

# TUGAS 1

## PRAKTIKUM PBO

Nama : Mohammad Rafli Sumaryono  
Kelas : C  
Nim : 1227050076

---

### 1. Praktikum 1

Hello.java

```
J Hello.java x
J Hello.java
1 public class Hallo {
2     public static void main(String[] args) {
3         System.out.println("Hallo...");
4     }
5 }
```

Output

```
iles\Java\jdk-20\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\User
s\fahmi\AppData\Roaming\Code\User\workspaceStorage\06ca6a1ccce8668d817c32c53072fd68\red
hat.java\jdt_ws\Pert 2 java sc_785455ff\bin' 'Hallo'
Hallo...
```

Latihan 2

File harus di pisah jadi 2

TestGreeting.java

```
J TestGreeting.java > ...
1 public class TestGreeting {
    Run | Debug
2     public static void main(String[] args) {
3         Greeting hello = new Greeting();
4         hello.greet();
5     }
6
7 }
```

Greeting.java

```
J Greeting.java > ...
1 public class Greeting {
2     public void greet() {
3         System.out.println(x:"Hi.");
4     }
5 }
6
```

Output

```
PS C:\Users\fahmi\Documents\Rafli\Semester 4\Prak.PBO\Pert 2 java sc> & 'C:\Program F
iles\Java\jdk-20\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Use
rs\fahmi\AppData\Roaming\Code\User\workspaceStorage\06ca6a1ccce8668d817c32c53072fd68\r
edhat.java\jdt_ws\Pert 2 java sc_785455ff\bin' 'TestGreeting'
Hi.
PS C:\Users\fahmi\Documents\Rafli\Semester 4\Prak.PBO\Pert 2 java sc>
```

### Latihan 3

File harus di pisah jadi 2

#### Test1.java

```
1 public class Test1 {  
    Run | Debug  
2     public static void main(String[] args) {  
3         System.out.println(x:"what's wrong with this program?");  
4     }  
5 }  
6
```

#### TestAnother1.java

```
1 public class TestAnother1 {  
    Run | Debug  
2     public static void main(String[] args) {  
3         System.out.println(x:"what's wrong with this program?");  
4     }  
5 }  
6
```

#### Output

```
PS C:\Users\fahmi\Documents\Rafli\Semester 4\Prak.PBO\Pert 2 java sc> & 'C:\Program Files\Java\jdk-20\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\fahmi\AppData\Roaming\Code\User\workspaceStorage\06ca6a1ccce8668d817c32c53072fd68\redhat.java\jdt_ws\Pert 2 java sc_785455ff\bin' 'Test1'  
what's wrong with this program?
```

```
PS C:\Users\fahmi\Documents\Rafli\Semester 4\Prak.PBO\Pert 2 java sc> & 'C:\Program Files\Java\jdk-20\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\fahmi\AppData\Roaming\Code\User\workspaceStorage\06ca6a1ccce8668d817c32c53072fd68\redhat.java\jdt_ws\Pert 2 java sc_785455ff\bin' 'TestAnother1'  
what's wrong with this program?
```

### Latihan 4

Nama class harus sama dengan nama file

#### Test2.java

```
1 public class Test2 {  
    Run | Debug  
2     public static void main(String[] args) {  
3         System.out.println(x:"what's wrong with this program?");  
4     }  
5 }  
6
```

#### Output

```
PS C:\Users\fahmi\Documents\Rafli\Semester 4\Prak.PBO\Pert 2 java sc> & 'C:\Program Files\Java\jdk-20\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\fahmi\AppData\Roaming\Code\User\workspaceStorage\06ca6a1ccce8668d817c32c53072fd68\redhat.java\jdt_ws\Pert 2 java sc_785455ff\bin' 'Test2'  
what's wrong with this program?
```

### Latihan 5

Kurang kurung siku siku setelah string (String “[]” args)

#### Test3.java

```
J Test3.java > ...
1 public class Test3 {
    Run | Debug
2     public static void main(String[] args) {
3         System.out.println(x:"what's wrong with this program?");
4     }
5 }
6
```

## Output

```
PS C:\Users\fahmi\Documents\Rafli\Semester 4\Prak.PBO\Pert 2 java sc> & 'C:\Program Files\Java\jdk-20\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\fahmi\AppData\Roaming\Code\User\workspaceStorage\06ca6a1ccce8668d817c32c53072fd68\redhat.java\jdt_ws\Pert 2 java_sc_785455ff\bin' 'Test3'
what's wrong with this program?
```

