

LAPORAN TUGAS KULIAH
PEMROGAMAN BEORIENTASI OBYEK
Pertemuan Pertama (29 Agustus 2023)



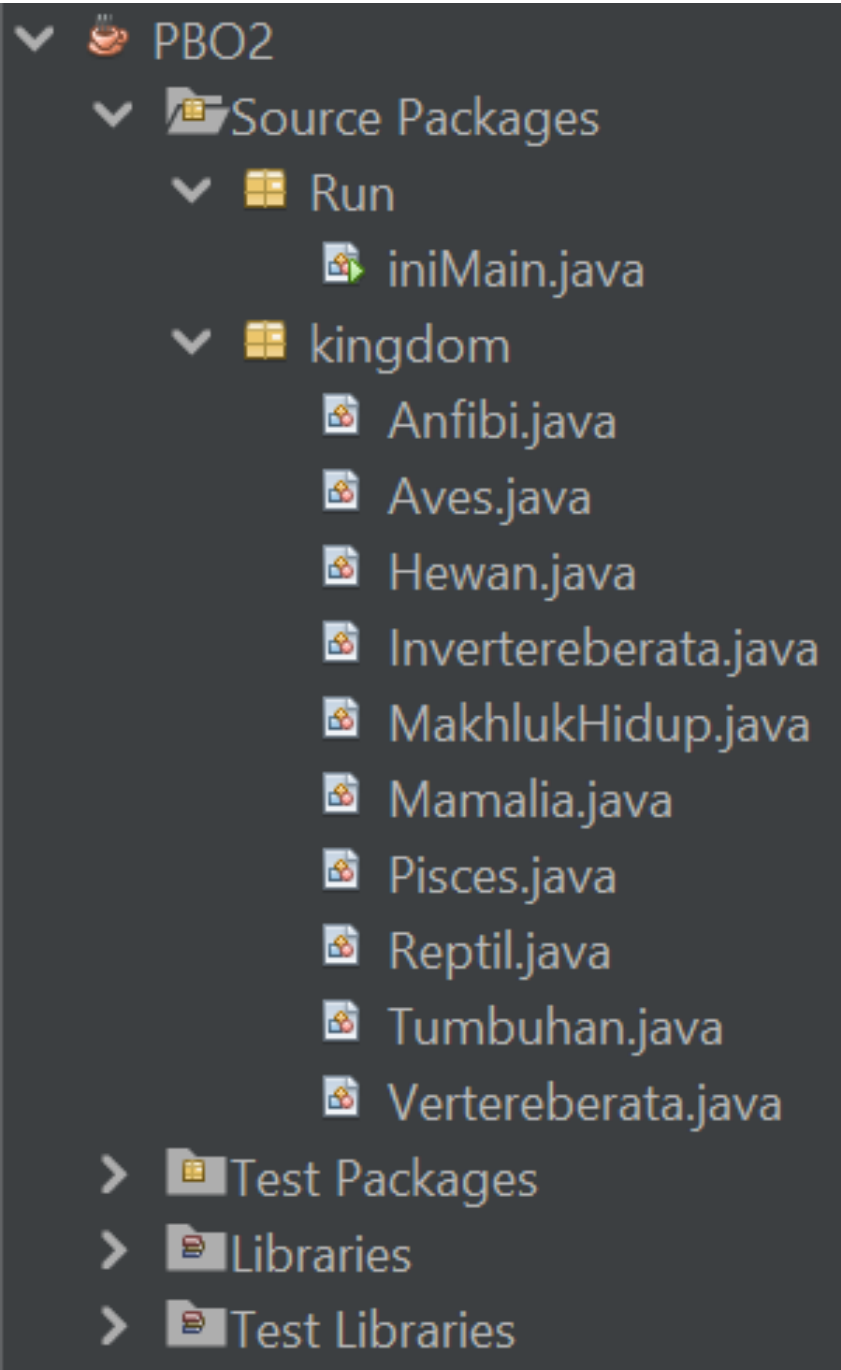
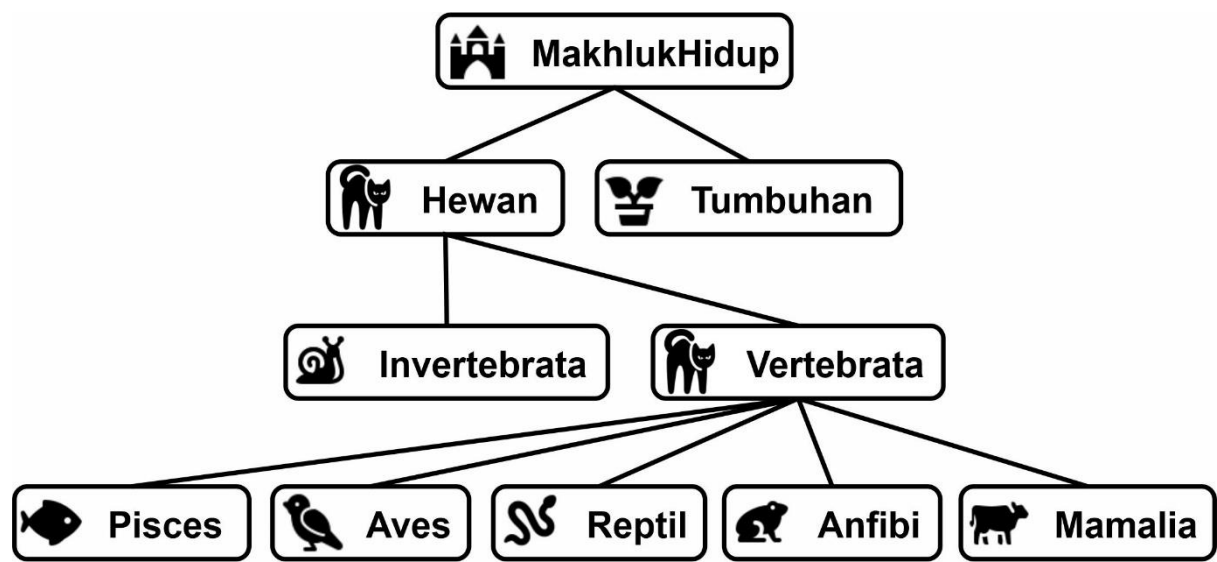
UIN SUNAN AMPEL
S U R A B A Y A

