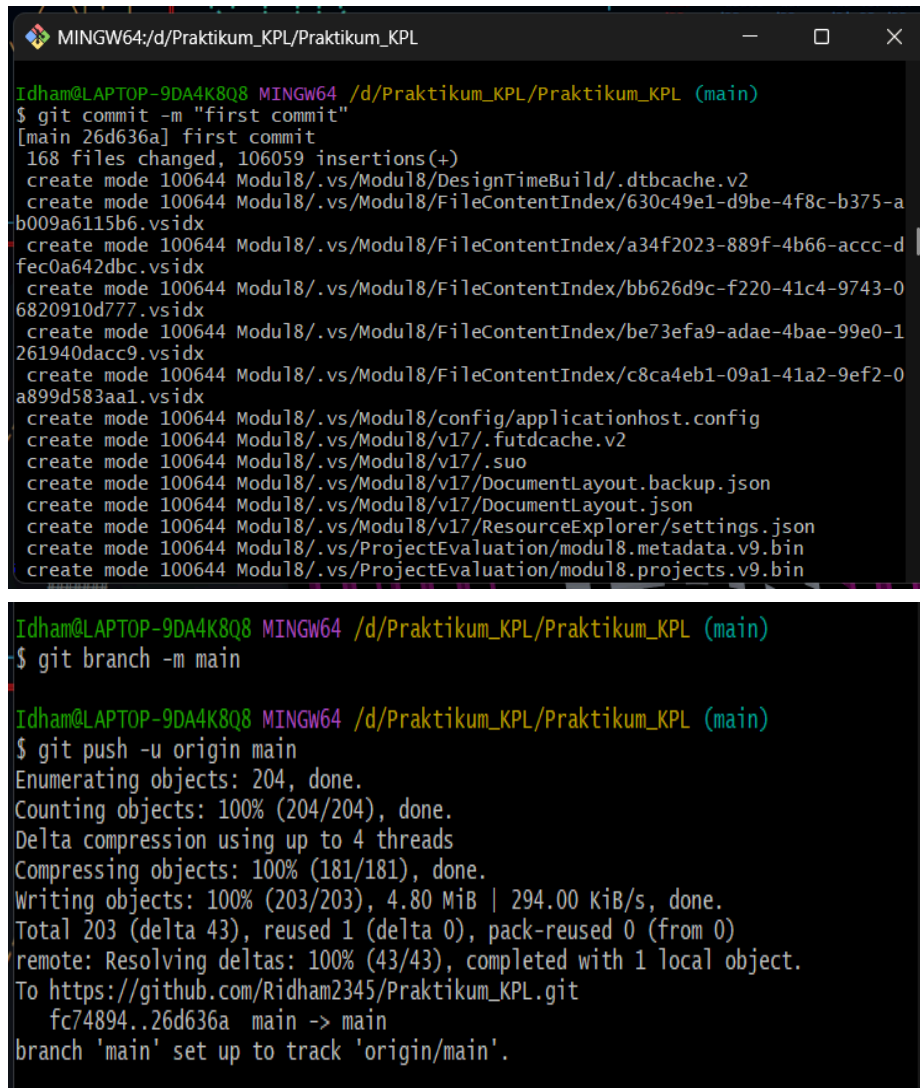
- Membuat Project Baru



- Project yang dibuat dengan nama modul8\_nim



## 2. MELAKUKAN GIT COMMIT DAN PUSH PADA PROJECT



```
MINGW64:/d/Praktikum_KPL/Praktikum_KPL

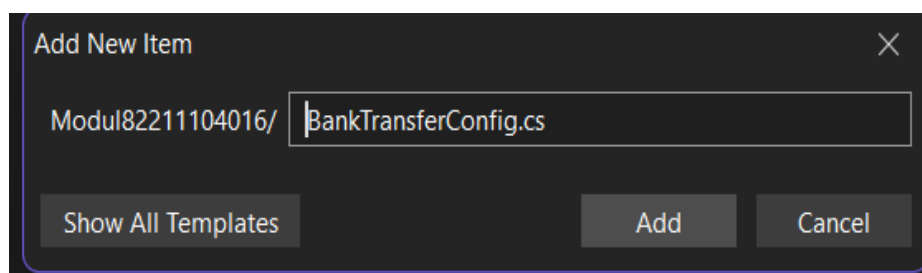
Idham@LAPTOP-9DA4K8Q8 MINGW64 /d/Praktikum_KPL/Praktikum_KPL (main)
$ git commit -m "first commit"
[main 26d636a] first commit
168 files changed, 106059 insertions(+)
create mode 100644 Modul8/.vs/Modul8/DesignTimeBuild/.dtbcache.v2
create mode 100644 Modul8/.vs/Modul8/FileContentIndex/630c49e1-d9be-4f8c-b375-a
b009a6115b6.vsidx
create mode 100644 Modul8/.vs/Modul8/FileContentIndex/a34f2023-889f-4b66-acc-d
fec0a642dbc.vsidx
create mode 100644 Modul8/.vs/Modul8/FileContentIndex/bb626d9c-f220-41c4-9743-0
6820910d777.vsidx
create mode 100644 Modul8/.vs/Modul8/FileContentIndex/be73efa9-adae-4bae-99e0-1
261940dacc9.vsidx
create mode 100644 Modul8/.vs/Modul8/FileContentIndex/c8ca4eb1-09a1-41a2-9ef2-0
a899d583aal.vsidx
create mode 100644 Modul8/.vs/Modul8/config/applicationhost.config
create mode 100644 Modul8/.vs/Modul8/v17/.futcach.v2
create mode 100644 Modul8/.vs/Modul8/v17/.suo
