

JURNAL
KONSTRUKSI PERANGKAT LUNAK
MODUL 8



Oleh :

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SE0601

PROGRAM STUDI S1 SOFTWARE ENGINEERING

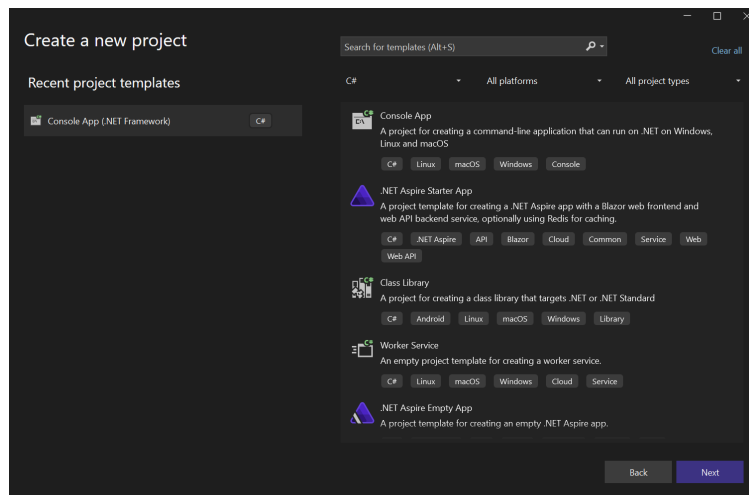
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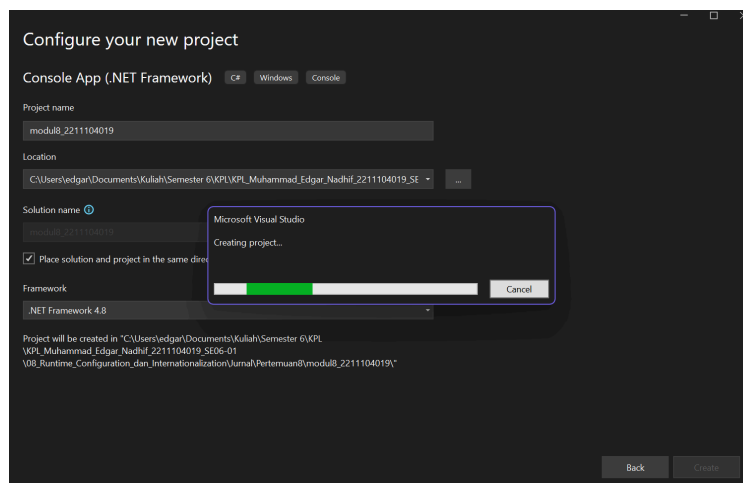
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1. Membuat Project Console tanpa GUI

Pilih Create a new project.



Kemudian pilih Console app



2. Melakukan Commit pada Project

```

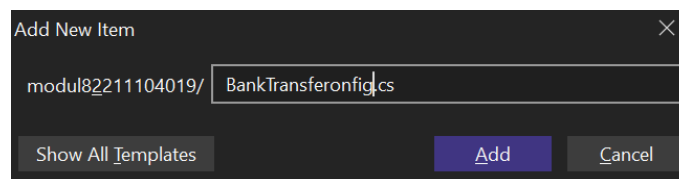
edgar@DESKTOP-03IHL1P MINGW64 ~/Documents/Kuliah/Semester 6/KPL/KPL_Muhammad_Edgar_Nadhif_2211104019_SE06-01 (main)
$ git commit -m "Melakukan commit jurnal modul 8"
[main 9413d2c] Melakukan commit jurnal modul 8
8 files changed, 136 insertions(+)
 create mode 100644 08_Runtime_Configuration_dan_Internationalization/Jurnal/Per
temuan8/modul8_2211104019/App.config
 create mode 100644 08_Runtime_Configuration_dan_Internationalization/Jurnal/Per
temuan8/modul8_2211104019/Program.cs
 create mode 100644 08_Runtime_Configuration_dan_Internationalization/Jurnal/Per
temuan8/modul8_2211104019/Properties/AssemblyInfo.cs
 create mode 100644 08_Runtime_Configuration_dan_Internationalization/Jurnal/Per
temuan8/modul8_2211104019/modul8_2211104019.csproj
 create mode 100644 08_Runtime_Configuration_dan_Internationalization/Jurnal/Per
temuan8/modul8_2211104019/modul8_2211104019.sln
 create mode 100644 08_Runtime_Configuration_dan_Internationalization/Jurnal/Per
temuan8/modul8_2211104019/obj/Debug/.NETFramework,Version=v4.8.AssemblyAttribute
s.cs
 create mode 100644 08_Runtime_Configuration_dan_Internationalization/Jurnal/Per
temuan8/modul8_2211104019/obj/Debug/DesignTimeResolveAssemblyReferencesInput.cac
he
 create mode 100644 08_Runtime_Configuration_dan_Internationalization/Jurnal/Per
temuan8/modul8_2211104019/obj/Debug/modul8_2211104019.csproj.AssemblyReference.c
ache

edgar@DESKTOP-03IHL1P MINGW64 ~/Documents/Kuliah/Semester 6/KPL/KPL_Muhammad_Edgar_Nadhif_2211104019_SE06-01 (main)
$ git push -u origin
Enumerating objects: 19, done.
Counting objects: 100% (19/19), done.
Delta compression using up to 8 threads
Compressing objects: 100% (13/13), done.
Writing objects: 100% (17/17), 4.27 KiB | 437.00 KiB/s, done.
Total 17 (delta 1), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To https://github.com/edgarnadhif/KPL_Muhammad_Edgar_Nadhif_2211104019_SE06-01.g
it
   ald93fa..9413d2c  main -> main
branch 'main' set up to track 'origin/main'.

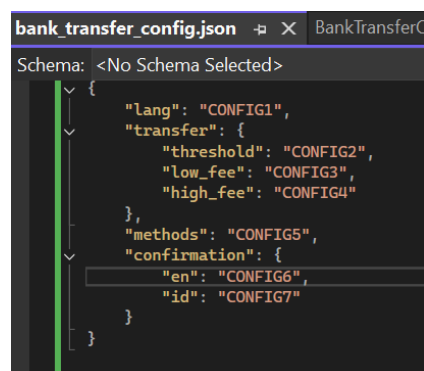
```