## 2. Praktikum 2a

- Percobaan 1

```
public class Assign {
    public static void main(String [] args) {
        // declare integer variables
        int x, y;
        // declare and assign floating point
        float z = 3.414f;
        // declare and assign double
        double w = 3.1415;
        // declare and assign boolean
        boolean truth = true;
        // declare character variable
        char c;
        // declare String variable
        String str;
        // declare and assign String variable
        String str1 = "bye";
        // assign value to char variable
        c = 'A';
        // assign value to String variable
        str = "Hi out there!";
        // assign values to int variables
        x = 6;
        y = 1000;
    }
}
```

- Percobaan 2

```
public class DefValue{
static boolean b;
```

```

static int i;
static double d;
static long l;
static char c;
static float f;
static byte y;

public static void main(String[] args) {
    DefValue val = new DefValue();
    System.out.println("Default boolean : " + val.b);
    System.out.println("Default integer : " + val.i);
    System.out.println("Default double: " + val.d);
    System.out.println("Default long: " + val.l);
    System.out.println("Default float: " + val.f);
    System.out.println("Default byte : " + val.y);
    System.out.println("Default char: " + val.c);
}
}

```

### Output

```

PS C:\Users\fahmi\Documents\Rafli\Semester 4\Prak.PBO\Pert 2 java sc> & 'C:\Program Files\Java\jdk-20\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\fahmi\AppData\Roaming\Code\User\workspaceStorage\06ca6a1ccce8668d817c32c53072fd68\redhat.java\jdt_ws\Pert 2 java sc_785455ff\bin' 'DefValue'
Default boolean :false
Default integer :0
Default double: 0.0
Default long:0
Default float: 0.0
Default byte : 0
Default char:

```

- Percobaan 3

```

public class PassTest {
    public static void changeInt(int value) {
        value = 55;
    }

    public static void changeObjectRef(MyDate ref) {
        ref = new MyDate(1, 1, 2000);
    }

    public static void changeObjectAttr(MyDate ref) {
        ref.setDay(4);
    }
}

```

```

    }

    public static void main(String[] args) {
        MyDate date;
        int val;
        val = 11;
        changeInt(val);
        System.out.println("Int value is: " + val);
        date = new MyDate(22, 7,
                           1964);
        changeObjectRef(date);
        date.print();
        changeObjectAttr(date);
        date.print();
    }
}

class MyDate {
    private int day, month, year;

    public MyDate(int day, int month, int year) {
        this.day = day;
        this.month = month;
        this.year = year;
    }

    public void setDay(int day) {
        this.day = day;
    }

    public void setMonth(int month) {
        this.month = month;
    }

    public void setYear(int year) {
        this.year = year;
    }

    public void print() {
        System.out.println(day + " " + month + " " + year);
    }
}

```

```
}
}
```

### Output

```
PS C:\Users\fahmi\Documents\Rafli\Semester 4\Prak.PBO\Pert 2 java sc> & 'C:\Program Files\Java\jdk-20\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\fahmi\AppData\Roaming\Code\User\workspaceStorage\06ca6a1ccce8668d817c32c53072fd68\r\nedhat.java\jdt_ws\Pert 2 java_sc_785455ff\bin' 'PassTest'
Int value is: 11
22 7 1964
4 7 1964
```

- Percobaan 4

```
public class Octal {
public static void main(String[] args) {
int six = 06;
int seven = 07;
int eight = 010;
int nine = 011;
System.out.println("Octal six =" + six);
System.out.println("Octal seven =" + seven);
System.out.println("Octal eight=" + eight);
System.out.println("Octal nine =" + nine);
}
}
```

### Output

```
PS C:\Users\fahmi\Documents\Rafli\Semester 4\Prak.PBO\Pert 2 java sc> & 'C:\Program Files\Java\jdk-20\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\fahmi\AppData\Roaming\Code\User\workspaceStorage\06ca6a1ccce8668d817c32c53072fd68\r\nedhat.java\jdt_ws\Pert 2 java_sc_785455ff\bin' 'Octal'
Octal six =6
Octal seven =7
Octal eight=8
Octal nine =9
```