Dosen Pembimbing
Bayu Adi Nugroho, PH.D

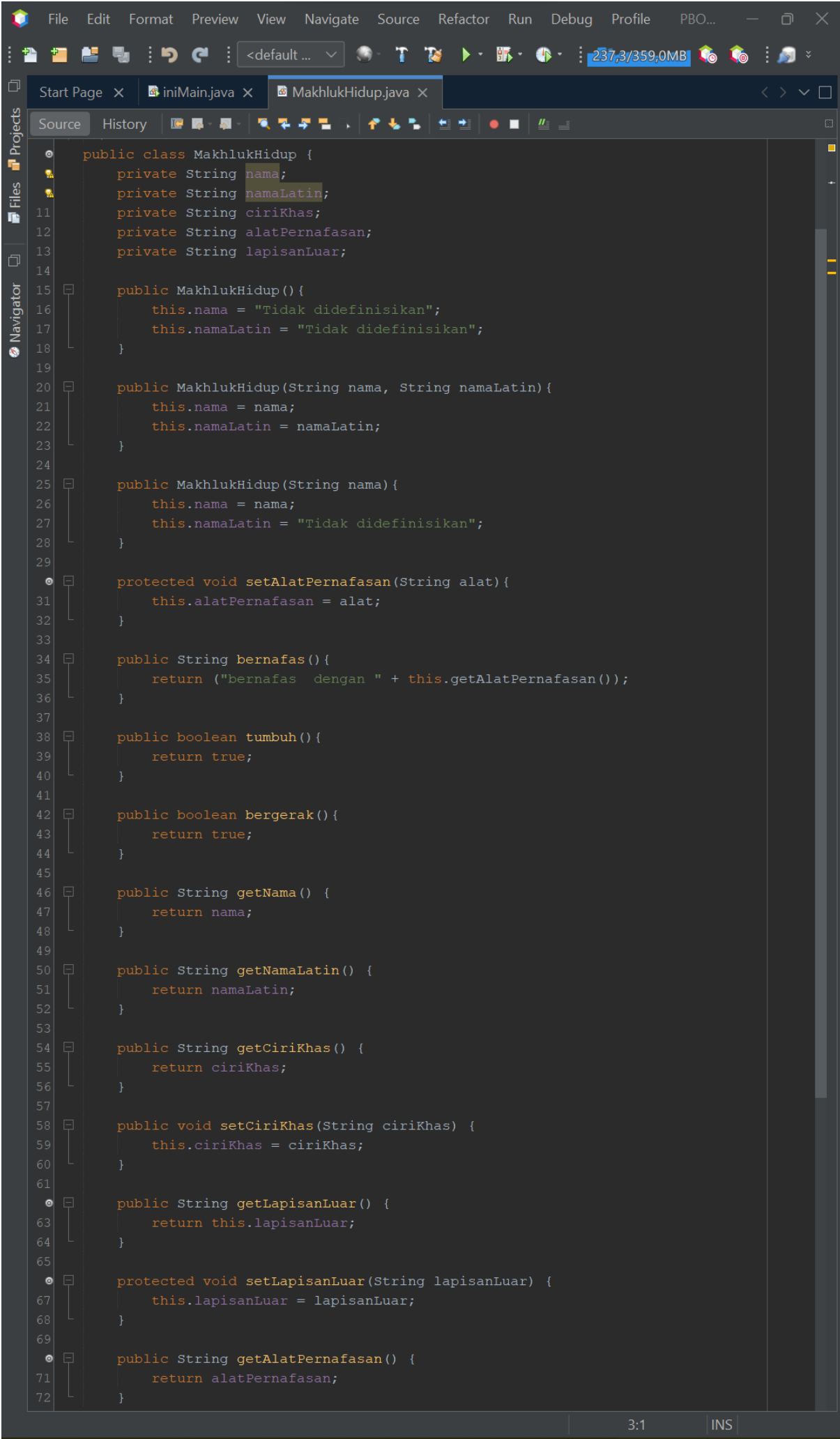
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TAHUN PEMBELAJARAN 2023/2024
UNIVERSITAS ISLAM NEGERI SUNAN AMPEL SURABAYA
FAKULTAS SAINS DAN TEKNOLOGI
SISTEM INFORMASI
2023/2024

