

**JURNAL
KONSTRUKSI PERANGKAT LUNAK**

PERTEMUAN 7

Runtime Configuration dan Internationalization



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PROGRAM STUDI S1 SOFTWARE ENGINEERING
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1. Link Github Repository

[https://github.com/akuazizz/KPL_MUHAMMAD-ABDUL-AZIZ_2211104026_SE0601/tree/main/08_Runtime_Configuration_dan Internationlization/JURNAL](https://github.com/akuazizz/KPL_MUHAMMAD-ABDUL-AZIZ_2211104026_SE0601/tree/main/08_Runtime_Configuration_dan_Internationlization/JURNAL)

2. Screenshot hasil run (hasil console output dari proses run) Penjelasan singkat dari kode implementasi yang dibuat (beserta screenshot dari potongan source code yang dijelaskan).

a. Implementasi Runtime Configuration

Source Code

Program.cs :

```
1 using System;
2
3 class Program
4 {
5     static void Main(string[] args)
6     {
7         var config = BankTransferConfig.LoadFromFile("E:\\KPL\\modul8_2211104026\\modul8_2211104026\\bank_transfer_config.json");
8
9         string lang = config.lang;
10        string confirmWord = lang == "en" ? config.confirmation.en : config.confirmation.id;
11
12        Console.WriteLine(lang == "en" ? "Please insert the amount of money to transfer:" : "Masukkan jumlah uang yang akan di-transfer:");
13        int amount = int.Parse(Console.ReadLine());
14
15        int fee = amount <= config.transfer.threshold ? config.transfer.low_fee : config.transfer.high_fee;
16        int total = amount + fee;
17
18        Console.WriteLine(lang == "en" ? $"Transfer fee = {fee}" : $"Biaya transfer = {fee}");
19        Console.WriteLine(lang == "en" ? $"Total amount = {total}" : $"Total biaya = {total}");
20
21        Console.WriteLine(lang == "en" ? "Select transfer method:" : "Pilih metode transfer:");
22        for (int i = 0; i < config.methods.Count; i++)
23        {
24            Console.WriteLine($"{i + 1}. {config.methods[i]}");
25        }
26        Console.ReadLine(); // dummy input
27
28        Console.WriteLine(lang == "en" ?
29            $"Please type \"{confirmWord}\" to confirm the transaction:" :
30            $"Ketik \"{confirmWord}\" untuk mengkonfirmasi transaksi:");
31        string confirmInput = Console.ReadLine();
32
33        if (confirmInput.ToLower() == confirmWord.ToLower())
34        {
35            Console.WriteLine(lang == "en" ? "The transfer is completed" : "Proses transfer berhasil");
36        }
37        else
38        {
39            Console.WriteLine(lang == "en" ? "Transfer is cancelled" : "Transfer dibatalkan");
40        }
41    }
42 }
```

BankTransferConfig.cs :

```
1 using Newtonsoft.Json;
2 using System;
3 using System.Collections.Generic;
4 using System.IO;
5 using System.Text.Json;
6 using System.Text.Json.Serialization;
7
8 public class BankTransferConfig
9 {
10     public string lang { get; set; }
11     public Transfer transfer { get; set; }
12     public List<string> methods { get; set; }
13     public Confirmation confirmation { get; set; }
14
15     public static BankTransferConfig LoadFromFile(string path)
16     {
17         if (!File.Exists(path))
18         {
19             var defaultConfig = new BankTransferConfig
20             {
21                 lang = "en",
22                 transfer = new Transfer
23                 {
24                     threshold = 25000000,
25                     low_fee = 6500,
26                     high_fee = 15000
27                 },
28                 methods = new List<string> { "RTO (real-time)", "SKN", "RTGS", "BI FAST" },
29                 confirmation = new Confirmation
30                 {
31                     en = "yes",
32                     id = "ya"
33                 }
34             };
35             File.WriteAllText(path, System.Text.Json.JsonSerializer.Serialize(defaultConfig, new JsonSerializerOptions { WriteIndented = true }));
36             return defaultConfig;
37         }
38         return System.Text.Json.JsonSerializer.Deserialize<BankTransferConfig>(File.ReadAllText(path));
39     }
40 }
```

```

40 }
41
42 2 references
43 public class Transfer
44 {
45     2 references
46     public int threshold { get; set; }
47     2 references
48     public int low_fee { get; set; }
49     2 references
50     public int high_fee { get; set; }
51 }
52 2 references
53 public class Confirmation
54 {
55     2 references
56     public string en { get; set; }
57     2 references
58     public string id { get; set; }
59 }

