Nama Mahasiswa	: Aditya Prabowo	Mata Kuliah	: Pemrograman Berorientasi Objek
Nomor Induk Mahasiswa	: 201011400433	Nama Dosen	: Alun Sujjada, S.Kom, M.T
Semester / Angkatan	: 5/2020	Nilai	: ……
Program Studi	: Teknik Informatika	Kode & Kode Kelas	: IF2110 & TI21G

Bangun_Datar

Bangun_Datar.java

```
package tugas6.Bangun_Datar;

public abstract class BangunDatar {
   String warna;

   String getName(){
      return warna;
   }

   void setWarna(String warna){
      this.warna=warna;
   }

   abstract float getLuas();
}
```

Lingkaran.java

```
Package tugas6.Bangun_Datar;

public class Lingkaran extends BangunDatar{

   float jari_jari;

   public Lingkaran(float jari_jari){
```

```
        this.jari_jari=jari_jari;
    }

    @Override
    float getLuas() {
        return (float)Math.PI*jari_jari*jari_jari;
    }
}
```

Main.java

```
Package tugas6.Bangun_Datar;

Public class Main {
    Public static void main(String[] args) {
        BangunDatar segitiga=new SegiTiga(12, 20);
        BangunDatar lingkaran=new Lingkaran(60);

        System.out.println("Luas dari bangun datar segitiga : "+segitiga.getLuas());
        System.out.println("Luas dari bangun datar luangkaran : "+lingkaran.getLuas());
    }
}
```

SegiTiga.java

```
Package tugas6.Bangun_Datar;

Public class SegiTiga extends BangunDatar{

    Private float alas;
    Private float tinggi;

    Public SegiTiga(float alas, float tinggi){
        This.alas=alas;
        This.tinggi=tinggi;
    }
```

```
    @Override
    Float getLuas(){
        Return (float)0.5*alas*tinggi;
    }
}
```

Laptopku

Laptop.java

```
Package tugas6.Laptopku;

Public interface Laptop {
    Int  MAX_VOL=100;
    Int MIN_VOL=0;

    Void powerOn();
    Void powerOff();
    Void volumeUp();
    Void volumeDown();
}
```

LaptipUser.java

```
Package tugas6.Laptopku;
Public class LaptopUser {
    Private Laptop laptop;

    Public LaptopUser(Laptop laptop){
        This.laptop=laptop;
    }

    Void turnOnLaptop(){
        This.laptop.powerOn();
```

```
    }

    Void turnOffLaptop(){
        This.laptop.powerOff();
    }

    Void makeLaptopLouder(){
        This.laptop.volumeUp();
    }

    Void makeLaptopSilence(){
        This.laptop.volumeDown();
    }
}
```

Lenovo.java

```
Package tugas6.Laptopku;

Public class Lenovo implements Laptop{
    Private int volume;
    Boolean is_power_on;
    Public Lenovo(){
        This.volume=50;
    }

    @Override
    Public void powerOn(){
        Is_power_on=true;
        System.out.println(“Laptop is On”);
        System.out.println(“Lenovo ThinkPad”);
    }

    @Override
    Public void powerOff(){
```

```
    Is_power_on=false;
    System.out.println("Shutdown in process ...");
  }

  @Override
  Public void volumeUp(){
    If(is_power_on){
      If(this.volume==MAX_VOL){
        System.out.println("Volume is Full ");
      }
      Else{
        This.volume+=10;
        System.out.println("Volume is : "+getVolume());
      }
    }
  }

  @Override
  Public void volumeDown(){
    If(is_power_on){
      If(this.volume==MIN_VOL){
        System.out.println("Volume is 0%");
      }
      Else{
        This.volume-=10;
        System.out.println("Volume is : "+getVolume());
      }
    }
  }

  Public int getVolume(){
    Return this.volume;
  }
}
```