create mode 100644 Modul8/.vs/Modul8/v17/DocumentLayout.backup.json
create mode 100644 Modul8/.vs/Modul8/v17/DocumentLayout.json
create mode 100644 Modul8/.vs/Modul8/v17/ResourceExplorer/settings.json
create mode 100644 Modul8/.vs/ProjectEvaluation/modul8.metadata.v9.bin
create mode 100644 Modul8/.vs/ProjectEvaluation/modul8.projects.v9.bin

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

Idham@LAPTOP-9DA4K8Q8 MINGW64 /d/Praktikum_KPL/Praktikum_KPL (main)
$ git push -u origin main
Enumerating objects: 204, done.
Counting objects: 100% (204/204), done.
Delta compression using up to 4 threads
Compressing objects: 100% (181/181), done.
Writing objects: 100% (203/203), 4.80 MiB | 294.00 KiB/s, done.
Total 203 (delta 43), reused 1 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (43/43), completed with 1 local object.
To https://github.com/Ridham2345/Praktikum_KPL.git
fc74894..26d636a main -> main
branch 'main' set up to track 'origin/main'.
```

## 3. IMPLEMENTASI RUNTIME CONFIGURATION

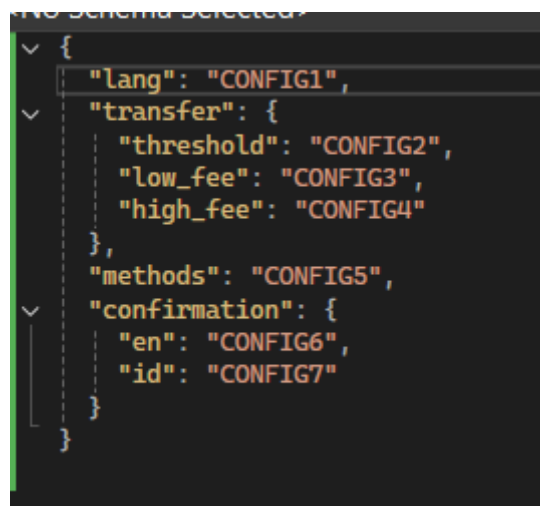
- Tambahkan class baru untuk memproses file konfigurasi dengan nama “BankTransferConfig”.



