# PEMROGRAMAN BERORIENTASI OBJEK

## RELASI ANTAR KELAS

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# INNER CLASS - JAVA (1)

```
class Calculator{

  private Operasi opr;

  Calculator(){
     opr = new Operasi();
  }

  Operasi getOpr(){
     return opr;
  }

 class Operasi{

       Operasi(){
       }

       int tambah(int x, int y){
          return (x + y);
       }

       int kurang(int x, int y){
          return (x - y);
       }

       int kali(int x, int y){
          return (x * y);
       }

       int bagi(int x, int y){
          if(y > 0){
             return (x / y);
          }
          else{
             return -999999;
          }
       }

    }

}
```

# INNER CLASS - JAVA (2)

```
import java.util.Scanner;


class Main{

public static void main(String[]
    args){


        int menu = 0;

        int x = 0;

        int y = 0;


Calculator cal = new Calculator();


 System.out.println("masukkan
    menu");
```

```
Scanner sc = new Scanner(System.in);
        try{
            menu = sc.nextInt();
        }catch(Exception e){
        }
System.out.println("masukkan x");
        try{
            x = sc.nextInt();
        }catch(Exception e){
        }
System.out.println("masukkan y");
        try{
            y = sc.nextInt();
        }catch(Exception e){
        }
```

# INNER CLASS - JAVA (3)

```
  switch(menu){
        case 1 :
 System.out.println(
 cal.getOpr().tambah(x,y));
         break;
        case 2 :
 System.out.println(
 cal.getOpr().kurang(x,y));
         break;
        case 3 :
 System.out.println(
 cal.getOpr().kali(x,y));
         break;
        case 4 :
 System.out.println(
   cal.getOpr().bagi(x,y));
         break;
       }
   }
}
```

# ARRAY DI JAVA - 1 DIMENSI

```
import java.util.Scanner;

public class CobaArray{
   public static void main(String args[]){
      int arr[] = new int[5];
      arr[0] = 9;

      System.out.println("isi array ke-0 " + arr[0]);

      int i = 0; // di java versi baru harus ada inisialisasi
      int e = 0;
      Scanner scan = new Scanner(System.in);

      for(i=0;i<5;i++){
        arr[i] = scan.nextInt();
        System.out.println("Isi array ke: " + i + " adalah " +
   arr[i]);
      }
   }
}
```

# ARRAY KELAS DI JAVA - 1 DIMENSI

```
import java.awt.Point;
import java.util.Scanner;

public class ArrayPoint{
  public static void main(String args[]){
    Point arrPoint[] = new Point[2];

    int i = 0;
    int x = 0;
    int y = 0;

    Scanner scan = new Scanner(System.in);

    for(i=0;i<arrPoint.length;i++){
        x = scan.nextInt();
        y = scan.nextInt();
          arrPoint[i] = new Point(x,y);
        System.out.println("x: " + arrPoint[i].x + " y: " + arrPoint[i].y);
    }
  }
}
```

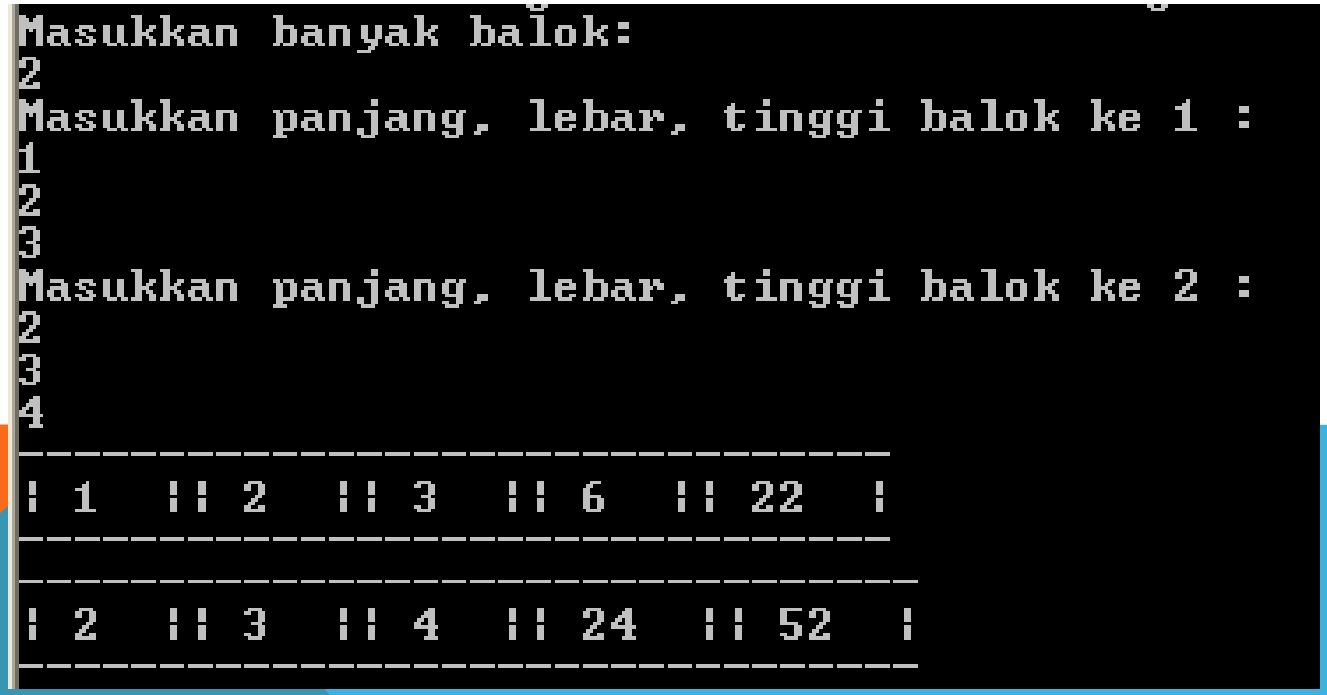
# ARRAY DI JAVA - 2 DIMENSI

```
import java.util.Scanner;

public class Array2Dimensi{
  public static void main(String args[]){
     int arr[][]= new int[2][3];
     int i = 0, j = 0;

     Scanner scan = new Scanner(System.in);

     for(i=0;i<arr.length;i++){
        for(j=0;j<arr[i].length;j++){
           arr[i][j] = scan.nextInt();
           System.out.println(arr[i][j]);
        }
     }
  }
}
```

