LAPORAN PRAKTIKUM

Praktikum Pemrograman Berorientasi Objek

Instalasi Java dan Tugas 1 Praktikum PBO

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Praktikum #1 Pemrograman Berorientasi Objek

1. Install java dengan perintah **sudo apt install default-jdk**

```
mazharrasyad@mazharrasyad: ~
mazharrasyad@mazharrasyad:~$ javac -version
The program 'javac' can be found in the following packages:
 * default-jdk
 * ecj
 * gcj-5-jdk
 * openjdk-8-jdk-headless
 * gcj-4.8-jdk
 * gcj-4.9-jdk
 * openjdk-9-jdk-headless
Try: sudo apt install <selected package>
mazharrasyad@mazharrasyad:~$ java -version
The program 'java' can be found in the following packages:
 * default-jre
 * gcj-5-jre-headless
 * openjdk-8-jre-headless
 * gcj-4.8-jre-headless
 * gcj-4.9-jre-headless
 * openjdk-9-jre-headless
Try: sudo apt install <selected package>
mazharrasyad@mazharrasyad:~$
```

```
mazharrasyad@mazharrasyad: ~
mazharrasyad@mazharrasyad:~$ sudo apt install default-jdk
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
  gir1.2-keybinder-3.0 libkeybinder-3.0-0
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  ca-certificates-java default-jdk-headless default-jre default-jre-headless
  openjdk-8-jdk openjdk-8-jdk-headless openjdk-8-jre openjdk-8-jre-headless
Suggested packages:
  default-java-plugin openjdk-8-demo openjdk-8-source visualvm
  icedtea-8-plugin fonts-ipafont-gothic fonts-ipafont-mincho fonts-wqy-zenhei
  fonts-indic
The following NEW packages will be installed:
  ca-certificates-java default-jdk default-jdk-headless default-jre
  default-jre-headless openjdk-8-jdk openjdk-8-jdk-headless openjdk-8-jre
  openjdk-8-jre-headless
0 upgraded, 9 newly installed, 0 to remove and 0 not upgraded.
Need to get 35,7 MB of archives.
After this operation, 140 MB of additional disk space will be used.
Do you want to continue? [Y/n]
```

Process… (Skip)

```
mazharrasyad@mazharrasyad: ~
Linux Cert Store Sync - version 4.2.1.0
Synchronize local certs with certs from local Linux trust store.
Copyright 2002, 2003 Motus Technologies. Copyright 2004-2008 Novell. BSD license
d.

I already trust 149, your new list has 148
Import process completed.
Done
done.
mazharrasyad@mazharrasyad:~$
```

```
mazharrasyad@mazharrasyad: ~
mazharrasyad@mazharrasyad:~$ javac -version
javac 1.8.0_181
mazharrasyad@mazharrasyad:~$ java -version
openjdk version "1.8.0_181"
OpenJDK Runtime Environment (build 1.8.0_181-8u181-b13-0ubuntu0.16.04.1-b13)
OpenJDK 64-Bit Server VM (build 25.181-b13, mixed mode)
mazharrasyad@mazharrasyad:~$
```

2. Ketik kode program berikut difile **Salam.java**

```
public class Salam
{
  public static void main(String ar[])
  {
    System.out.println("Assalamualaikum..");
  }
}
```

3. **Compile** dan jalankan Salam.java

```
mazharrasyad@Mazharrasyad: ~/PBO/Praktikum 1
mazharrasyad@Mazharrasyad:~/PBO/Praktikum 1$ javac Salam.java
mazharrasyad@Mazharrasyad:~/PBO/Praktikum 1$ java Salam
Assalamualaikum..
mazharrasyad@Mazharrasyad:~/PBO/Praktikum 1$
```