- File konfigurasi yang digunakan adalah “bank\_transfer\_config.json”

dengan format sebagai berikut:

```
{  
  "lang": "CONFIG1",  
  "transfer": {  
    "threshold": "CONFIG2",  
    "low_fee": "CONFIG3",  
    "high_fee": "CONFIG4"  
  },  
  "methods": "CONFIG5",  
  "confirmation": {  
    "en": "CONFIG6",  
    "id": "CONFIG7"  
  }  
}
```



- BankTransferConfig.cs

```

BankTransferConfig.cs  bank_transfer_config.json  App.config  Program.cs
Modul8_2211104016  Modul8_2211104016.Transfer

1  using System;
2  using System.Collections.Generic;
3  using System.IO;
4  using System.Text.Json;
5
6  namespace Modul8_2211104016
7  {
8      4 references
9      public class BankTransferConfig
10     {
11         9 references
12         public string lang { get; set; }
13         4 references
14         public Transfer transfer { get; set; }
15         3 references
16         public List<string> methods { get; set; }
17         5 references
18         public Confirmation confirmation { get; set; }
19
20         1 reference
21         public static BankTransferConfig LoadConfig(string path)
22         {
23             if (!File.Exists(path))
24             {
25                 var defaultConfig = new BankTransferConfig
26                 {
27                     lang = "en",
28                     transfer = new Transfer { threshold = 25000000, low_fee = 6500, high_fee = 15000 },
29                     methods = new List<string> { "RTO (real-time)", "SHOW", "RTGS", "BI FAST" },
30                     confirmation = new Confirmation { en = "yes", id = "ya" };
31                 };
32
33                 var json = JsonSerializer.Serialize(defaultConfig, new JsonSerializerOptions { WriteIndented = true });
34                 File.WriteAllText(path, json);
35                 return defaultConfig;
36             }
37
38             string configJson = File.ReadAllText(path);
39             return JsonSerializer.Deserialize<BankTransferConfig>(configJson);
40         }
41     }
42
43     2 references
44     public class Transfer
45     {
46         2 references
47         public int threshold { get; set; }
48         2 references
49         public int low_fee { get; set; }
50         2 references
51         public int high_fee { get; set; }
52     }
53
54     2 references
55     public class Confirmation
56     {
57         3 references
58         public string en { get; set; }
59         3 references
60         public string id { get; set; }
61     }
62 }

```

- Program.cs

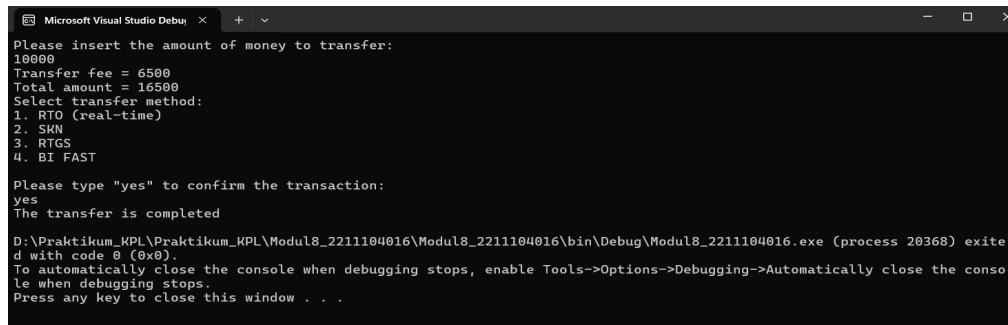
```

Modul8_2211104016  Modul8_2211104016.Program

1  using System;
2  using System.Collections.Generic;
3  using System.Linq;
4  using System.Text;
5  using System.Threading.Tasks;
6
7  namespace Modul8_2211104016
8  {
9      6 references
10     class Program
11     {
12         1 reference
13         static void Main(string[] args)
14         {
15             string configPath = "bank_transfer_config.json";
16             var config = BankTransferConfig.LoadConfig(configPath);
17
18             // Step I
19             if (config.lang == "id")
20                 Console.WriteLine("Masukkan jumlah uang yang akan di-transfer:");
21             else
22                 Console.WriteLine("Please insert the amount of money to transfer:");
23
24             int amount = int.Parse(Console.ReadLine());
25
26             // Step II
27             int fee = amount <= config.transfer.threshold ? config.transfer.low_fee : config.transfer.high_fee;
28             int total = amount + fee;
29
30             if (config.lang == "id")
31             {
32                 Console.WriteLine($"Biaya transfer = {fee}");
33                 Console.WriteLine($"Total biaya = {total}");
34             }
35             else
36             {
37                 Console.WriteLine($"Transfer fee = {fee}");
38                 Console.WriteLine($"Total amount = {total}");
39             }
40
41             // Step III
42             if (config.lang == "id")
43                 Console.WriteLine("Pilih metode transfer:");
44             else
45                 Console.WriteLine("Select transfer method:");
46
47             // Step IV
48             for (int i = 0; i < config.methods.Count; i++)
49             {
50                 Console.WriteLine($"{i + 1}. {config.methods[i]}");
51             }
52
53             Console.ReadLine();
54
55             if (config.lang == "id")
56                 Console.WriteLine("Tekik \"[config.confirmation.id]\" untuk mengkonfirmasi transaksi:");
57             else
58                 Console.WriteLine("Please type \"[config.confirmation.en]\" to confirm the transaction:");
59
60             string confirmationInput = Console.ReadLine();
61
62             bool isConfirmed = (config.lang == "id" && confirmationInput == config.confirmation.id) ||
63                             (config.lang == "en" && confirmationInput == config.confirmation.en);
64
65             if (isConfirmed)
66             {
67                 if (config.lang == "id")
68                     Console.WriteLine("Proses transfer berhasil!");
69                 else
70                     Console.WriteLine("The transfer is completed");
71             }
72             else
73             {
74                 if (config.lang == "id")
75                     Console.WriteLine("Transfer dibatalkan");
76                 else
77                     Console.WriteLine("Transfer is cancelled");
78             }
79
80         }
81     }
82 }

