PRAKTIKUM PROGRAM BERORIENTASI OBJEK

MODUL 2

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B

PRODI TEKNIK INFORMATIKA

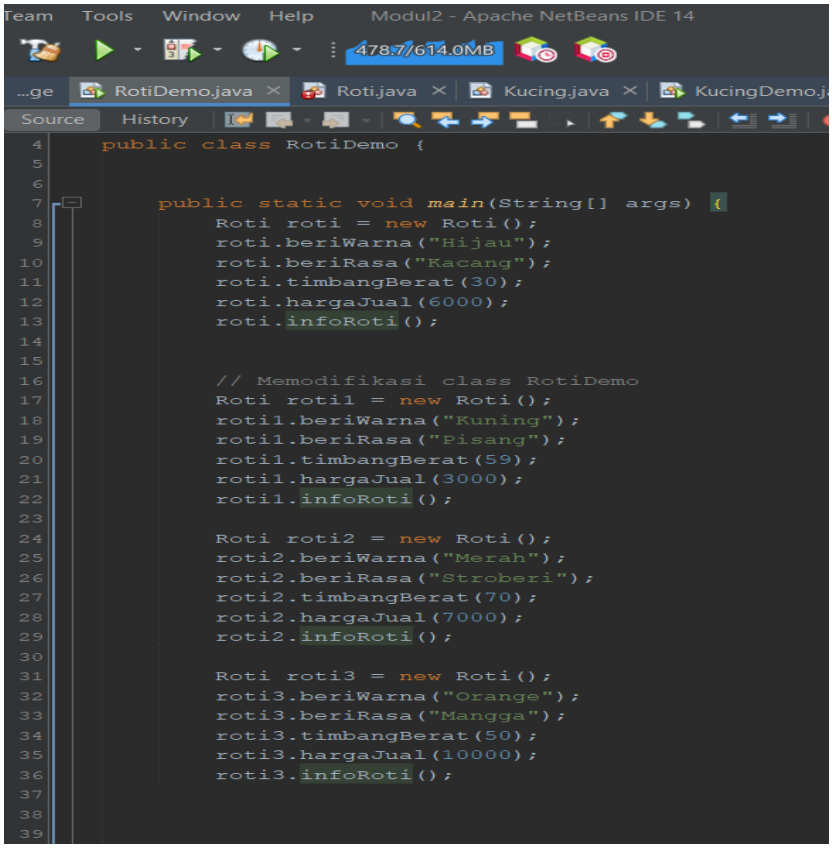
FAKULTAS KOMUNIKASI DAN INFORMATIKA

