

JURNAL MODUL 8
RUNTIME CONFIGURATION DAN
INTERNATIONALIZATION



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PROGRAM STUDI S1 REKAYASA PERANGKAT LUNAK
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2025

1. IMPLEMENTASI RUNTIME CONFIGURATION

Ini merupakan file JSON dari bank_transfer_config

```
bank_transfer_config.json.txt  tjmodul8_2311104076.csproj  Program.cs
1      {
2      "lang": "CONFIG1",
3      "transfer": {
4      "threshold": "CONFIG2",
5      "low_fee": "CONFIG3",
6      "high_fee": "CONFIG4"
7      },
8      "methods": CONFIG5,
9      "confirmation": {
10     "en": "CONFIG6",
11     "id": "CONFIG7"
12     }
13     }
```

Program ini menggunakan class BankTransferConfig yang secara otomatis membaca file konfigurasi JSON saat aplikasi dijalankan. Jika file tersebut tidak ditemukan, maka class akan membuat file baru berisi konfigurasi default. Dalam alur utama program, langkah pertama adalah menampilkan pesan berdasarkan bahasa yang ditentukan dalam konfigurasi (lang). Selanjutnya, program akan menghitung biaya transfer berdasarkan jumlah nominal yang dimasukkan dan ambang batas (threshold) yang telah ditentukan, lalu menampilkan total biaya yang harus dibayar. Setelah itu, pengguna diminta untuk memilih metode transfer dari daftar yang tersedia dan memberikan konfirmasi transaksi. Terakhir, program akan memvalidasi apakah input konfirmasi sesuai dengan nilai yang telah ditentukan dalam konfigurasi; jika sesuai, transaksi dianggap berhasil, jika tidak, maka transaksi dibatalkan.

```
File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help Search tjmodul8
Debug Any CPU tjmodul8_2311104076
bank_transfer_config.json.txt tjmodul8_2311104076.csproj Program.cs
tjmodul8_2311104076 BankTransferConfig Lang
1 using System;
2 using System.Collections.Generic;
3 using System.IO;
4 using System.Text.Json;
5
6 public class BankTransferConfig
7 {
8     public string Lang { get; set; } = "en";
9     public Transfer Transfer { get; set; } = new Transfer();
10    public List<string> Methods { get; set; } = new List<string> { "RTO (real-time)", "SKN", "RTGS", "BI FAST" };
11    public Confirmation Confirmation { get; set; } = new Confirmation();
12
13    private const string FilePath = "bank_transfer_config.json";
14
15    public BankTransferConfig()
16    {
17        if (File.Exists(FilePath))
18        {
19            string json = File.ReadAllText(FilePath);
20            var config = JsonSerializer.Deserialize<BankTransferConfig>(json);
21            if (config != null)
22            {
23                Lang = config.Lang;
24                Transfer = config.Transfer;
25                Methods = config.Methods;
26                Confirmation = config.Confirmation;
```

Code program:

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

public class BankTransferConfig
{
    public string Lang { get; set; } = "en";
    public Transfer Transfer { get; set; } = new Transfer();
    public List<string> Methods { get; set; } = new List<string> { "RTO (real-time)",
"SKN", "RTGS", "BI FAST" };
    public Confirmation Confirmation { get; set; } = new Confirmation();

    private const string FilePath = "bank_transfer_config.json";

    public BankTransferConfig()
    {
        if (File.Exists(FilePath))
        {
            string json = File.ReadAllText(FilePath);
            var config = JsonSerializer.Deserialize<BankTransferConfig>(json);
            if (config != null)
            {
                Lang = config.Lang;
                Transfer = config.Transfer;
                Methods = config.Methods;
                Confirmation = config.Confirmation;
            }
        }
        else
        {
            // save default config if file not found
            SaveDefaultConfig();
        }
    }

    private void SaveDefaultConfig()
    {
        var options = new JsonSerializerOptions { WriteIndented = true };
        string json = JsonSerializer.Serialize(this, options);
        File.WriteAllText(FilePath, json);
    }
}
```