```

- Output



```
Microsoft Visual Studio Debug
Please insert the amount of money to transfer:
10000
Transfer fee = 6500
Total amount = 16500
Select transfer method:
1. RTO (real-time)
2. SWN
3. RTGS
4. BI FAST
Please type "yes" to confirm the transaction:
yes
The transfer is completed
D:\Praktikum_KPL\Praktikum_KPL\Modul8_2211104016\Modul8_2211104016\bin\Debug\Modul8_2211104016.exe (process 20368) 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 . . .
```

## Penjelasan

Program ini adalah aplikasi bank sederhana yang menggunakan file konfigurasi `bank_transfer_config.json` untuk mengatur bahasa, biaya transfer, dan metode transfer. Pengguna diminta memasukkan jumlah uang yang akan ditransfer, lalu program menghitung biaya transfer berdasarkan ambang batas (threshold). Setelah itu, ditampilkan total yang harus dibayar dan daftar metode transfer yang bisa dipilih. Program juga menyesuaikan bahasa output sesuai pengaturan di file JSON. Terakhir, pengguna harus mengetik “ya” atau “yes” untuk mengonfirmasi transaksi agar transfer berhasil dilakukan.

#### 4. MELAKUKAN COMMIT

Pada branch master/main:

- Lakukan commit dengan pesan “aplikasi bank transfer dengan runtime configuration”.

```
MINGW64:/d/Praktikum_KPL/Praktikum_KPL
$ git add .

Idham@LAPTOP-9DA4K8Q8 MINGW64 /d/Praktikum_KPL/Praktikum_KPL (main)
$ git commit -m "aplikasi bank dengan runtime configuration"
[main 1dec484] aplikasi bank dengan runtime configuration
323 files changed, 83703 insertions(+)
create mode 100644 Modul8_2211104016/.vs/Modul8_2211104016/FileContentIndex/289a15a8-a410-49cc-926f-1e41373e27c7.vsix
create mode 100644 Modul8_2211104016/.vs/Modul8_2211104016/FileContentIndex/2c8fba7b-70a8-450a-8ad5-53d26f044e3f.vsix
create mode 100644 Modul8_2211104016/.vs/Modul8_2211104016/FileContentIndex/3a9150e2-a978-44bc-a133-48c9096f6bc5.vsix
create mode 100644 Modul8_2211104016/.vs/Modul8_2211104016/FileContentIndex/692f08e7-2c24-45b9-87c5-a52fd57cef59.vsix
create mode 100644 Modul8_2211104016/.vs/Modul8_2211104016/FileContentIndex/74916150-b65d-48ff-9b0a-311170947a72.vsix
create mode 100644 Modul8_2211104016/.vs/Modul8_2211104016/v17/.suo
create mode 100644 Modul8_2211104016/.vs/Modul8_2211104016/v17/DocumentLayout.backup.json
create mode 100644 Modul8_2211104016/.vs/Modul8_2211104016/v17/DocumentLayout.json
create mode 100644 Modul8_2211104016/Modul8_2211104016/App.config
create mode 100644 Modul8_2211104016/Modul8_2211104016/BankTransferConfig.cs
create mode 100644 Modul8_2211104016/Modul8_2211104016/Modul8_2211104016.csproj
create mode 100644 Modul8_2211104016/Modul8_2211104016/Program.cs
create mode 100644 Modul8_2211104016/Modul8_2211104016/bank_transfer_config.json