UNIVERSITAS MUHAMMADIYAH SURAKARTA

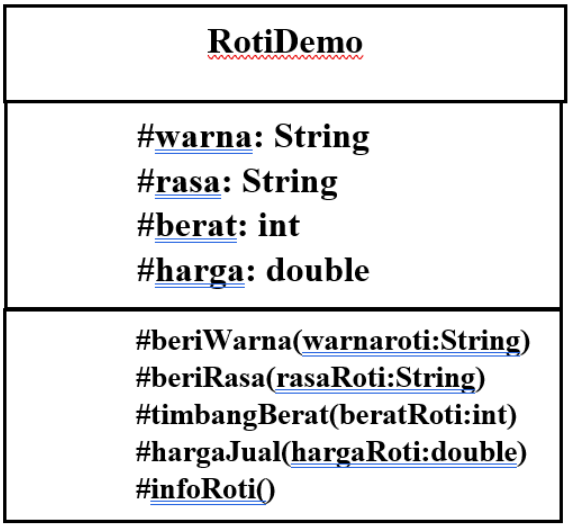
TAHUN 2022/2023

2.4 Latihan

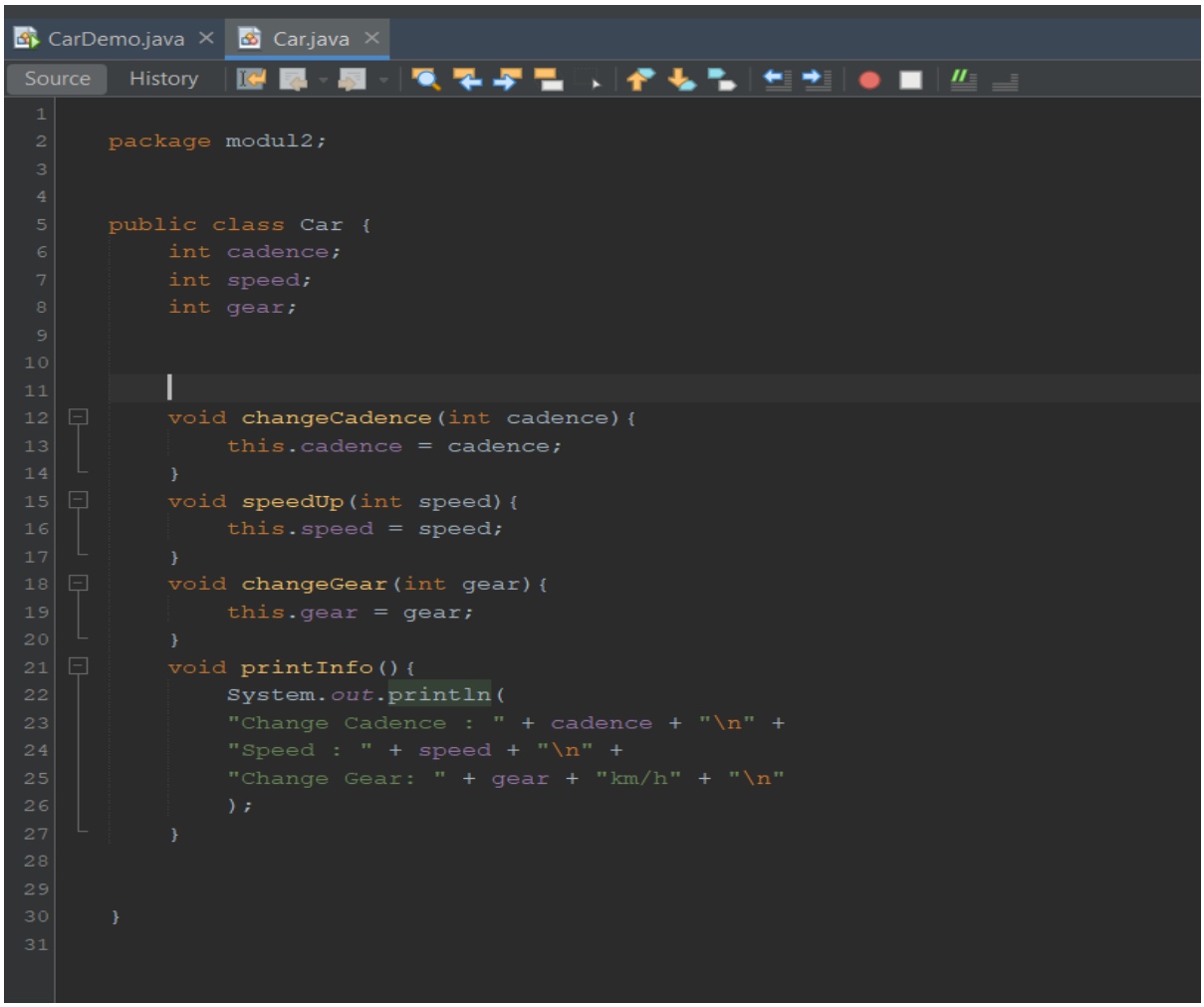
1. Memodifikasi class *RotiDemo* dan membuat 3 object baru.