# BAGAIMANA MEMBUAT PROGRAM DENGAN RELASI KELAS

**Menampilkan tabel untuk beberapa ukuran balok**

- **Kelas Balok**
- **Kelas Tabel**
- **Kelas Main**



# KELAS BALOK

```
public class Balok{
    private int panjang;
    //panjang balok
    private int lebar;
    //lebar balok
    private int tinggi;
    //tinggi balok

    Balok(){
    //konstruktor kosong
    }

    Balok(int panjang, int lebar, int
    tinggi){
    //konstruktor langsung isi
    atribut
          this.panjang = panjang;
          this.lebar = lebar;
          this.tinggi = tinggi;
    }
```

```
    //get set
    ..................

    public int volume(){
    //menghitung volume balok
          return (panjang * lebar *
    tinggi);
    }

    public int luas(){
    //menghitung luas balok
          return ((2 * panjang *
    lebar) + (2 * panjang * tinggi) +
    (2 * lebar * tinggi));
    }
}
```

# KELAS TABEL (1)

```
public class Tabel{
    private int baris;
    //banyaknya baris
    private int kolom;
    //banyaknya kolom

    Tabel(){
    //konstruktor kosong
    }

    Tabel(int baris, int kolom){
    //konstruktor langsung mengisi
    atribut
          this.baris = baris;
          this.kolom = kolom;
    }
    public void setBaris(int baris){
    //mengeset baris
          this.baris = baris;
    }
```

```
//get set
.........
public void buatBaris(String[] isi,
    int add){
    int i = 0, j = 0; //inisialisasi
    variabel di java
    //buat tabel bagian atas
    for(i=0;i<isi.length;i++){
        for(j=0;j<(isi[i].length() +
    add);j++){
          System.out.print("-");
          }
    }
    System.out.println("");
```

# KELAS TABEL (2)

```
  //buat baris isi
for(i=0;i<isi.length;i++){
     System.out.print("| ");
     System.out.print(isi[i]);
     for(j=0;j<(add-3);j++){
         System.out.print(" ");
     }
      System.out.print("|");
}
System.out.println("");
```

```
  //buat tabel bagian bawah
    for(i=0;i<isi.length;i++){
          for(j=0;j<(isi[i].length() +
    add);j++){
          System.out.print("-");
          }
    }
    System.out.println("");
 }
}
```

# KELAS MAIN (1)

```
import java.util.Scanner;

public class Main{

    public static void main(String[]
    args){

          int n = 0; //banyaknya balok

          System.out.println("Masukkan
    banyak balok:");

          Scanner sc = new
    Scanner(System.in);


          try{

             n = sc.nextInt();

          }catch(Exception e){

          }

          //array balok

          Balok[] arrbalok = new
    Balok[n];
```

```
    //mengisi array balok

    int i = 0, p = 0, l = 0, t = 0;

    for(i=0;i<n;i++){
          System.out.println("Masukkan
    panjang, lebar, tinggi balok ke "
    + (i+1) + " :");

          try{

              p = sc.nextInt();

          }catch(Exception e){

          }

          ........

          arrbalok[i] = new Balok(p,
    l, t);

    }
```

# KELAS MAIN (2)

```
        //menampilkan array balok
        Tabel tab = new Tabel(n, 5);
        for(i=0;i<n;i++){
                String[] arrstr = new String[5];
                arrstr[0] = "" + arrbalok[i].getPanjang();
                arrstr[1] = "" + arrbalok[i].getLebar();
                arrstr[2] = "" + arrbalok[i].getTinggi();
                arrstr[3] = "" + arrbalok[i].volume();
                arrstr[4] = "" + arrbalok[i].luas();
                tab.buatBaris(arrstr, 5);
        }
    }
}
```

- **Ubah Kode program ke bahasa C++**
- **Buat program untuk membuat tabel nama nasabah bank**
  - Nama
  - Saldo
  - Transaksi terakhir

# DAFTAR PUSTAKA

**S, Rosa A. dan M. Shalahuddin. 2011. Modul Pembelajaran: Pemrograman Berorientasi Objek. Modula: Bandung.**