- Percobaan 5

```
public class CobaUnicode {
public static void main(String [] args) {
ch\u0061r a = 'a';
char \u0062 = 'b';
char c = '\u0063';
String kata = "\u0061\u0062\u0063";
```

```

System.out.println("a: "+ a);
System.out.println("b: "+ b);
System.out.println("c: "+c);
System.out.println("kata: "+ kata);
}
}

```

### Output

```

PS C:\Users\fahmi\Documents\Rafli\Semester 4\Prak.PBO\Pert 2 java sc> & 'C:\Program Files\Java\jdk-20\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\fahmi\AppData\Roaming\Code\User\workspaceStorage\06ca6a1ccce8668d817c32c53072fd68\redhat.java\jdt_ws\Pert 2 java_sc_785455ff\bin' 'CobaUnicode'
a: a
b: b
c: c
kata: abc

```

- Percobaan 6

```

public class PrimitifConversionAssignment{

    public static void main(String[] args) {

        int i;
        double d;

        i = 10;
        d = (double) i;
        System.out.println("Nilai d = " + d);
    }
}

```

### Output

```

PS C:\Users\fahmi\Documents\Rafli\Semester 4\Prak.PBO\Pert 2 java sc> c:; cd 'c:\Users\fahmi\Documents\Rafli\Semester 4\Prak.PBO\Pert 2 java_sc'; & 'C:\Program Files\Java\jdk-20\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\fahmi\AppData\Roaming\Code\User\workspaceStorage\06ca6a1ccce8668d817c32c53072fd68\redhat.java\jdt_ws\Pert 2 java_sc_785455ff\bin' 'PrimitifConversionAssignment'
Nilai d = 10.0

```

Variable i harus di konversi dulu ke dalam double agar tipe data nya sama dengan variable d

- Percobaan 7

```

class PrimitifConversionAssignment2 {
public static void main(String[] arg) {
double d;
short s;

```

```
d = 1.2345;
s = (short)d; // Assign a double to a short variable
System.out.print("Nilai s:" + s);
}
}
```

### Output

```
PS C:\Users\fahmi\Documents\Rafli\Semester 4\Prak.PBO\Pert 2 java sc> c:; cd 'c:\User
s\fahmi\Documents\Rafli\Semester 4\Prak.PBO\Pert 2 java sc'; & 'C:\Program Files\Java\
jdk-20\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\fahmi\A
ppData\Roaming\Code\User\workspaceStorage\06ca6a1ccce8668d817c32c53072fd68\redhat.java
\jdt_ws\Pert 2 java_sc_785455ff\bin' 'PrimitifConversionAssignment2'
Nilai s:1
```

Variable d harus di coneversi dulu ke dalam short agar tipe data nya sama dengan variable s.

- Percobaan 8

```
public class Primitive {
    public static void main(String[] args) {
        int i = 259;
        byte b = (byte) i;
        System.out.println("Hasil = " + b);
    }
}
```

### Output

```
PS C:\Users\fahmi\Documents\Rafli\Semester 4\Prak.PBO\Pert 2 java sc> & 'C:\Program F
iles\Java\jdk-20\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Use
rs\fahmi\AppData\Roaming\Code\User\workspaceStorage\06ca6a1ccce8668d817c32c53072fd68\r
edhat.java\jdt_ws\Pert 2 java_sc_785455ff\bin' 'Primitive'
Hasil = 3
```

- Percobaan 9

```
public class AssignPrimitive {
    public static void main(String[] args) {
        double f = 2.323232;
        short s = (short) f;
        System.out.println("Hasil = " + s);
    }
}
```

Hasil = 2 (dibulatkan karna dalam short tidak ada (.) decimal

### Output

```
PS C:\Users\fahmi\Documents\Rafli\Semester 4\Prak.PBO\Pert 2 java sc> & 'C:\Program F
iles\Java\jdk-20\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Use
rs\fahmi\AppData\Roaming\Code\User\workspaceStorage\06ca6a1ccce8668d817c32c53072fd68\r
edhat.java\jdt_ws\Pert 2 java_sc_785455ff\bin' 'AssignPrimitive'
Hasil = 2
```



### 3. Praktikum 2b

- Percobaan 10

```
public class IncDec {
    public static void main(String args[]) {
        int a = 1, b = 9;
        System.out.println("Nilai sebelum increment-
decrement");
        System.out.println("a=" + a + "; b = " + b);
        a = ++a;
        b = --b;
        System.out.println("Nilai setelah increment-
decrement");
        System.out.println("a= " + a + "; b = " + b);
    }
}
```