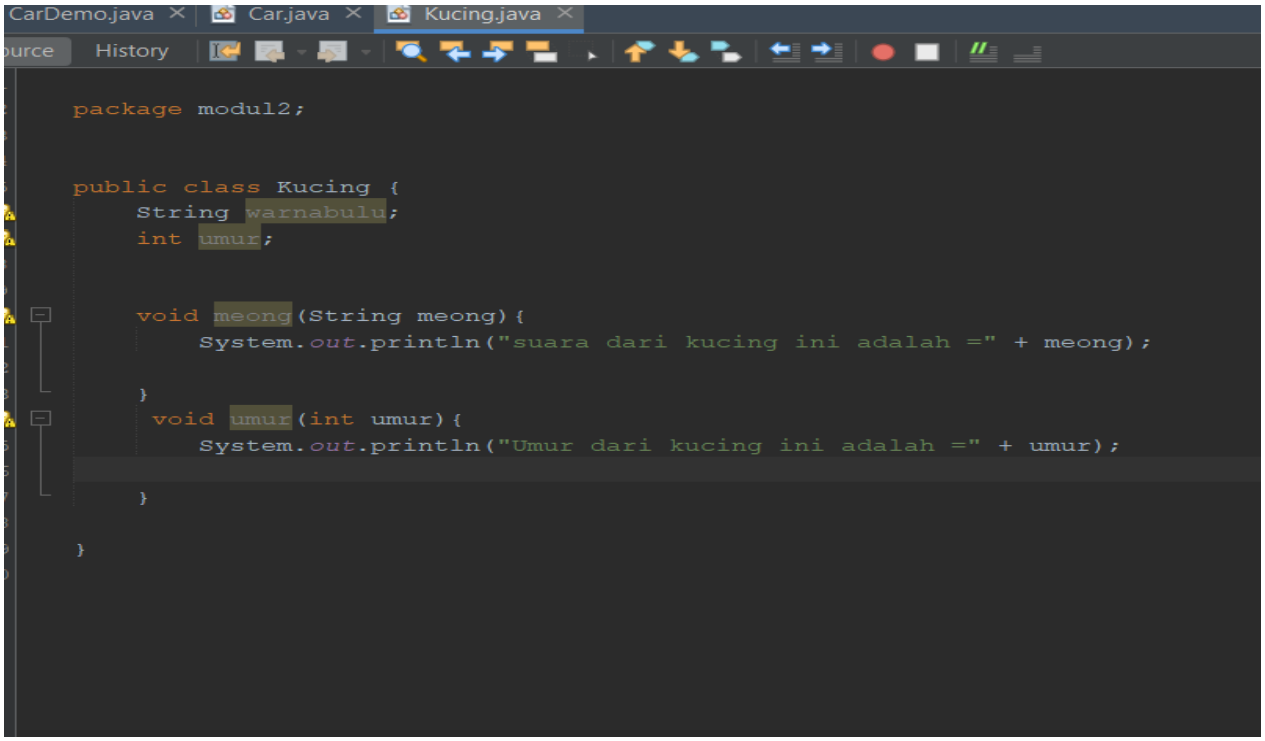
2. Gambar class diagram *RotiDemo*.



3. Membuat class baru sebagai template/*blueprint* dari class *CarDemo* yang tidak memiliki fungsi *main()*.



4. Membuat class baru yang merepresentasikan sifat-sifat dari object *Kucing* .Object ini memiliki variabel/properties berupa *umur,warna bulu* dan method berupa *meong()* dan *umur().*

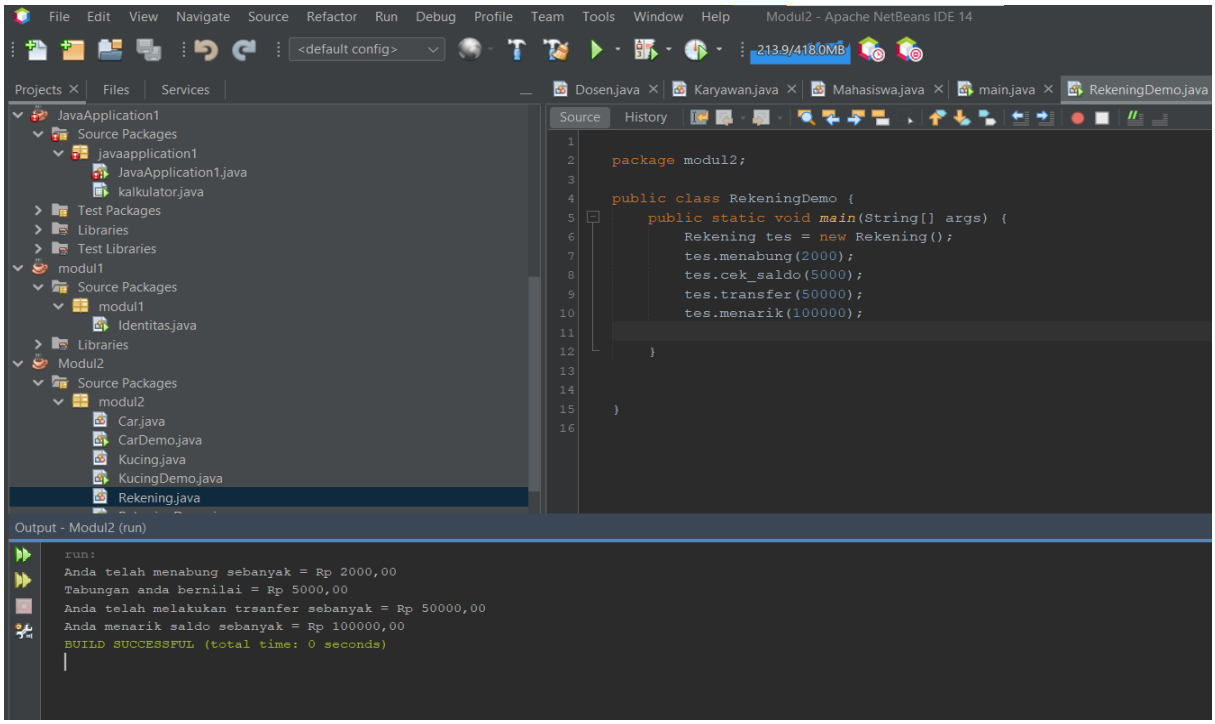


5.Membuat aplikasi *Bank Account* (Rekening Bank)