3. Implementasi Runtime Configuration

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



- b. Tambahkan file konfigurasi dengan nama “bank_transfer_config.json” dengan format sebagai berikut :



- c. Nilai default yang digunakan :

```
{
  "lang": "en",
  "transfer": {
    "threshold": 25000000,
    "low_fee": 6500,
    "high_fee": 15000
  },
  "methods": [ "RTO (real-time)", "SKN", "RTGS", "BI FAST" ],
  "confirmation": {
    "en": "yes",
    "id": "ya"
  }
}
```

d. BankTransferConfig.cs :

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

public class BankTransferConfig
{
    public string Lang { get; set; }
    public Transfer Transfer { get; set; }
    public List<string> Methods { get; set; }
    public Confirmation Confirmation { get; set; }

    private const string ConfigPath = "bank_transfer_config.json";

    public static BankTransferConfig LoadConfig()
    {
        if (File.Exists(ConfigPath))
        {
            try
            {
                string json = File.ReadAllText(ConfigPath);
                return JsonSerializer.Deserialize<BankTransferConfig>(json);
            }
            catch
            {
                Console.WriteLine("Failed to read config, using default.");
                return DefaultConfig();
            }
        }
        else
        {

```

```
            var defaultConfig = DefaultConfig();
            string json = JsonSerializer.Serialize(defaultConfig, new JsonSerializerOptions { WriteIndented = true });
            File.WriteAllText(ConfigPath, json);
            return defaultConfig;
        }
    }

    private static BankTransferConfig DefaultConfig()
    {
        return new BankTransferConfig
        {
            Lang = "en",
            Transfer = new Transfer
            {
                Threshold = 25000000,
                LowFee = 6500,
                HighFee = 15000
            },
            Methods = new List<string> { "RTO (real-time)", "SKN", "RTGS", "BI FAST" },
            Confirmation = new Confirmation
            {
                En = "yes",
                Id = "ya"
            }
        };
    }
}
```

```
public class Transfer
{
    public int Threshold { get; set; }
    public int LowFee { get; set; }
    public int HighFee { get; set; }
}

public class Confirmation
{
    public string En { get; set; }
    public string Id { get; set; }
}
```

e. Program.cs

```
using System;

0 references
class Program
{
    0 references
    static void Main()
    {
        BankTransferConfig config = BankTransferConfig.LoadConfig();
        string lang = config.Lang;

        // Step 1: Prompt nominal 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: Calculate transfer fee
        int fee = amount <= config.Transfer.Threshold ? config.Transfer.LowFee : config.Transfer.HighFee;
        int total = amount + fee;

        // Step 3: Display fee and total
        if (lang == "en")
        {
            Console.WriteLine($"Transfer fee = {fee}");
            Console.WriteLine($"Total amount = {total}");
        }
        else
        {
            Console.WriteLine($"Biaya transfer = {fee}");
            Console.WriteLine($"Total biaya = {total}");
        }
    }
}
```

```
        // Step 4: Transfer method
        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]}");
        }

        int methodChoice = int.Parse(Console.ReadLine());

        // Step 5: Confirmation
        string confirmText = lang == "en" ? config.Confirmation.En : config.Confirmation.Id;
        Console.WriteLine(lang == "en"
            ? $"Please type \"{confirmText}\" to confirm the transaction:"
            : $"Ketik \"{confirmText}\" untuk mengonfirmasi transaksi:");

        string userInput = Console.ReadLine();

        // Step 6: Final confirmation
        if (userInput == confirmText)
        {
            Console.WriteLine(lang == "en"
                ? "The transfer is completed"
                : "Proses transfer berhasil");
        }
        else
        {
            Console.WriteLine(lang == "en"
                ? "Transfer is cancelled"
                : "Transfer dibatalkan");
        }
    }
}
```

f. Output Program

```
Please insert the amount of money to transfer:
3000000
Transfer fee = 6500
Total amount = 3006500
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
```

g. Penjelasan singkat

Program ini merupakan simulasi transfer uang antar bank berbasis console yang menggunakan file konfigurasi eksternal, sehingga pengaturan seperti bahasa tampilan, ambang batas nominal transfer, biaya transfer rendah dan tinggi, serta metode transfer dapat diubah tanpa perlu mengubah kode program. File konfigurasi (bank_transfer_config.json) diakses oleh class BankTransferConfig, yang memastikan aplikasi selalu berjalan sesuai parameter yang telah ditetapkan.

Setelah konfigurasi dibaca, aplikasi akan menampilkan instruksi sesuai bahasa yang dipilih (misalnya Bahasa Inggris atau Indonesia). Pengguna kemudian diminta memasukkan nominal uang yang akan ditransfer, setelah itu aplikasi menghitung dan menampilkan biaya transfer serta total pembayaran berdasarkan ambang batas yang ada. Selain itu, pengguna harus memilih salah satu metode transfer dan mengonfirmasi transaksi dengan mengetik kata kunci sesuai pengaturan. Proses ini memberikan fleksibilitas tinggi, memungkinkan penyesuaian sistem transfer secara dinamis hanya dengan mengubah file konfigurasi.