Diagram Kingdom Makhluk Hidup



Class MakhlukHidup



```
public class MakhlukHidup {
    private String nama;
    private String namaLatin;
    private String ciriKhas;
    private String alatPernafasan;
    private String lapisanLuar;

    public MakhlukHidup() {
        this.nama = "Tidak didefinisikan";
        this.namaLatin = "Tidak didefinisikan";
    }

    public MakhlukHidup(String nama, String namaLatin){
        this.nama = nama;
        this.namaLatin = namaLatin;
    }

    public MakhlukHidup(String nama){
        this.nama = nama;
        this.namaLatin = "Tidak didefinisikan";
    }

    protected void setAlatPernafasan(String alat){
        this.alatPernafasan = alat;
    }

    public String bernafas(){
        return ("bernafas dengan " + this.getAlatPernafasan());
    }

    public boolean tumbuh(){
        return true;
    }

    public boolean bergerak(){
        return true;
    }

    public String getNama() {
        return nama;
    }

    public String getNamaLatin() {
        return namaLatin;
    }

    public String getCiriKhas() {
        return ciriKhas;
    }

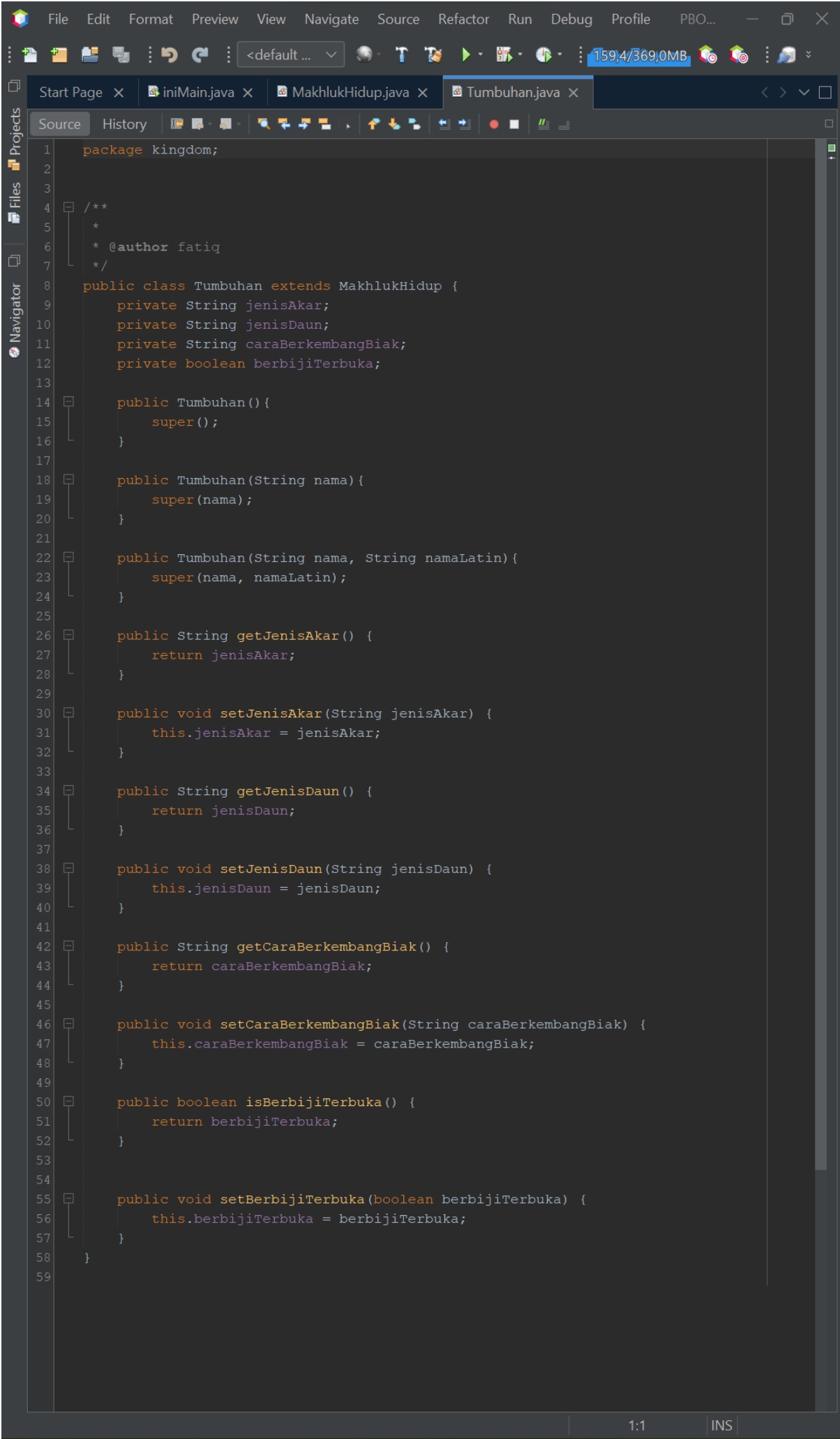
    public void setCiriKhas(String ciriKhas) {
        this.ciriKhas = ciriKhas;
    }

    public String getLapisanLuar() {
        return this.lapisanLuar;
    }

    protected void setLapisanLuar(String lapisanLuar) {
        this.lapisanLuar = lapisanLuar;
    }

    public String getAlatPernafasan() {
        return alatPernafasan;
    }
}
```

Class Tumbuhan



The screenshot shows an IDE window with the following components:

- Menu Bar:** File, Edit, Format, Preview, View, Navigate, Source, Refactor, Run, Debug, Profile, PBO...
- Toolbar:** Includes icons for file operations, search, and execution. A memory indicator shows 159,4/369,0MB.
- Tab Bar:** Contains tabs for Start Page, iniMain.java, MakhlukHidup.java, and Tumbuhan.java (the active tab).
- Left Sidebar:** Contains icons for Projects, Files, and Navigator.
- Main Editor:** Displays the Java code for the Tumbuhan class.

```
1 package kingdom;
2
3
4 /**
5  *
6  * @author fatiq
7  */
8 public class Tumbuhan extends MakhlukHidup {
9     private String jenisAkar;
10    private String jenisDaun;
11    private String caraBerkembangBiak;
12    private boolean berbijiTerbuka;
13
14    public Tumbuhan() {
15        super();
16    }
17
18    public Tumbuhan(String nama) {
19        super(nama);
20    }
21
22    public Tumbuhan(String nama, String namaLatin) {
23        super(nama, namaLatin);
24    }
25
26    public String getJenisAkar() {
27        return jenisAkar;
28    }
29
30    public void setJenisAkar(String jenisAkar) {
31        this.jenisAkar = jenisAkar;
32    }
33
34    public String getJenisDaun() {
35        return jenisDaun;
36    }
37
38    public void setJenisDaun(String jenisDaun) {
39        this.jenisDaun = jenisDaun;
40    }
41
42    public String getCaraBerkembangBiak() {
43        return caraBerkembangBiak;
44    }
45
46    public void setCaraBerkembangBiak(String caraBerkembangBiak) {
47        this.caraBerkembangBiak = caraBerkembangBiak;
48    }
49
50    public boolean isBerbijiTerbuka() {
51        return berbijiTerbuka;
52    }
53
54
55    public void setBerbijiTerbuka(boolean berbijiTerbuka) {
56        this.berbijiTerbuka = berbijiTerbuka;
57    }
58 }
59
```