```

public class Transfer
{
    public int Threshold { get; set; } = 25000000;
    public int Low_Fee { get; set; } = 6500;
    public int High_Fee { get; set; } = 15000;
}

public class Confirmation
{
    public string En { get; set; } = "yes";
    public string Id { get; set; } = "ya";
}

class Program
{
    static void Main()
    {
        BankTransferConfig config = new BankTransferConfig();

        string lang = config.Lang;
        string confirmationWord = (lang == "en") ? config.Confirmation.En :
config.Confirmation.Id;

        // Step 1: input jumlah transfer
        Console.WriteLine(lang == "en"
            ? "Please insert the amount of money to transfer:"
            : "Masukkan jumlah uang yang akan di-transfer:");
        int amount = int.Parse(Console.ReadLine());

        // Step 2: hitung fee dan total
        int fee = amount <= config.Transfer.Threshold ? config.Transfer.Low_Fee :
config.Transfer.High_Fee;
        int total = amount + fee;

        Console.WriteLine(lang == "en"
            ? $"Transfer fee = {fee}\nTotal amount = {total}"
            : $"Biaya transfer = {fee}\nTotal biaya = {total}");

        // Step 3: tampilkan metode transfer
        Console.WriteLine(lang == "en" ? "Select transfer method:" : "Pilih metode
transfer:");
        for (int i = 0; i < config.Methods.Count; i++)
        {
            Console.WriteLine($"{i + 1}. {config.Methods[i]}");
        }
    }
}

```

```

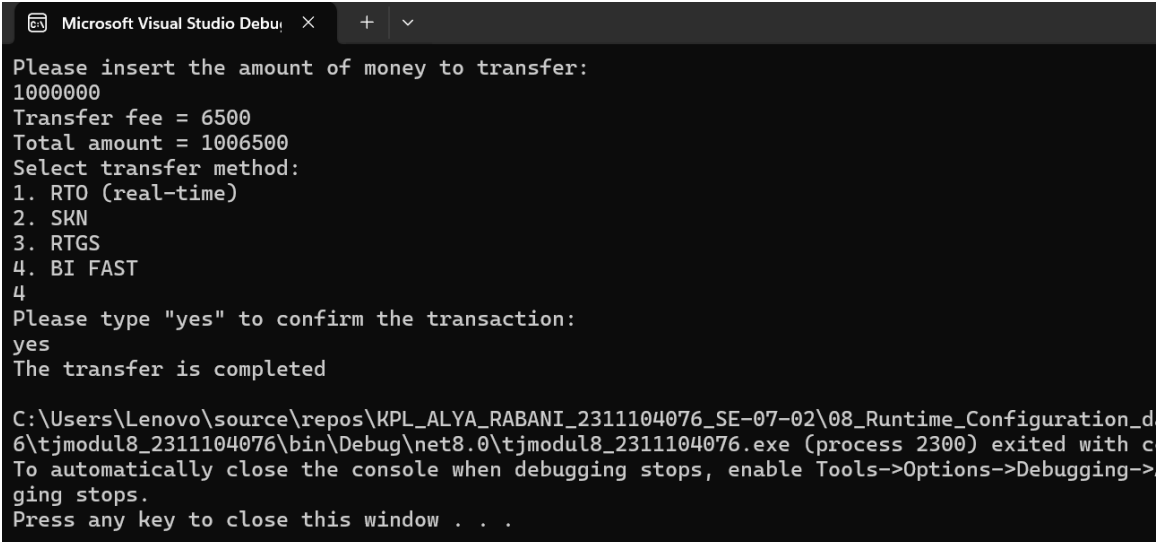
Console.ReadLine(); // input pilihan metode (nggak digunakan lebih lanjut)