MacBook.java

```
Package tugas6.Laptopku;

Public class MacBook implements Laptop{
   Private int volume;
   Boolean is_power_on;

   Public MacBook(){
      This.volume=50;
   }

   @Override
   Public void powerOn(){
      Is_power_on=true;
      System.out.println(“Laptop is On”);
      System.out.println(“MacBook Air M1”);
   }

   @Override
   Public void powerOff(){
      Is_power_on=false;
      System.out.println(“Shutdown in process ...”);
   }

   @Override
   Public void volumeUp(){
      If(is_power_on){
         If(this.volume==MAX_VOL){
            System.out.println(“Volume is Full “);
         }
         Else{
            This.volume+=10;
```

```
            System.out.println("Volume is : "+getVolume());
        }
    }
}

@Override
Public void volumeDown(){
    If(is_power_on){
        If(this.volume==MIN_VOL){
            System.out.println("Volume is 0%");
        }
        Else{
            This.volume-=10;
            System.out.println("Volume is : "+getVolume());
        }
    }
}

Public int getVolume(){
    Return this.volume;
}
}
```

Toshiba.java

```
Package tugas6.Laptopku;

Public class Toshiba implements Laptop{
    Private int volume;
    Boolean is_power_on;

    Public Toshiba(){
        This.volume=50;
    }
```

```
@Override
Public void powerOn(){
   Is_power_on=true;
   System.out.println(“Laptop is On”);
   System.out.println(“Toshiba Satellite”);
}

@Override
Public void powerOff(){
   Is_power_on=false;
   System.out.println(“Shutdown in process ...”);
}

@Override
Public void volumeUp(){
   If(is_power_on){
      If(this.volume==MAX_VOL){
         System.out.println(“Volume is Full “);
      }
      Else{
         This.volume+=10;
         System.out.println(“Volume is : “+getVolume());
      }
   }
}

@Override
Public void volumeDown(){
   If(is_power_on){
      If(this.volume==MIN_VOL){
         System.out.println(“Volume is 0%”);
      }
      Else{
         This.volume-=10;
```

```
            System.out.println("Volume is : "+getVolume());
        }
    }
  }

  Public int getVolume(){
    Return this.volume;
  }
}
```

Main.java

```
Package tugas 6.Laptopku;
Import java.util.Scanner;
Import java.util.ArrayList;

Public class Main {
  Static void batas(){
    System.out.println("=========================================");
  }

  Static void pilihLaptop(){
    System.out.println("1. Lenovo");
    System.out.println("2. Toshiba");
    System.out.println("3. MacBook");
    System.out.println("");
  }

  Static void menuLaptop(){
    System.out.println("1. Input 'ON' untuk menyalakan laptop");
    System.out.println("2. Input 'OFF' untuk mematikan laptop");
    System.out.println("3. Input 'UP' untuk menambah volume");
    System.out.println("4. Input 'DOWN' untuk mengurangi volume");
  }
```

```
Public static void main(String[] args) {
    Boolean bool=true;
    Scanner sc=new Scanner(System.in);
    ArrayList<Laptop> laptop = new ArrayList<>();
    Lenovo lenovo=new Lenovo();
    Toshiba toshiba=new Toshiba();
    MacBook macbook=new MacBook();

    System.out.println("\n\tMerk Laptop");
    Batas();
    pilihLaptop();
    System.out.print("Pilih jenis laptop : ");
    Int noJenisLaptop=sc.nextInt();
    Switch(noJenisLaptop){
      Case 1:
        Laptop.add(lenovo);
        Break;
      Case 2 :
        Laptop.add(toshiba);
        Break;
      Case 3 :
        Laptop.add(macbook);
    }

    While(bool){
      System.out.println("\n\t   Menu");
      Batas();
      menuLaptop();
      System.out.print("Input : ");
      String noMenu=sc.next();
      Switch(noMenu){
        Case "ON":
          Laptop.get(0).powerOn();
          Break;
```

```
            Case “OFF”:
               Laptop.get(0).powerOff();
               Bool=false;
               Break;
            Case “UP”:
               Laptop.get(0).volumeUp();
               Break;
            Case “DOWN”:
               Laptop.get(0).volumeDown();
               Break;
            Default:
               System.out.println(“PILIH SESUAI INSTRUKSI DI MENU -_-“);
               Break;
         }
      }
   }
}
```

