

Laporan Praktikum 1

Mata Kuliah: Teknik Pemrograman



POLBAN

Oleh:

Nama : Arkan Ramadhan Nugraha

NIM : 241524033

Kelas : 1B-TI4

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BAB I PENDAHULUAN

1. Tujuan dari latihan ini yaitu:
 1. Mahasiswa dapat Mengenal mata kuliah Pemrograman Berorientasi Obyek.
 2. Mahasiswa dapat mengenali dan menyebutkan Teknologi saat ini yang menggunakan penerapan Pemrograman Berorientasi Object.
 3. Mahasiswa dapat melakukan setup Software environment.
 4. Mahasiswa dapat menganalisis input proses dan output yang dihasilkan potongan source code kasus yang dikaitkan dengan konsep pada mata kuliah DDP.
2. Source Code ada di <https://github.com/Arney1/Programming-Techniques---001>

BAB II Pengerjaan Soal

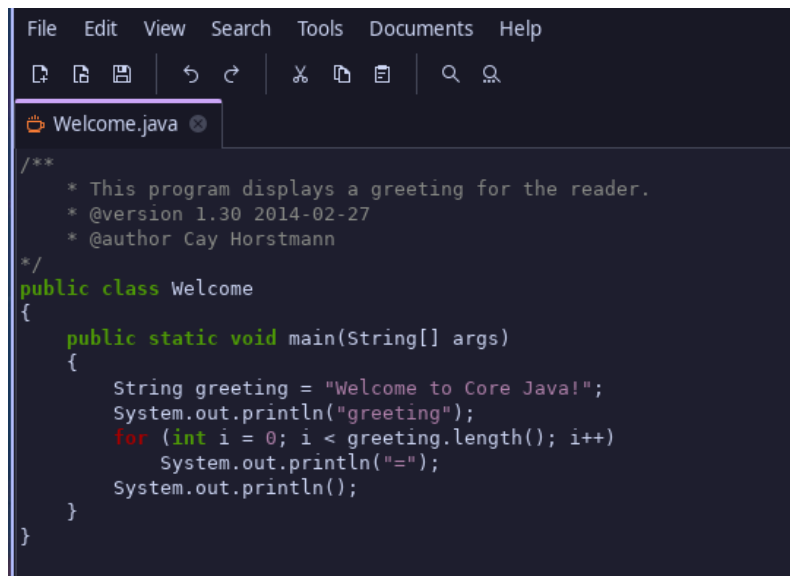
2.1. Setup Software Environment

1. Tugas
 1. Install Java Development Kit (JDK)
 2. Setting up JDK
 1. Ikuti petunjuk pada 2.1.2 Setting up JDK
 3. Test pada command prompt *Java -version*
2. Screenshot Hasil Akhir Program

```
arney1@arney1-IdeaPad-3-14ALC6:~$ java -version
openjdk version "21.0.6" 2025-01-21
OpenJDK Runtime Environment (build 21.0.6+7-Ubuntu-124.04.1)
OpenJDK 64-Bit Server VM (build 21.0.6+7-Ubuntu-124.04.1, mixed mode, sharing)
arney1@arney1-IdeaPad-3-14ALC6:~$
```

2.2. Using Notepad and Command Line Tools

1. Screenshot Hasil Akhir Program



```
File Edit View Search Tools Documents Help
Welcome.java
/**
 * This program displays a greeting for the reader.
 * @version 1.30 2014-02-27
 * @author Cay Horstmann
 */
public class Welcome
{
    public static void main(String[] args)
    {
        String greeting = "Welcome to Core Java!";
        System.out.println(greeting);
        for (int i = 0; i < greeting.length(); i++)
            System.out.println("=");
        System.out.println();
    }
}
```

```

arney1@arney1-IdeaPad-3-14ALC6:~/Documents/School/Spring 2025/Programming Techniques/P/1/02. U
sing Notepad & Command Line Tools$ javac Welcome.java
arney1@arney1-IdeaPad-3-14ALC6:~/Documents/School/Spring 2025/Programming Techniques/P/1/02. U
sing Notepad & Command Line Tools$ java Welcome
Welcome to Core Java!

arney1@arney1-IdeaPad-3-14ALC6:~/Documents/School/Spring 2025/Programming Techniques/P/1/02. U
sing Notepad & Command Line Tools$ 