// Step 4: konfirmasi
Console.WriteLine(lang == "en"
    ? $"Please type \"{confirmationWord}\" to confirm the transaction:"
    : $"Ketik \"{confirmationWord}\" untuk mengkonfirmasi transaksi:");

string userInput = Console.ReadLine();
if (userInput.ToLower() == confirmationWord.ToLower())
{
    Console.WriteLine(lang == "en"
        ? "The transfer is completed"
        : "Proses transfer berhasil");
}
else
{
    Console.WriteLine(lang == "en"
        ? "Transfer is cancelled"
        : "Transfer dibatalkan");
}
}
}

```

Output yang dihasilkan:



```

Microsoft Visual Studio Debu  ×  +  ▾

Please insert the amount of money to transfer:
1000000
Transfer fee = 6500
Total amount = 1006500
Select transfer method:
1. RTO (real-time)
2. SKN
3. RTGS
4. BI FAST
4
Please type "yes" to confirm the transaction:
yes
The transfer is completed

C:\Users\Lenovo\source\repos\KPL_ALYA_RABANI_2311104076_SE-07-02\08_Runtime_Configuration_d
6\tjmodul8_2311104076\bin\Debug\net8.0\tjmodul8_2311104076.exe (process 2300) exited with c
To automatically close the console when debugging stops, enable Tools->Options->Debugging->
ging stops.
Press any key to close this window . . .

```

2. Melakukan add, commit, dan push di github

```
C:\Windows\system32\cmd.e  X  +  v

** Visual Studio 2022 Developer Command Prompt v17.13.0
** Copyright (c) 2022 Microsoft Corporation
*****

C:\Users\Lenovo\source\repos\WPL_ALYA_RABANI_2311104076_SE-07-02\08_Runtime_Configuration_dan_Internationalization\tjmodul8_2311104076>git add .