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Semester / Angkatan	: 5/2020	Nilai	: ……
Program Studi	: Teknik Informatika	Kode & Kode Kelas	: IF2110 & TI21G

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Bangun_Datar.java

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   String warna;

   String getName(){
      return warna;
   }
```

```
    void setWarna(String warna){
        this.warna=warna;
    }

    abstract float getLuas();
}
```

Lingkaran.java

```
Package tugas6.Bangun_Datar;

public class Lingkaran extends BangunDatar{

    float jari_jari;
```

```
    public Lingkaran(float jari_jari){
        this.jari_jari=jari_jari;
    }

    @Override
    float getLuas() {
        return (float)Math.PI*jari_jari*jari_jari;
    }
}
```

Main.java

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Package tugas6.Bangun_Datar;

Public class Main {
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        System.out.println("Luas dari bangun datar segitiga : "+segitiga.getLuas());
        System.out.println("Luas dari bangun datar luangkaran : "+lingkaran.getLuas());
    }
}
```

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Package tugas6.Bangun_Datar;

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    Private float alas;
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```
    Public SegiTiga(float alas, float tinggi){
        This.alas=alas;
        This.tinggi=tinggi;
    }

    @Override
    Float getLuas(){
        Return (float)0.5*alas*tinggi;
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Laptopku

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Public interface Laptop {
    Int  MAX_VOL=100;
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    Void powerOn();
    Void powerOff();
    Void volumeUp();
    Void volumeDown();
}
```

LaptipUser.java

```
Package tugas6.Laptopku;
```

```
Public class LaptopUser {
   Private Laptop laptop;

   Public LaptopUser(Laptop laptop){
      This.laptop=laptop;
   }

   Void turnOnLaptop(){
      This.laptop.powerOn();
   }

   Void turnOffLaptop(){
      This.laptop.powerOff();
   }

   Void makeLaptopLouder(){
      This.laptop.volumeUp();
   }

   Void makeLaptopSilence(){
      This.laptop.volumeDown();
   }
}
```

Lenovo.java

```
Package tugas6.Laptopku;

Public class Lenovo implements Laptop{
   Private int volume;
   Boolean is_power_on;
```

```
Public Lenovo(){
   This.volume=50;
}

@Override
Public void powerOn(){
   Is_power_on=true;
   System.out.println(“Laptop is On”);
   System.out.println(“Lenovo ThinkPad”);
}

@Override
Public void powerOff(){
   Is_power_on=false;
   System.out.println(“Shutdown in process ...”);
}

@Override
Public void volumeUp(){
   If(is_power_on){
      If(this.volume==MAX_VOL){
         System.out.println(“Volume is Full “);
      }
      Else{
         This.volume+=10;
         System.out.println(“Volume is : “+getVolume());
      }
   }
}

@Override
```

```
    Public void volumeDown(){
        If(is_power_on){
            If(this.volume==MIN_VOL){
                System.out.println("Volume is 0%");
            }
            Else{
                This.volume-=10;
                System.out.println("Volume is : "+getVolume());
            }
        }
    }

    Public int getVolume(){
        Return this.volume;
    }
}
```

MacBook.java

```
Package tugas6.Laptopku;

Public class MacBook implements Laptop{
    Private int volume;
    Boolean is_power_on;

    Public MacBook(){
        This.volume=50;
    }

    @Override
    Public void powerOn(){
```

```
    Is_power_on=true;
    System.out.println("Laptop is On");
    System.out.println("MacBook Air M1");
}