```

2.3. Using an Integrated Developoment Environment

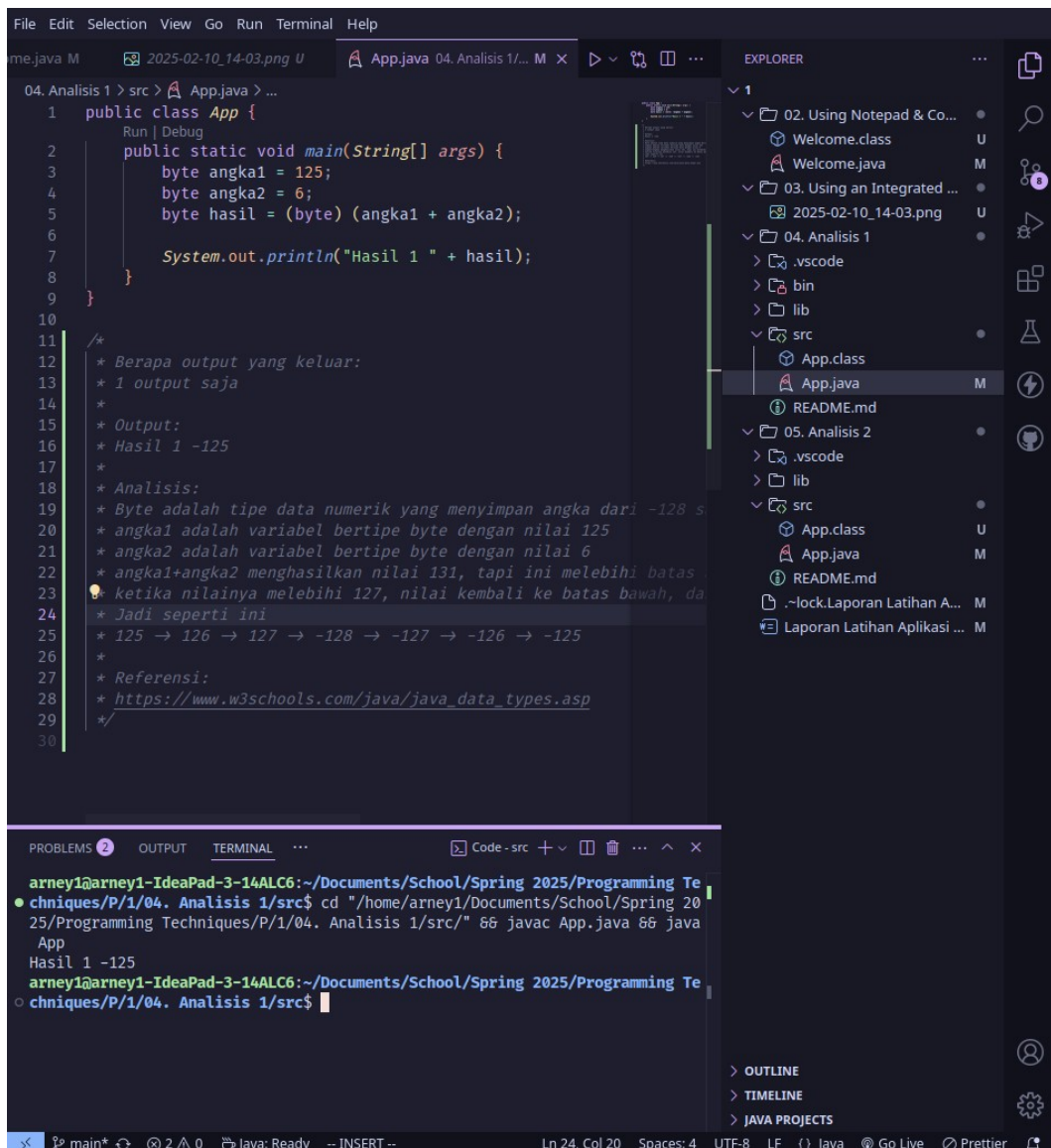
1. Menggunakan VSCodeium (<https://vscodium.com/>)
2. Screenshot Hasil Akhir Program