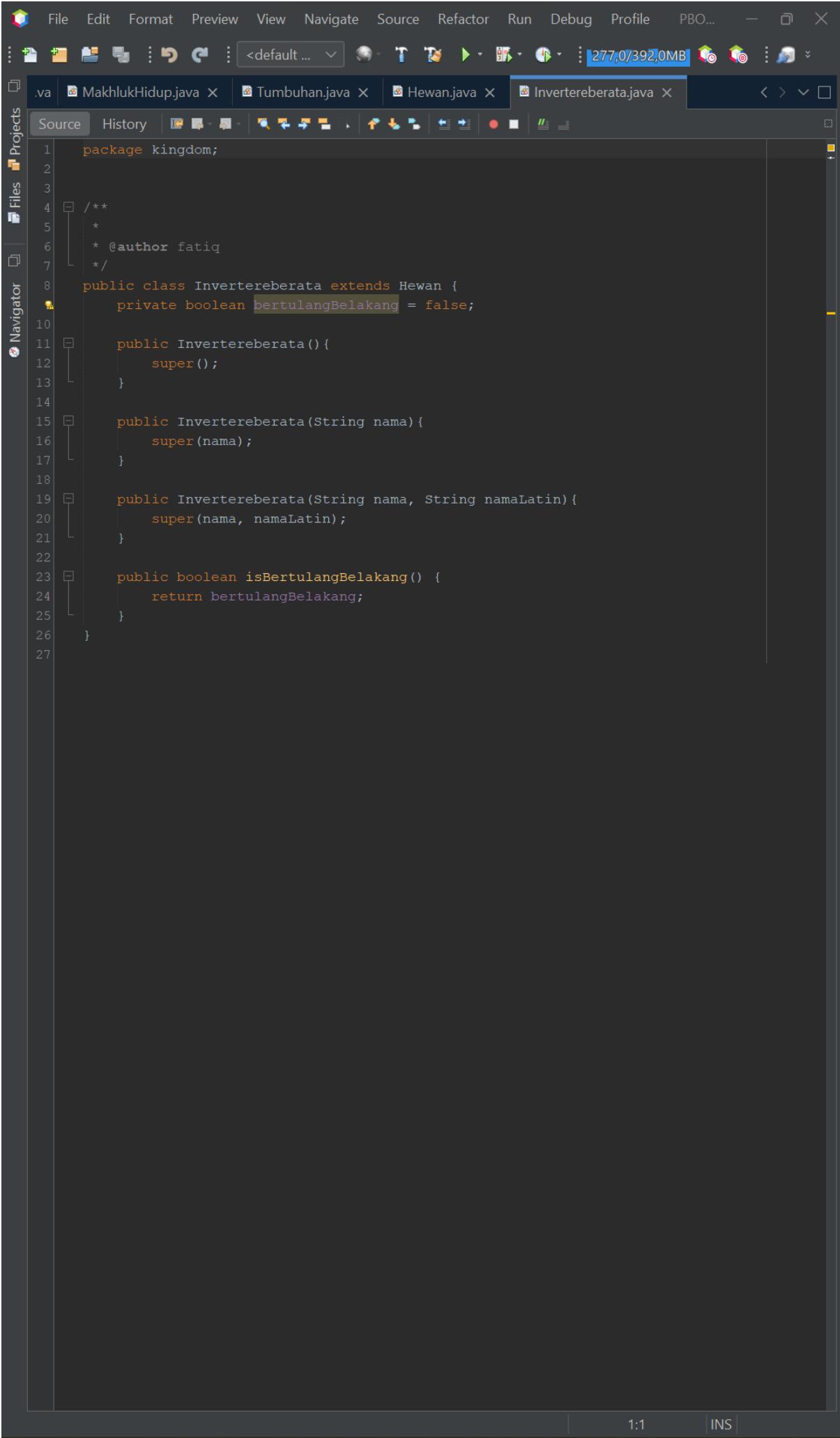
At the bottom of the IDE, the status bar shows "1:1" and "INS".

Class Hewan

The screenshot shows an IDE with the following components:

- Top Bar:** File, Edit, Format, Preview, View, Navigate, Source, Refactor, Run, Debug, Profile, PBO...
- Project Explorer:** Shows a project named 'PBO' with a package 'com.pbo' containing files 'Hewan.java', 'MakhlukHidup.java', 'Tumbuhan.java', and 'Main.java'.
- Editor:** Displays the code for 'Hewan.java'. The code implements the 'MakhlukHidup' interface with the following methods:
 - `private String jenisMakanan;`
 - `private String habitan;`
 - `private String caraReproduksi;`
 - `public Hewan() { super(); }`
 - `public Hewan(String nama) { super(nama); }`
 - `public Hewan(String nama, String namaLatin) { super(nama, namaLatin); }`
 - `public String makan() { if(jenisMakanan.equalsIgnoreCase("herbivora")) { return "Makan Tumbuhan"; } else if (jenisMakanan.equalsIgnoreCase("karnivora")) { return "Makan Daging"; } else if (jenisMakanan.equalsIgnoreCase("omnivora")) { return "Makan Daging dan Tumbuhan"; } else { return null; } }`
 - `public String reproduksi() { if(caraReproduksi.equalsIgnoreCase("vivipar")) { return "Beranak"; } else if (caraReproduksi.equalsIgnoreCase("ovipar")) { return "Beltelur"; } else if (caraReproduksi.equalsIgnoreCase("ovovivipar")) { return "Beltelur dan Beranak"; } else { return null; } }`
 - `public String getJenisMakanan() { return jenisMakanan; }`
 - `public void setJenisMakanan(String jenisMakanan) { this.jenisMakanan = jenisMakanan; }`
 - `public String getHabitan() { return habitan; }`
 - `public void setHabitan(String habitan) { this.habitan = habitan; }`
 - `public String getCaraReproduksi() { return caraReproduksi; }`
 - `public void setCaraReproduksi(String caraReproduksi) { this.caraReproduksi = caraReproduksi; }`