#### Output

```
PS C:\Users\fahmi\Documents\Rafli\Semester 4\Prak.PBO\Pert 2 java sc> & 'C:\Program F
iles\Java\jdk-20\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Use
rs\fahmi\AppData\Roaming\Code\User\workspaceStorage\06ca6a1ccce8668d817c32c53072fd68\r
edhat.java\jdt_ws\Pert 2 java sc_785455ff\bin' 'IncDec'
Nilai sebelum increment-decrement
a=1; b = 9
Nilai setelah increment-decrement
a= 2; b = 8
```

- Percobaan 11

```
public class Complement {
    public static void main(String args[]) {
        int i;
        i = ~7;
        System.out.println("Hasil operasi ~: " + i);
    }
}
```

```
Hasil operasi ~: -8
```

- Percobaan 12

```
class TestConversions {
    public static void main(String[] args) {
        /** Widening **/
```

```

double d = 2.12345D;
float f = 150.50F;
long l = 15000L;
int i = 55;
char c = 20;
short s = 1000;
byte b = 126;
// following compile ok
System.out.println();
System.out.println("Implicit Widening conversions:");
System.out.println("-----");
System.out.println(" byte to short : \t -> " + (s =
b));

System.out.println(" short to int : \t -> " + (i = s));
System.out.println(" int to long : \t -> " + (l = i));
System.out.println(" long to float : \t -> " + (f =
l));

System.out.println(" float to double : \t -> " + (d =
f));

// following compile ok with cast
System.out.println();
System.out.println("Explicit Widening conversions:");
System.out.println("-----");
System.out.println("cast byte to char: \t -> " + (char)
b);

System.out.println("cast short to char: \t -> " +
(char) s);

/* Narrowing */
d = 150.234256321235489645;
System.out.println();
System.out.println("Implicit Narrowing conversions:");
System.out.println("-----");
System.out.println(" double to float : \t -> " + (f =
(float) d));

System.out.println(" float to long : \t -> " + (l =
(Long) f));

System.out.println(" long to int : \t -> " + (i = (int)
l));

```

```

        System.out.println(" int to short : \t -> " + (s =
(short) i));
        System.out.println(" short to byte : \t -> " + (b =
(byte) s));

    }
}

```

### Output

```

Implicit Widening conversions:
-----
byte to short :          -> 126
short to int :           -> 126
int to long :            ->126
long to float :          -> 126.0
float to double :        ->126.0

Explicit Widening conversions:
-----
cast byte to char:       ->~
cast short to char:      -> ~

Implicit Narrowing conversions:
-----
double to float :        -> 150.23425
float to long :           -> 150
long to int :            -> 150
int to short :           -> 150
short to byte :          -> -106

```

- Percobaan 13

```

public class ArithmeticOperator {
    public static void main(String[] args) {
        System.out.println();
    }
}

```

```

        System.out.println("Integer Division - results
truncated:");
        System.out.println("");
        System.out.println("\t 10 / 3 \t = " + (10 / 3));
        System.out.println("\t 10 / -3 \t = " + (10 / -3));
        System.out.println("\t -10 / 3 \t = " + (-10 / 3));
        System.out.println();
        System.out.println("Floating-point division by 0: ");
        System.out.println(" ");
        System.out.println("\t 10.34 / 0 \t = " + (10.34 / 0));
        System.out.println("\t -10.34 / 0 \t = " + (-10.34 /
0));
        System.out.println("\t 10.34 / -0 \t = " + (10.34 / -
0));

        System.out.println("\t 0.0 / 0 \t = " + (0.0 / 0));
        System.out.println("\t 0.0 / -0 \t = " + (0.0 / -0));
        System.out.println();
        System.out.println("Modulo operations: ");
        System.out.println(" ");
        System.out.println("\t 5 % 3 \t = " + (5 % 3));
        System.out.println("\t -5 % 3 \t = " + (-5 % 3));
        System.out.println("\t 5 % -3 \t = " + (5 % -3));
        System.out.println("\t 5.0 % 3 \t = " + (5.0 % 3));
        System.out.println("\t 5.0 % -3 \t = " + (5.0 % -3));
        System.out.println("\t -5.0 % 3 \t = " + (-5.0 % 3));
        System.out.println("\t 5.0 % 0 \t = " + (5.0 % 0));
    }
}