```

Bank_transfer_config.json :

```

ma: <No Schema Selected>
1 {
2   "lang": "en",
3   "transfer": {
4     "threshold": 25000000,
5     "low_fee": 6500,
6     "high_fee": 15000
7   },
8   "methods": [ "RTO (real-time)", "SKN", "RTGS", "BI FAST" ],
9   "confirmation": {
10    "en": "yes",
11    "id": "ya"
12  }
13 }
14
ma: <No Schema Selected>
1 {
2   "lang": "id",
3   "transfer": {
4     "threshold": 25000000,
5     "low_fee": 6500,
6     "high_fee": 15000
7   },
8   "methods": [ "RTO (real-time)", "SKN", "RTGS", "BI FAST" ],
9   "confirmation": {
10    "en": "yes",
11    "id": "ya"
12  }
13 }
14

```

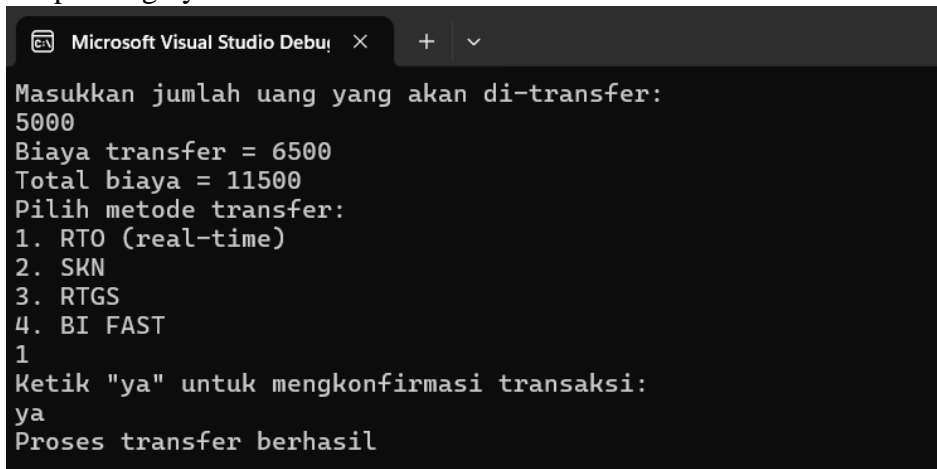
Output lang nya en :

```

Microsoft Visual Studio Debug Console
Please insert the amount of money to transfer:
5000
Transfer fee = 6500
Total amount = 11500
Select transfer method:
1. RTO (real-time)
2. SKN
3. RTGS
4. BI FAST
1
Please type "yes" to confirm the transaction:
yes
The transfer is completed

```

Output lang nya id :



```
Microsoft Visual Studio Debug Console
Masukkan jumlah uang yang akan di-transfer:
5000
Biaya transfer = 6500
Total biaya = 11500
Pilih metode transfer:
1. RTO (real-time)
2. SKN
3. RTGS
4. BI FAST
1
Ketik "ya" untuk mengkonfirmasi transaksi:
ya
Proses transfer berhasil
```

Penjelasan :

Program di atas merupakan aplikasi transfer bank berbasis konsol yang memuat konfigurasi dari file JSON eksternal. Kelas `BankTransferConfig` memuat struktur konfigurasi seperti bahasa (`lang`), aturan transfer (`transfer`), metode transfer (`methods`), dan kata konfirmasi (`confirmation`). Ketika dijalankan, program akan memuat konfigurasi dari file `bank_transfer_config.json` menggunakan `System.Text.Json`. Jika file belum ada, program akan membuatnya dengan nilai default. Berdasarkan konfigurasi bahasa, program akan menampilkan instruksi dalam bahasa Indonesia atau Inggris. Pengguna diminta memasukkan jumlah uang yang ingin ditransfer, lalu sistem menghitung biaya transfer berdasarkan ambang batas (`threshold`) dan menentukan total biaya. Selanjutnya, pengguna memilih metode transfer dan diminta untuk mengetik kata konfirmasi sesuai bahasa yang dipilih. Jika input sesuai, maka transaksi berhasil; jika tidak, transaksi dibatalkan. Program ini juga menggunakan kombinasi namespace `System`, `System.IO`, dan `System.Text.Json` untuk mengelola input-output dan serialisasi konfigurasi JSON.