Class Invertebrata

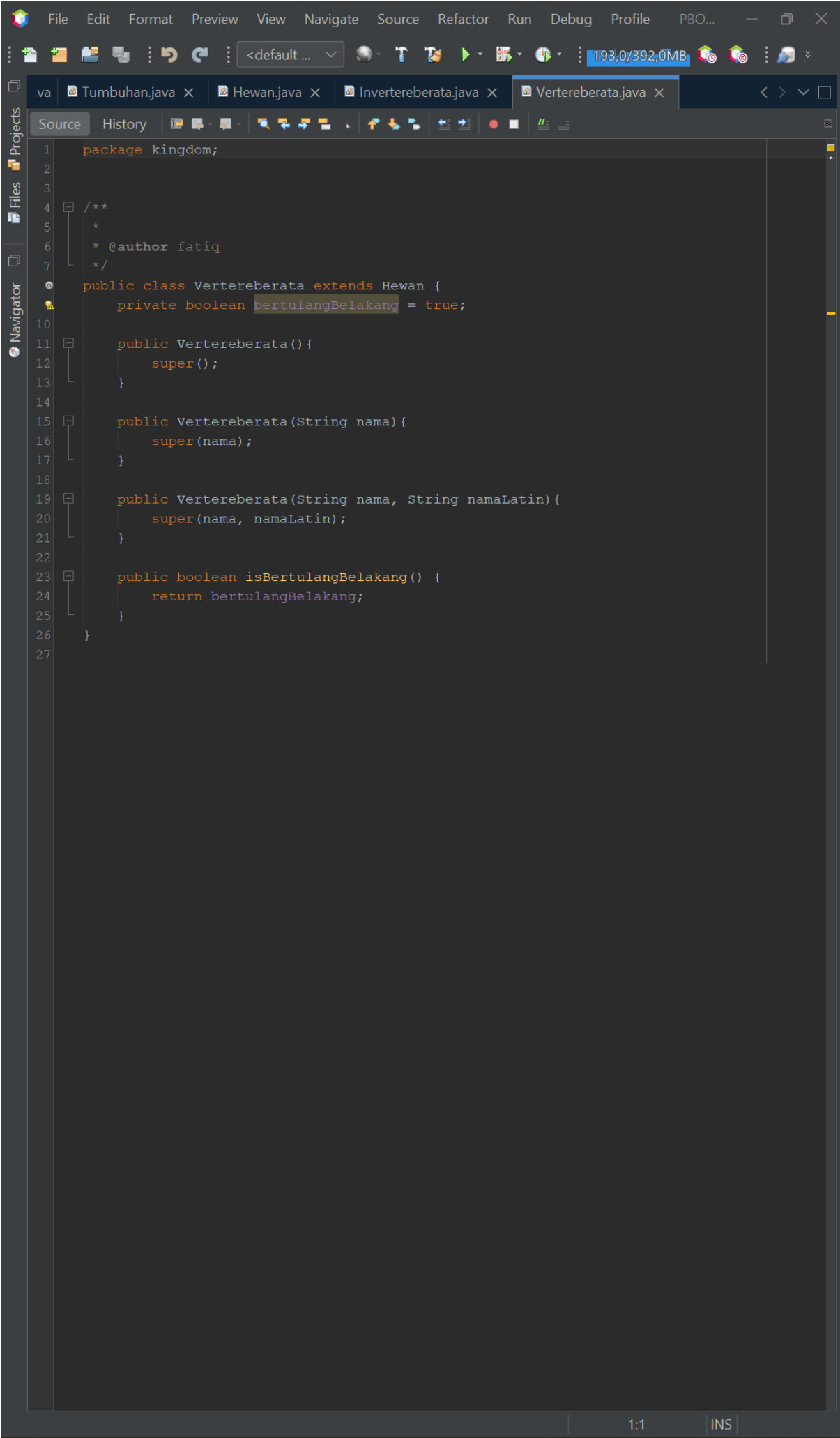


The screenshot shows an IDE window with the file `Inverteberata.java` open. The code is as follows:

```
1 package kingdom;
2
3
4 /**
5  *
6  * @author fatiq
7  */
8 public class Inverteberata extends Hewan {
9     private boolean bertulangBelakang = false;
10
11     public Inverteberata() {
12         super();
13     }
14
15     public Inverteberata(String nama) {
16         super(nama);
17     }
18
19     public Inverteberata(String nama, String namaLatin) {
20         super(nama, namaLatin);
21     }
22
23     public boolean isBertulangBelakang() {
24         return bertulangBelakang;
25     }
26 }
27
```

The IDE interface includes a menu bar (File, Edit, Format, Preview, View, Navigate, Source, Refactor, Run, Debug, Profile, PBO...), a toolbar, and a sidebar with 'Projects', 'Files', and 'Navigator' views. The 'Source' view is active, showing the code editor. The status bar at the bottom indicates '1:1' and 'INS'.

Class Vertebrata



The screenshot shows an IDE window with the following components:

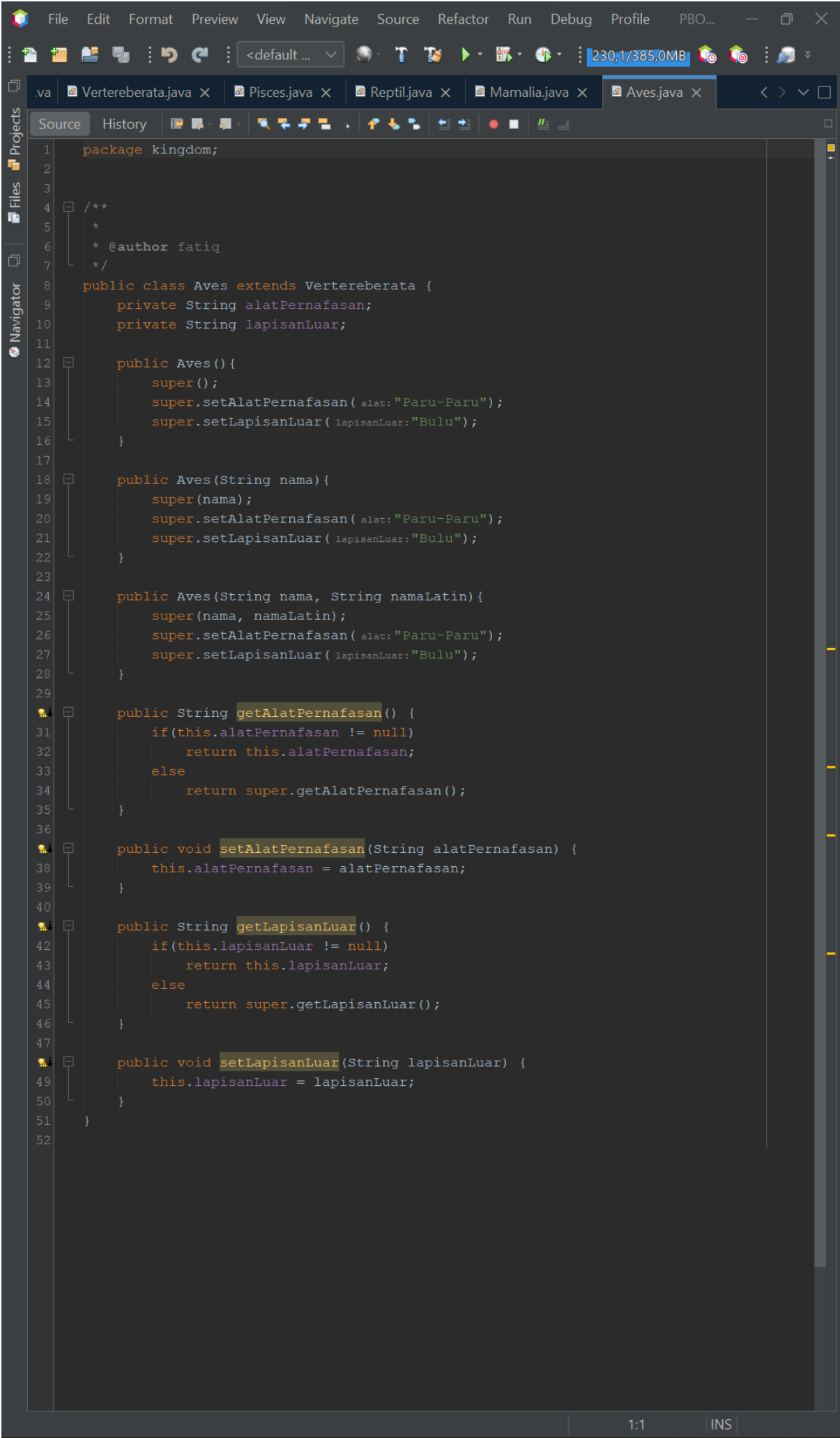
- Menu Bar:** File, Edit, Format, Preview, View, Navigate, Source, Refactor, Run, Debug, Profile, PBO...
- Toolbar:** Includes icons for file operations, search, and execution. A status bar on the right shows memory usage: 193,0/392,0MB.
- Project Explorer (Left):** Shows a project structure with folders for .va, Tumbuhan.java, Hewan.java, Inverteberata.java, and the active file, Verteberata.java.
- Source Editor:** Contains the following Java code:

```
1 package kingdom;
2
3
4 /**
5  *
6  * @author fatiq
7  */
8
9 public class Verteberata extends Hewan {
10     private boolean bertulangBelakang = true;
11
12     public Verteberata(){
13         super();
14     }
15
16     public Verteberata(String nama){
17         super(nama);
18     }
19
20     public Verteberata(String nama, String namaLatin){
21         super(nama, namaLatin);
22     }
23
24     public boolean isBertulangBelakang() {
25         return bertulangBelakang;
26     }
27 }
```
- Bottom Bar:** Shows zoom level 1:1 and cursor position INS.

Class Pisces

```
File Edit Format Preview View Navigate Source Refactor Run Debug Profile PBO...
<default ... 243,2/360,0MB
Hewan.java X Inverteberata.java X Vertereberata.java X Pisces.java X
Source History
1 package kingdom;
2
3
4 /**
5  *
6  * @author fatiq
7  */
8 public class Pisces extends Vertereberata {
9     private String alatPernafasan;
10    private String lapisanLuar;
11
12    public Pisces() {
13        super();
14        super.setAlatPernafasan( alat: "Insang");
15        super.setLapisanLuar( lapisanLuar: "Sisik");
16    }
17
18    public Pisces(String nama) {
19        super(nama);
20        super.setAlatPernafasan( alat: "Insang");
21        super.setLapisanLuar( lapisanLuar: "Sisik");
22    }
23
24    public Pisces(String nama, String namaLatin) {
25        super(nama, namaLatin);
26        super.setAlatPernafasan( alat: "Insang");
27        super.setLapisanLuar( lapisanLuar: "Sisik");
28    }
29
30    public String getAlatPernafasan() {
31        if(this.alatPernafasan != null)
32            return this.alatPernafasan;
33        else
34            return super.getAlatPernafasan();
35    }
36
37    public void setAlatPernafasan(String alatPernafasan) {
38        this.alatPernafasan = alatPernafasan;
39    }
40
41    public String getLapisanLuar() {
42        if(this.lapisanLuar != null)
43            return this.lapisanLuar;
44        else
45            return super.getLapisanLuar();
46    }
47
48    public void setLapisanLuar(String lapisanLuar) {
49        this.lapisanLuar = lapisanLuar;
50    }
51
52
53 }
54
```


Class Aves



The screenshot shows an IDE window with the following components:

- Menu Bar:** File, Edit, Format, Preview, View, Navigate, Source, Refactor, Run, Debug, Profile, PBO...
- Toolbar:** Includes icons for file operations, search, and execution. A status bar at the bottom right shows "230,1/385,0MB".
- Project Explorer (Left):** Shows a project structure with folders for "va", "Files", and "Navigator".
- Tab Bar:** Displays several open files: ".va", "Vertereberata.java", "Pisces.java", "Reptil.java", "Mamalia.java", and "Aves.java".
- Source Editor:** Contains the Java code for the `Aves` class, which extends `Vertereberata`. The code includes package declarations, a class comment, private attributes, constructors, and getter/setter methods.

```
1 package kingdom;
2
3
4 /**
5  *
6  * @author fatiq
7  */
8 public class Aves extends Vertereberata {
9     private String alatPernafasan;
10    private String lapisanLuar;
11
12    public Aves(){
13        super();
14        super.setAlatPernafasan( alat:"Paru-Paru");
15        super.setLapisanLuar( lapisanLuar:"Bulu");
16    }
17
18    public Aves(String nama){
19        super(nama);
20        super.setAlatPernafasan( alat:"Paru-Paru");
21        super.setLapisanLuar( lapisanLuar:"Bulu");
22    }
23
24    public Aves(String nama, String namaLatin){
25        super(nama, namaLatin);
26        super.setAlatPernafasan( alat:"Paru-Paru");
27        super.setLapisanLuar( lapisanLuar:"Bulu");
28    }
29
30    public String getAlatPernafasan() {
31        if(this.alatPernafasan != null)
32            return this.alatPernafasan;
33        else
34            return super.getAlatPernafasan();
35    }
36
37    public void setAlatPernafasan(String alatPernafasan) {
38        this.alatPernafasan = alatPernafasan;
39    }
40
41    public String getLapisanLuar() {
42        if(this.lapisanLuar != null)
43            return this.lapisanLuar;
44        else
45            return super.getLapisanLuar();
46    }
47
48    public void setLapisanLuar(String lapisanLuar) {
49        this.lapisanLuar = lapisanLuar;
50    }
51 }
52
```

At the bottom right of the IDE, the zoom level is set to "1:1" and the cursor is in "INS" (Insert) mode.

Class Reptil

```
File Edit Format Preview View Navigate Source Refactor Run Debug Profile PBO...
281,3/410,0MB

Inverteberata.java x Vertereberata.java x Pisces.java x Reptil.java x
Source History

1 package kingdom;
2
3
4 /**
5  *
6  * @author fatiq
7  */
8 public class Reptil extends Vertereberata {
9     private String alatPernafasan;
10    private String lapisanLuar;
11
12    public Reptil() {
13        super();
14        super.setAlatPernafasan( alat: "Paruh-Paruh");
15        super.setLapisanLuar( lapisanLuar: "Kulit");
16    }
17
18    public Reptil(String nama) {
19        super(nama);
20        super.setAlatPernafasan( alat: "Paruh-Paruh");
21        super.setLapisanLuar( lapisanLuar: "Kulit");
22    }
23
24    public Reptil(String nama, String namaLatin) {
25        super(nama, namaLatin);
26        super.setAlatPernafasan( alat: "Paruh-Paruh");
27        super.setLapisanLuar( lapisanLuar: "Kulit");
28    }
29
30    public String getAlatPernafasan() {
31        if(this.alatPernafasan != null)
32            return this.alatPernafasan;
33        else
34            return super.getAlatPernafasan();
35    }
36
37    public void setAlatPernafasan(String alatPernafasan) {
38        this.alatPernafasan = alatPernafasan;
39    }
40
41    public String getLapisanLuar() {
42        if(this.lapisanLuar != null)
43            return this.lapisanLuar;
44        else
45            return super.getLapisanLuar();
46    }
47
48    public void setLapisanLuar(String lapisanLuar) {
49        this.lapisanLuar = lapisanLuar;
50    }
51 }
52
```