```

## Output

```
PS C:\Users\fahmi\Documents\Rafli\Semester 4\Prak.PBO\Pert 2 java sc> & 'C:\Program Files\Java\jdk-20\bin\java.exe' '-XX
:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\fahmi\AppData\Roaming\Code\User\workspaceStorage\06ca6a1ccce8668d81
7c32c53072fd68\redhat.java\jdt_ws\Pert 2 java_sc_785455ff\bin' 'ArithmeticOperator'
```

Integer Division - results truncated:

```
10 / 3      = 3
10 / -3     = -3
-10 / 3     = -3
```

Floating-point division by 0:

```
10.34 / 0    = Infinity
-10.34 / 0   = -Infinity
10.34 / -0   = Infinity
0.0 / 0      = NaN
0.0 / -0     = NaN
```

Modulo operations:

```
5 % 3    = 2
-5 % 3    = -2
5 % -3    = 2
5.0 % 3   = 2.0
5.0 % -3  = 2.0
-5.0 % 3  = -2.0
5.0 % 0   = NaN
```

- Percobaan 14

```
public class Shift {
    public static void main(String[] args) {
        int x = 7;
        System.out.println("x = " + x);
        System.out.println("x >> 2 = " + (x >> 2));
        System.out.println("x << 1 = " + (x << 1));
        System.out.println("x >>> 1 = " + (x >>> 1));
    }
}
```

## Output

```
PS C:\Users\fahmi\Documents\Rafli\Semester 4\Prak.PBO\Pert 2 java sc> & 'C:\Program Files\Java\jdk-20\bin\java.exe' '-XX
:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\fahmi\AppData\Roaming\Code\User\workspaceStorage\06ca6a1ccce8668d81
7c32c53072fd68\redhat.java\jdt_ws\Pert 2 java_sc_785455ff\bin' 'Shift'
x = 7
x >> 2 = 1
x << 1 = 14
x >>> 1 = 3
```

- Percobaan 15

```
public class Relational {
    public static void main(String[] args) {
        int x = 5, y = 6, z = 5;
        float f0 = 0.0f, f1 = -0.0f, f2 = 5.0f;
        System.out.println();
        System.out.println("Relational operators: ");
        System.out.println(" ");
        System.out.println();
    }
}
```

```

        System.out.println("Less than: 5 < 6 \t\t" + (x < y));
        System.out.println("Less than or equal to: 5 <= 6 \t\t"
+ (x <= z));
        System.out.println("Greater than: 5 > 6 \t\t" + (x >
y));
        System.out.println("Greater than equal to: 5 >= 5 \t\t"
+ (x >= z));
        System.out.println();
        System.out.println("Less than: -0.0 < 0.0 \t\t" + (f1 <
f0));
        System.out.println("Less than or equal to: -0.0 <= 0.0
\t\t" + (f1 <= f0));
        System.out.println("Greater than: 5 > NaN \t\t" + (x >
(f0 / f1)));
    }
}

```

## Output

```

Relational operators:

Less than: 5 < 6           true
Less than or equal to: 5 <= 6      true
Greater than: 5 > 6         false
Greater than equal to: 5 >= 5      true

Less than: -0.0 < 0.0       false
Less than or equal to: -0.0 <= 0.0    true
Greater than: 5 > NaN       false

```

- Percobaan 16

```

public class Equality {
    public static void main(String[] args) {
        int x = 5;
        float f2 = 5.0F;
        int[] arr1 = { 1, 2, 3 };
        int[] arr2 = { 4, 5, 6 };
        int[] arr3 = arr1;
        String s1 = "hello", s2 = "hello";
        String s3 = s1;
        String s4 = new String("hello");
        /** Equality
        *****/
    }
}

```

```
System.out.println();
System.out.println("Equality operators: ");
System.out.println("-----");
System.out.println();
System.out.println("\t\t\t\t\t Equals: 5 = 5.0\t\t\t" + (x
== f2));
System.out.println("\t\t Not Equal: 5 != 5.0 \t\t\t" + (x
!= f2));
System.out.println("\t\t\t\t\t Equals: arr1 == arr2 \t\t" +
(arr1 == arr2) + " [different array objects]");
System.out.println("\t\t\t\t\t Equals: arr1 == arr3 \t\t" +
(arr1 == arr3) + "[ref to same array object]");
System.out.println("\t\t Not Equal: arr1 != arr2 \t\t" +
(arr1 != arr2));
System.out.println("\t\t Not Equal: arr1 = arr3 \t\t" +
(arr1 != arr3));
System.out.println("\t\t Equals: s1 == s2 \t\t\t" + (s1 ==
s2) + "[same literal]");
System.out.println("\t\t\t\t\t Equals: si == s3 \t\t\t" +
(s1 == s3) + "[same object reference]");
System.out.println("\t\t\t\t\t Equals: s1 == s4 \t\t\t" +
(s1 == s4) + "[New object]");
    }
}
```