C:\Users\Lenovo\source\repos\WPL_ALYA_RABANI_2311104076_SE-07-02\08_Runtime_Configuration_dan_Internationalization\tjmodul8_2311104076>git commit -m "aplikasi bank transfer dengan runtime configuration"
[main e8d5381] aplikasi bank transfer dengan runtime configuration
34 files changed, 266 insertions(+), 8 deletions(-)
create mode 100644 08_Runtime_Configuration_dan_Internationalization\tjmodul8_2311104076/.vs\tjmodul8_2311104076/FileContentIndex/3b58f7cd-75ca-45c2-b778-a3831e1c79ec.vsixd
create mode 100644 08_Runtime_Configuration_dan_Internationalization\tjmodul8_2311104076/.vs\tjmodul8_2311104076/FileContentIndex/5baa78c2-c2fc-4157-ae95-676f964cb996.vsixd
create mode 100644 08_Runtime_Configuration_dan_Internationalization\tjmodul8_2311104076/.vs\tjmodul8_2311104076/FileContentIndex/847cf1cb-0fe0-43a9-aefc-da918eb5c822.vsixd
create mode 100644 08_Runtime_Configuration_dan_Internationalization\tjmodul8_2311104076/.vs\tjmodul8_2311104076/FileContentIndex/be4b1ecf-aa07-403c-a568-03a279b1e172.vsixd
create mode 100644 08_Runtime_Configuration_dan_Internationalization\tjmodul8_2311104076/.vs\tjmodul8_2311104076/FileContentIndex/c662f0be-25a9-d162-b915f4fa70e2.vsixd
delete mode 100644 08_Runtime_Configuration_dan_Internationalization\tjmodul8_2311104076/.vs\tjmodul8_2311104076/FileContentIndex/e696c807-6c56-42d7-845e-0f6d544a2246.vsixd
create mode 100644 08_Runtime_Configuration_dan_Internationalization\tjmodul8_2311104076\tjmodul8_2311104076\bank_transfer_config.json.txt
create mode 100644 08_Runtime_Configuration_dan_Internationalization\tjmodul8_2311104076\tjmodul8_2311104076\bin\Debug\net8.0\bank_transfer_config.json
create mode 100644 08_Runtime_Configuration_dan_Internationalization\tjmodul8_2311104076\tjmodul8_2311104076\bin\Debug\net8.0\tjmodul8_2311104076.deps.json
create mode 100644 08_Runtime_Configuration_dan_Internationalization\tjmodul8_2311104076\tjmodul8_2311104076\bin\Debug\net8.0\tjmodul8_2311104076.dll
create mode 100644 08_Runtime_Configuration_dan_Internationalization\tjmodul8_2311104076\tjmodul8_2311104076\bin\Debug\net8.0\tjmodul8_2311104076.exe
create mode 100644 08_Runtime_Configuration_dan_Internationalization\tjmodul8_2311104076\tjmodul8_2311104076\bin\Debug\net8.0\tjmodul8_2311104076.pdb
create mode 100644 08_Runtime_Configuration_dan_Internationalization\tjmodul8_2311104076\tjmodul8_2311104076\bin\Debug\net8.0\tjmodul8_2311104076.runtimeconfig.json
create mode 100644 08_Runtime_Configuration_dan_Internationalization\tjmodul8_2311104076\tjmodul8_2311104076\obj\Debug\net8.0\apphost.exe
create mode 100644 08_Runtime_Configuration_dan_Internationalization\tjmodul8_2311104076\tjmodul8_2311104076\obj\Debug\net8.0\ref\tjmodul8_2311104076.dll
create mode 100644 08_Runtime_Configuration_dan_Internationalization\tjmodul8_2311104076\tjmodul8_2311104076\obj\Debug\net8.0\refint\tjmodul8_2311104076.dll
create mode 100644 08_Runtime_Configuration_dan_Internationalization\tjmodul8_2311104076\tjmodul8_2311104076\obj\Debug\net8.0\tjmodul8_2311104076.csproj.BuildWithSkipAnalyzers
create mode 100644 08_Runtime_Configuration_dan_Internationalization\tjmodul8_2311104076\tjmodul8_2311104076\obj\Debug\net8.0\tjmodul8_2311104076.csproj.CoreCompileInputs.cache
create mode 100644 08_Runtime_Configuration_dan_Internationalization\tjmodul8_2311104076\tjmodul8_2311104076\obj\Debug\net8.0\tjmodul8_2311104076.csproj.FileListAbsolute.txt
create mode 100644 08_Runtime_Configuration_dan_Internationalization\tjmodul8_2311104076\tjmodul8_2311104076\obj\Debug\net8.0\tjmodul8_2311104076.dll
create mode 100644 08_Runtime_Configuration_dan_Internationalization\tjmodul8_2311104076\tjmodul8_2311104076\obj\Debug\net8.0\tjmodul8_2311104076.genruntimeconfig.cache
create mode 100644 08_Runtime_Configuration_dan_Internationalization\tjmodul8_2311104076\tjmodul8_2311104076\obj\Debug\net8.0\tjmodul8_2311104076.pdb
create mode 100644 08_Runtime_Configuration_dan_Internationalization\tjmodul8_2311104076\tjmodul8_2311104076\obj\Debug\net8.0\tjmodul8_2311104076.sourceLink.json

C:\Users\Lenovo\source\repos\WPL_ALYA_RABANI_2311104076_SE-07-02\08_Runtime_Configuration_dan_Internationalization\tjmodul8_2311104076>git push origin main
Enumerating objects: 67, done.
Counting objects: 100% (56/56), done.
Delta compression using up to 12 threads
Compressing objects: 100% (40/40), done.
Writing objects: 100% (45/45), 97.18 KiB | 3.04 MiB/s, done.
Total 45 (delta 11), reused 2 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (11/11), completed with 9 local objects.
To https://github.com/rabanialya/WPL_ALYA_RABANI_2311104076_SE-07-02.git
 a7ae8d7..e8d5381 main -> main
```