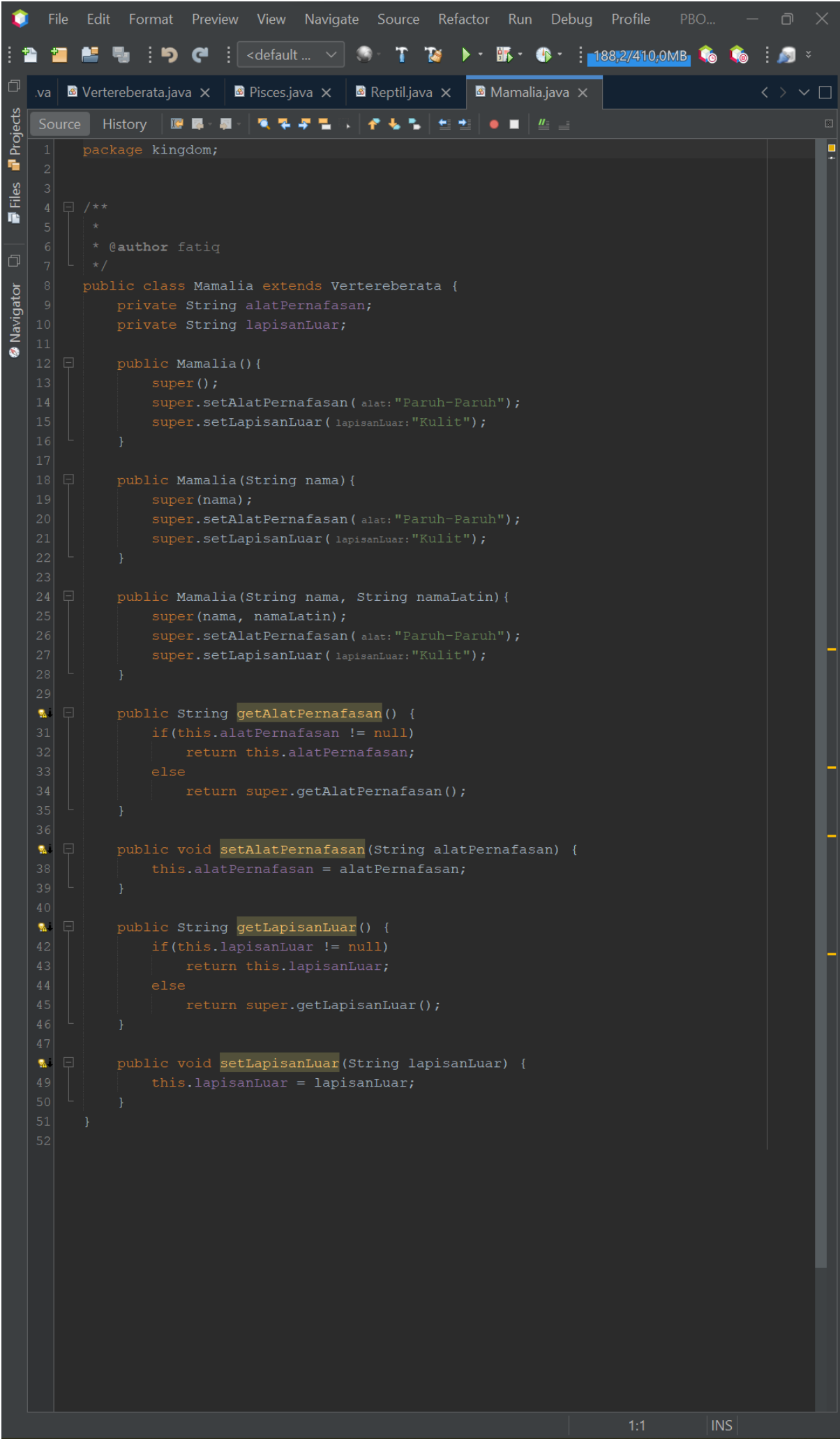
Class Anfibi

The screenshot shows an IDE with the following components:

- Top Bar:** Menus (File, Edit, Format, Preview, View, Navigate, Source, Refactor, Run, Debug, Profile, PBO...) and a status bar (266,7/391,5MB).
- Project Explorer:** Shows a project structure with folders for 'va', 'Pisces.java', 'Reptil.java', 'Mamalia.java', 'Aves.java', and 'Anfibi.java'.
- Source Editor:** Displays the Java code for the 'Anfibi' class. The code is as follows:

```
1 package kingdom;
2 /**
3  *
4  * @author fatiq
5  */
6 public class Anfibi extends Vertereberata {
7     private String alatPernafasan;
8     private String lapisanLuar;
9
10    public Anfibi() {
11        super();
12        super.setAlatPernafasan( alat: "Insang dan Paruh-Paruh");
13        super.setLapisanLuar( lapisanLuar: "Kulit");
14    }
15
16    public Anfibi(String nama) {
17        super(nama);
18        super.setAlatPernafasan( alat: "Insang dan Paruh-Paruh");
19        super.setLapisanLuar( lapisanLuar: "Kulit");
20    }
21
22    public Anfibi(String nama, String namaLatin) {
23        super(nama, namaLatin);
24        super.setAlatPernafasan( alat: "Insang dan Paruh-Paruh");
25        super.setLapisanLuar( lapisanLuar: "Kulit");
26    }
27
28    public String getAlatPernafasan() {
29        if(this.alatPernafasan != null)
30            return this.alatPernafasan;
31        else
32            return super.getAlatPernafasan();
33    }
34
35    public void setAlatPernafasan(String alatPernafasan) {
36        this.alatPernafasan = alatPernafasan;
37    }
38
39    public String getLapisanLuar() {
40        if(this.lapisanLuar != null)
41            return this.lapisanLuar;
42        else
43            return super.getLapisanLuar();
44    }
45
46    public void setLapisanLuar(String lapisanLuar) {
47        this.lapisanLuar = lapisanLuar;
48    }
49 }
50
```

Class Mamalia



```
1 package kingdom;
2
3
4 /**
5  *
6  * @author fatiq
7  */
8 public class Mamalia extends Vertereberata {
9     private String alatPernafasan;
10    private String lapisanLuar;
11
12    public Mamalia() {
13        super();
14        super.setAlatPernafasan( alat: "Paruh-Paruh");
15        super.setLapisanLuar( lapisanLuar: "Kulit");
16    }
17
18    public Mamalia(String nama) {
19        super(nama);
20        super.setAlatPernafasan( alat: "Paruh-Paruh");
21        super.setLapisanLuar( lapisanLuar: "Kulit");
22    }
23
24    public Mamalia(String nama, String namaLatin) {
25        super(nama, namaLatin);
26        super.setAlatPernafasan( alat: "Paruh-Paruh");
27        super.setLapisanLuar( lapisanLuar: "Kulit");
28    }
29
30    public String getAlatPernafasan() {
31        if(this.alatPernafasan != null)
32            return this.alatPernafasan;
33        else
34            return super.getAlatPernafasan();
35    }
36
37    public void setAlatPernafasan(String alatPernafasan) {
38        this.alatPernafasan = alatPernafasan;
39    }
40
41    public String getLapisanLuar() {
42        if(this.lapisanLuar != null)
43            return this.lapisanLuar;
44        else
45            return super.getLapisanLuar();
46    }
47
48    public void setLapisanLuar(String lapisanLuar) {
49        this.lapisanLuar = lapisanLuar;
50    }
51 }
52
```

Class iniMain dan Output

FileEditFormatPreviewViewNavigateSourceRefactorRunDebugProfilePBO...242,6/484,0MB

Start Page × iniMain.java ×

SourceHistory

1package Run;
2
3import kingdom.Pisces;
4
5/**
6 *
7 * @author fatiq
8 */
9public class iniMain {
10 public static void main(String[] args) {
11 Pisces pindang = new Pisces(nama:"Pindang");
12 System.out.println("Nama\t\t: "+pindang.getNama());
13 System.out.println("Nama Latin\t: "+pindang.getNamaLatin());
14 System.out.println("Lapisan Luar\t: "+pindang.getLapisanLuar());
15 System.out.println(x:pindang.bernafas());
16 System.out.println();
17
18 pindang.setAlatPernafasan(alatPernafasan:"hidung");
19 pindang.setLapisanLuar(lapisanLuar:"kulit");
20
21 System.out.println("Lapisan Luar Baru: "+pindang.getLapisanLuar());
22 System.out.println("Sekarang "+pindang.bernafas());
23 }
24}
25

Output - PBO2 (run) ×

run:
Nama : Pindang
Nama Latin : Tidak didefinisikan
Lapisan Luar : Sisik
bernafas dengan Insang

Lapisan Luar Baru: kulit
Sekarang bernafas dengan hidung
BUILD SUCCESSFUL (total time: 0 seconds)

25:1INS