## Output

```
Equality operators:
-----

    Equals: 5 = 5.0           true
Not Equal: 5 != 5.0          false
    Equals: arr1 == arr2     false [different array objects]
    Equals: arr1 == arr3     true [ref to same array object]
Not Equal: arr1 != arr2      true
Not Equal: arr1 = arr3       false
Equals: s1 == s2             true[same literal]
    Equals: s1 == s3         true[same object reference]
    Equals: s1 == s4         false[New object]
```

## 4. Praktikum 2c

- Percobaan 17a

```

public class Bitwise {
    public static void main(String[] args) {
        int x = 5, y = 6;
        System.out.println("X = " + x);
        System.out.println("Y = " + y);
        System.out.println("X & Y = " + (x & y));
        System.out.println("X | Y = " + (x | y));
        System.out.println("X ^ Y = " + (x ^ y));
    }
}

```

## Ouput

```

X = 5
Y = 6
X & Y = 4
X | Y = 7
X ^ Y = 3

```

- Percobaan 18

```

class TestLogical {

    public static void main(String[] args) {
        boolean a = true;
        boolean b = true;
        boolean c = false;
        boolean d = false;

        System.out.println();
        System.out.println("Logical Operators:");
        System.out.println("-----");
        System.out.println();
        System.out.println("\t true & true = \t" + (a & b));
        System.out.println("\t true & false = \t" + (a & c));
        System.out.println("\t true ^ false = \t" + (a ^ c));
        System.out.println("\t true ^ true = \t" + (a ^ b));
        System.out.println("\t true | false = \t" + (a | b));
        System.out.println("\t false | false = \t" + (c | d));
        System.out.println();
        System.out.println("\t true && true = \t" + (a && b));
        System.out.println("\t false && true = \t" + (c && a));
        System.out.println();
    }
}

```



```

        System.out.println("\t false || true = \t" + (c || a));
        System.out.println("\t false || false = \t" + (c ||
d));
        System.out.println("\t true || false = \t" + (a || d));
        System.out.println("\t true || true = \t" + (a || b));
    }
}

```

## Output

```

Logical Operators:
-----

true & true = true
true & false = false
true ^ false = true
true ^ true = false
true | false = true
false | false = false

true && true = true
false && true = false

false || true = true
false || false = false
true || false = true
true || true = true

```

- Percobaan 19

```

public class Conditional {
    public static void main(String[] args) {
        int x = 0;
        boolean isEven = false;
        System.out.println("x = " + x);
        x = isEven ? 4 : 7;
        System.out.println("x = " + x);
    }
}

```

## Output

```

PS C:\Users\fahmi\Documents\Rafli\Semester 4\Prak.PBO\Pert 2 java sc> & 'C:\Program Files\Java\jdk-20\bin\java.exe' '-XX
:ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\fahmi\AppData\Roaming\Code\User\workspaceStorage\06ca6a1ccce8668d81
7c32c53072fd68\redhat.java\jdt_ws\Pert 2 java_sc_785455ff\bin' 'Conditional'
x = 0
x = 7

```

- Percobaan 20

```

public class ConditionalOp {
    public static void main(String[] args) {
        int nilai = 55;
    }
}

```

```
        boolean lulus;

        lulus = (nilai > 60) ? true : false;
        System.out.println("Anda Lulus? " + lulus);
    }
}
```

## Output

```
PS C:\Users\fahmi\Documents\Rafli\Semester 4\Prak.PBO\Pert 2 java sc> c::; cd 'c:\Users\fahmi\Documents\Rafli\Semester 4\Prak.PBO\Pert 2 java sc'; & 'C:\Program Files\Java\jdk-20\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\fahmi\AppData\Roaming\Code\User\workspaceStorage\06ca6a1ccce8668d817c32c53072fd68\redhat.java\jdt_ws\Pert 2 java sc_785455ff\bin' 'ConditionalOp'
Anda Lulus? false
```