4. Deklarasi variabel-variabel berikut difile **DemoVariable.java**

Nama variabel	Nilai	Tipe data
a	5	int
b	3	int
c	a/b	int
d	a/b	float
e	“hello”	String
f	'1'	char

```
public class DemoVariable
{
  public static void main(String ar[])
  {
    // Deklarasi variabel
    int a = 5;
    int b = 3;
    int c = a / b;
    float d = a / b;
    String e = "hello";
    char f = '1';

    System.out.println("Nilai a : " + a);
    System.out.println("Nilai b : " + b);
    System.out.println("Nilai c : " + c);
    System.out.println("Nilai d : " + d);
```

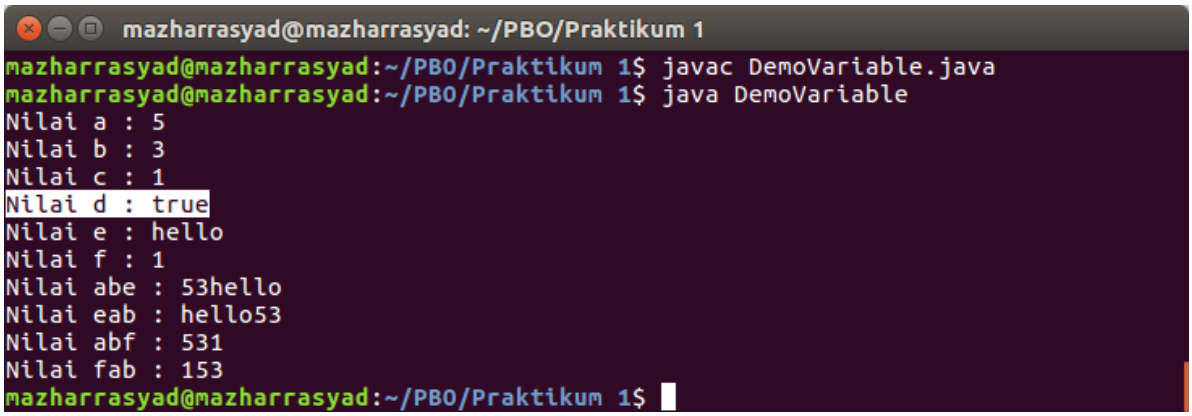
```
    System.out.println("Nilai e : " + e);
    System.out.println("Nilai f : " + f);
    System.out.println("Nilai abe : " + a + b + e);
    System.out.println("Nilai eab : " + e + a + b);
    System.out.println("Nilai abf : " + a + b + f);
    System.out.println("Nilai fab : " + f + a + b);
  }
}
```

```
mazharrasyad@mazharrasyad: ~/PBO/Praktikum 1
mazharrasyad@mazharrasyad:~/PBO/Praktikum 1$ javac DemoVariable.java
mazharrasyad@mazharrasyad:~/PBO/Praktikum 1$ java DemoVariable
Nilai a : 5
Nilai b : 3
Nilai c : 1
Nilai d : 1.0
Nilai e : hello
Nilai f : 1
Nilai abe : 53hello
Nilai eab : hello53
Nilai abf : 531
Nilai fab : 153
mazharrasyad@mazharrasyad:~/PBO/Praktikum 1$
```

5. **Ubah variabel d** pada file DemoVariable.java agar nilai variabel d menjadi benar

```
public class DemoVariable
{
  public static void main(String ar[])
  {
    // Deklarasi variabel
    int a = 5;
    int b = 3;
    int c = a / b;
    // float d = a / b;
    boolean d = true;
    String e = "hello";
    char f = '1';

    System.out.println("Nilai a : " + a);
    System.out.println("Nilai b : " + b);
    System.out.println("Nilai c : " + c);
    System.out.println("Nilai d : " + d);
    System.out.println("Nilai e : " + e);
    System.out.println("Nilai f : " + f);
    System.out.println("Nilai abe : " + a + b + e);
    System.out.println("Nilai eab : " + e + a + b);
    System.out.println("Nilai abf : " + a + b + f);
    System.out.println("Nilai fab : " + f + a + b);
  }
}
```