@Override
Public void powerOff(){
    Is_power_on=false;
    System.out.println("Shutdown in process ...");
}

@Override
Public void volumeUp(){
    If(is_power_on){
        If(this.volume==MAX_VOL){
            System.out.println("Volume is Full ");
        }
        Else{
            This.volume+=10;
            System.out.println("Volume is : "+getVolume());
        }
    }
}

@Override
Public void volumeDown(){
    If(is_power_on){
        If(this.volume==MIN_VOL){
            System.out.println("Volume is 0%");
        }
        Else{
```

```
            This.volume-=10;
            System.out.println(“Volume is : “+getVolume());
          }
        }
    }

    Public int getVolume(){
        Return this.volume;
    }
}
```

Toshiba.java

```
Package tugas6.Laptopku;

Public class Toshiba implements Laptop{
    Private int volume;
    Boolean is_power_on;

    Public Toshiba(){
        This.volume=50;
    }

    @Override
    Public void powerOn(){
        Is_power_on=true;
        System.out.println(“Laptop is On”);
        System.out.println(“Toshiba Satellite”);
    }

    @Override
    Public void powerOff(){
```

```
    Is_power_on=false;
    System.out.println("Shutdown in process ...");
}

@Override
Public void volumeUp(){
    If(is_power_on){
        If(this.volume==MAX_VOL){
            System.out.println("Volume is Full ");
        }
        Else{
            This.volume+=10;
            System.out.println("Volume is : "+getVolume());
        }
    }
}

@Override
Public void volumeDown(){
    If(is_power_on){
        If(this.volume==MIN_VOL){
            System.out.println("Volume is 0%");
        }
        Else{
            This.volume-=10;
            System.out.println("Volume is : "+getVolume());
        }
    }
}

Public int getVolume(){
```

```
    Return this.volume;
  }
}
```

Main.java

```
Package tugas 6.Laptopku;
Import java.util.Scanner;
Import java.util.ArrayList;

Public class Main {
  Static void batas(){
    System.out.println("=========================================");
  }

  Static void pilihLaptop(){
    System.out.println("1. Lenovo");
    System.out.println("2. Toshiba");
    System.out.println("3. MacBook");
    System.out.println("");
  }

  Static void menuLaptop(){
    System.out.println("1. Input 'ON' untuk menyalakan laptop");
    System.out.println("2. Input 'OFF' untuk mematikan laptop");
    System.out.println("3. Input 'UP' untuk menambah volume");
    System.out.println("4. Input 'DOWN' untuk mengurangi volume");
  }

  Public static void main(String[] args) {
    Boolean bool=true;
    Scanner sc=new Scanner(System.in);
```

```
ArrayList<Laptop> laptop = new ArrayList<>();
Lenovo lenovo=new Lenovo();
Toshiba toshiba=new Toshiba();
MacBook macbook=new MacBook();

System.out.println(“\n\tMerk Laptop”);
Batas();
pilihLaptop();
System.out.print(“Pilih jenis laptop : “);
Int noJenisLaptop=sc.nextInt();
Switch(noJenisLaptop){
   Case 1:
      Laptop.add(lenovo);
      Break;
   Case 2 :
      Laptop.add(toshiba);
      Break;
   Case 3 :
      Laptop.add(macbook);
}

While(bool){
   System.out.println(“\n\t    Menu”);
   Batas();
   menuLaptop();
   System.out.print(“Input : “);
   String noMenu=sc.next();
   Switch(noMenu){
      Case “ON”:
         Laptop.get(0).powerOn();
         Break;
```

```
            Case “OFF”:
               Laptop.get(0).powerOff();
               Bool=false;
               Break;
            Case “UP”:
               Laptop.get(0).volumeUp();
               Break;
            Case “DOWN”:
               Laptop.get(0).volumeDown();
               Break;
            Default:
               System.out.println(“PILIH SESUAI INSTRUKSI DI MENU -_-“);
               Break;
         }
      }
   }
}
```