The screenshot shows the VS Code interface with the following components:

- Editor:** Displays the code for `Welcome.java`. The code includes a comment block and a `main` method that prints "Welcome to Core Java!".
- EXPLORER:** Shows the file structure of the project, including folders for analysis and source files.
- TERMINAL:** Shows the command prompt where the Java program is compiled and executed. The output "Welcome to Core Java!" is displayed, highlighted with a red box and labeled "Output".

2.4. Soal Analisis 1

1. Screenshot Hasil Akhir Program



2. Jawaban Soal

1. Berapa output yang keluar?

1. Satu output, yaitu “Hasil 1 -125”

2. Tuliskan alasan dan referensinya

1. Byte adalah tipe data numerik yang menyimpan angka dari -128 sampai 127. `angka1` adalah variabel bertipe byte dengan nilai 125. `angka2` adalah variabel bertipe byte dengan nilai 6. `angka1+angka2` menghasilkan nilai 131, tapi ini melebihi batas atas tipe data byte, sehingga terjadi overflow. ketika nilainya melebihi 127, nilai kembali ke batas bawah, dan operasi tetap berlanjut. Jadi seperti ini:

125 -> 126 -> 127 -> -128 -> -127 -> -126 -> -125

2. Referensi:

1. https://www.w3schools.com/java/java_data_types.asp

2.5. Soal Analisis 2

1. Screenshot Hasil Akhir Program

The screenshot shows a VS Code editor with a Java file named `App.java` in the `src` directory. The code defines a `main` method that uses a ternary operator to assign a value to `s` based on the value of `i`. The output of the program is displayed in the `OUTPUT` panel, showing the word `everything`. The `TERMINAL` panel shows the command `javac App.java` and the command `java App` being executed. The `EXPLORER` panel shows the project structure, including the `src` directory and the `App.class` file.

```
1 public class App {
2     public static void main(String[] args) {
3         String s = (i < 40) ? "life" : (i > 50) ? "universe" : "everything";
4         System.out.println(s);
5     }
6 }
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
```

Output:

```
* everything
*
* Teknik yang digunakan:
* Saya kurang mengerti disini "teknik" itu maksudnya apa, tapi a
* menggunakan Operasi Ternary
* Operasi ternary bekerja seperti if else
* syntax: variable = (condition) ? expressionTrue : expressionFalse
* jika condition = true, maka variable = expressionTrue
* jika condition = false, maka variable = expressionFalse
*/
```

arney1@arney1-IdeaPad-3-14ALC6:~/Documents/School/Spring 2025/Programming Techniques/P/1/04. Analisis 1/src\$ cd "/home/arney1/Documents/School/Spring 2025/Programming Techniques/P/1/05. Analisis 2/src/" && javac App.java && java App

everything

arney1@arney1-IdeaPad-3-14ALC6:~/Documents/School/Spring 2025/Programming Techniques/P/1/05. Analisis 2/src\$

2. Jawaban Soal

1. Bagaimana output setelah dijalankan

1. “everything”

2. Teknik yang digunakan

1. Algoritma ini menggunakan Operasi Ternary. Operasi ternary bekerja seperti if else. Syntax:

variable = (condition) ? expressionTrue : expressionFalse

Jika condition = true, maka variable = expressionTrue. Jika condition = false, maka variable = expressionFalse

BAB III TEMUAN (LESSON LEARNED)

1. Operasi Ternary, untuk mempersingkat algoritma if-else, tetapi menurut saya ini membuat kode susah dibaca.
2. Di Java, ketika nilai melampaui batas atas tipe data (overflow), maka nilai kembali ke batas bawah, dan operasi tetap berlanjut