6. **Tulislah rumus berikut dalam bahasa java**

$$s = s_0 + v_0 t + \frac{1}{2} g t^2$$

```
s = s0 + (v0 * t) + (0.5 * g * (t * t));
```

$$G = 4\pi^2 \frac{a^3}{p^2(m_1 + m_2)}$$

```
G = ((4 * (phi * phi)) * (a * a * a)) / ((p * p) * (m1 + m2));
```

$$FV = PV \cdot \left(1 + \frac{INT}{100}\right)^{YRS}$$

```
FV = PV * Math.pow((1 + (INT / 100)), YRS);
```

$$c = \sqrt{a^2 + b^2 - 2ab\cos\gamma}$$

```
c = Math.sqrt((a * a) + (b * b) - (2 * a * b * Math.cos(y)));
```

7. **Buatlah sebuah program yang mencetak warna keramik** (1 untuk hitam, 0 untuk putih) jika diberikan angka baris dan kolom.

```
import java.util.*;

public class PapanCatur
{
  public static void main(String [] args)
  {
    int baris, kolom;
    String posisi;
    int i, j, n;

    Scanner in = new Scanner(System.in);

    System.out.println("===== Papan Catur =====");
    System.out.print("\nMasukkan jumlah baris dan kolom : ");
    n = in.nextInt();
    System.out.println();

    System.out.print("    ");
    for(i = 0; i < n; i++)
    {
      System.out.print(" " + (i + 1));
    }
    System.out.print(" --> Kolom\n");

    System.out.print("    ");
    for(i = 0; i < n; i++)
    {
      System.out.print(" _");
    }
    System.out.println();

    for(i = 0; i < n; i++)
    {
      System.out.print(" " + (i + 1) + " | ");
      for(j = 0; j < n; j++)
      {
        if((i + j) % 2 == 0)
        {
            System.out.print("1 ");
        }
        else
        {
            System.out.print("0 ");
        }
      }
      System.out.println();
    }
    System.out.print(" |\n V\nBaris\n\n");

    System.out.print("Masukkan posisi baris (B) : ");
    baris = in.nextInt();
    System.out.print("Masukkan posisi kolom (K) : ");
```

```
    kolom = in.nextInt();

    if((baris + kolom) % 2 == 0)
    {
      posisi = "1 (Hitam)";
    }
    else
    {
      posisi = "0 (Putih)";
    }
    System.out.println("\nBaris ke " + baris + " kolom ke " +
     kolom + " : " + posisi);
  }
}
```

```
mazharrasyad@mazharrasyad: ~/PBO/Praktikum 1
mazharrasyad@mazharrasyad:~/PBO/Praktikum 1$ javac PapanCatur.java
mazharrasyad@mazharrasyad:~/PBO/Praktikum 1$ java PapanCatur
===== Papan Catur =====

Masukkan jumlah baris dan kolom : 4

     1 2 3 4 --> Kolom
     _ _ _ _
 1 | 1 0 1 0
 2 | 0 1 0 1
 3 | 1 0 1 0
 4 | 0 1 0 1
 |
 V
Baris

Masukkan posisi baris (B) : 3
Masukkan posisi kolom (K) : 2

Baris ke 3 kolom ke 2 : 0 (Putih)
mazharrasyad@mazharrasyad:~/PBO/Praktikum 1$
```

```
mazharrasyad@mazharrasyad: ~/PBO/Praktikum 1
mazharrasyad@mazharrasyad:~/PBO/Praktikum 1$ java PapanCatur
===== Papan Catur =====

Masukkan jumlah baris dan kolom : 4

     1 2 3 4 --> Kolom
     _ _ _ _
 1 | 1 0 1 0
 2 | 0 1 0 1
 3 | 1 0 1 0
 4 | 0 1 0 1
 |
 V
Baris

Masukkan posisi baris (B) : 4
Masukkan posisi kolom (K) : 2

Baris ke 4 kolom ke 2 : 1 (Hitam)
mazharrasyad@mazharrasyad:~/PBO/Praktikum 1$
```

---------- *Selesai* ----------