create mode 100644 Modul8_2211104016/Modul8_2211104016/bin/Debug/Microsoft.Bcl.AsyncInterfaces.dll
create mode 100644 Modul8_2211104016/Modul8_2211104016/bin/Debug/Microsoft.Bcl.AsyncInterfaces.xml
create mode 100644 Modul8_2211104016/Modul8_2211104016/bin/Debug/Modul8_2211104016.exe
create mode 100644 Modul8_2211104016/Modul8_2211104016/bin/Debug/Modul8_2211104016.exe.config
create mode 100644 Modul8_2211104016/Modul8_2211104016/bin/Debug/Modul8_2211104016.pdb
create mode 100644 Modul8_2211104016/Modul8_2211104016/bin/Debug/System.Buffers.dll
create mode 100644 Modul8_2211104016/Modul8_2211104016/bin/Debug/System.Buffers.xml
create mode 100644 Modul8_2211104016/Modul8_2211104016/bin/Debug/System.IO.Pipelines.dll
create mode 100644 Modul8_2211104016/Modul8_2211104016/bin/Debug/System.IO.Pipelines.xml
create mode 100644 Modul8_2211104016/Modul8_2211104016/bin/Debug/System.Memory.dll
create mode 100644 Modul8_2211104016/Modul8_2211104016/bin/Debug/System.Memory.xml
create mode 100644 Modul8_2211104016/Modul8_2211104016/bin/Debug/System.Numerics.Vectors.dll
create mode 100644 Modul8_2211104016/Modul8_2211104016/bin/Debug/System.Numerics.Vectors.xml
create mode 100644 Modul8_2211104016/Modul8_2211104016/bin/Debug/System.Runtime.CompilerServices.Unsafe.dll
create mode 100644 Modul8_2211104016/Modul8_2211104016/bin/Debug/System.Runtime.CompilerServices.Unsafe.xml
create mode 100644 Modul8_2211104016/Modul8_2211104016/bin/Debug/System.Text.Encodings.Web.dll
create mode 100644 Modul8_2211104016/Modul8_2211104016/bin/Debug/System.Text.Encodings.Web.xml
create mode 100644 Modul8_2211104016/Modul8_2211104016/bin/Debug/System.Text.Json.dll
create mode 100644 Modul8_2211104016/Modul8_2211104016/bin/Debug/System.Text.Json.xml
create mode 100644 Modul8_2211104016/Modul8_2211104016/bin/Debug/System.Threading.Tasks.Extensions.dll
create mode 100644 Modul8_2211104016/Modul8_2211104016/bin/Debug/System.Threading.Tasks.Extensions.xml
create mode 100644 Modul8_2211104016/Modul8_2211104016/bin/Debug/System.ValueTuple.dll
create mode 100644 Modul8_2211104016/Modul8_2211104016/bin/Debug/System.ValueTuple.xml
```

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

```
Idham@LAPTOP-9DA4K8Q8 MINGW64 /d/Praktikum_KPL/Praktikum_KPL (main)
$ git push origin main
Enumerating objects: 273, done.
Counting objects: 100% (273/273), done.
Delta compression using up to 4 threads
Compressing objects: 100% (252/252), done.
Writing objects: 100% (270/270), 5.07 MiB | 197.00 KiB/s, done.
Total 270 (delta 73), reused 2 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (73/73), completed with 1 local object.
To https://github.com/Ridham2345/Praktikum_KPL.git
26d636a..1dec484 main -> main
```