a. Membuat class yang dapat merepresentasikan object Rekening tersebut.Variabel dan object ini adalah *saldo,no_rekening*, nama dan method berupa *cek_saldo(), menabung(), menarik()*, dan *transfer().*

```java
package modul2;


public class Rekening {
    int saldo;
    int noRekening;




    public void menabung(int tabung){
        System.out.println("Anda telah menabung sebanyak = Rp " + tabung + ",00");

    }
    void cek_saldo(int saldo){

            System.out.println("Tabungan anda bernilai = Rp " + saldo + ",00");


    }
    void menarik(int tarik){
            System.out.println("Anda menarik saldo sebanyak = Rp " + tarik+",00");

    }
    void transfer(int transfer){
        System.out.println("Anda telah melakukan trsanfer sebanyak = Rp " + transfer + ",00");

    }

}
```

b.Membuat class yang memiliki fungsi *main()* yang digunakan untuk mendemokan pembuatan object tersebut.



6. Daftar variabel dan fungsi/method yang dimiliki oleh Class String .

getBytes()	Encodes this String into a sequence of bytes using the named charset, storing the result into a new byte array	byte[]
getChars()	Copies characters from a string to an array of chars	void
hashCode()	Returns the hash code of a string	int
indexOf()	Returns the position of the first found occurrence of specified characters in a string	int
intern()	Returns the canonical representation for the string object	String
isEmpty()	Checks whether a string is empty or not	boolean
lastIndexOf()	Returns the position of the last found occurrence of specified characters in a string	int
length()	Returns the length of a specified string	int
matches()	Searches a string for a match against a regular expression, and returns the matches	boolean
offsetByCodePoints()	Returns the index within this String that is offset from the given index by codePointOffset code points	int
regionMatches()	Tests if two string regions are equal	boolean
replace()	Searches a string for a specified value, and returns a new string where the specified values are replaced	String
replaceFirst()	Replaces the first occurrence of a substring that matches the given regular expression with the given replacement	String

Method	Description	Return Type
charAt()	Returns the character at the specified index (position)	char
codePointAt()	Returns the Unicode of the character at the specified index	int
codePointBefore()	Returns the Unicode of the character before the specified index	int
codePointCount()	Returns the number of Unicode values found in a string.	int
compareTo()	Compares two strings lexicographically	int
compareToIgnoreCase()	Compares two strings lexicographically, ignoring case differences	int
concat()	Appends a string to the end of another string	String
contains()	Checks whether a string contains a sequence of characters	boolean
contentEquals()	Checks whether a string contains the exact same sequence of characters of the specified CharSequence or StringBuffer	boolean
copyValueOf()	Returns a String that represents the characters of the character array	String
endsWith()	Checks whether a string ends with the specified character(s)	boolean
equals()	Compares two strings. Returns true if the strings are equal, and false if not	boolean
equalsIgnoreCase()	Compares two strings, ignoring case considerations	boolean
format()	Returns a formatted string using the specified locale, format string, and arguments	String

replaceAll()	Replaces each substring of this string that matches the given regular expression with the given replacement	String
split()	Splits a string into an array of substrings	String[]
startsWith()	Checks whether a string starts with specified characters	boolean
subSequence()	Returns a new character sequence that is a subsequence of this sequence	CharSequence
substring()	Returns a new string which is the substring of a specified string	String
toCharArray()	Converts this string to a new character array	char[]
toLowerCase()	Converts a string to lower case letters	String
toString()	Returns the value of a String object	String
toUpperCase()	Converts a string to upper case letters	String
trim()	Removes whitespace from both ends of a string	String
valueOf()	Returns the string representation of the specified value	String

log(x)	Returns the natural logarithm (base E) of x	double
log10(x)	Returns the base 10 logarithm of x	double
log1p(x)	Returns the natural logarithm (base E) of the sum of x and 1	double
max(x, y)	Returns the number with the highest value	double|float|int|long
min(x, y)	Returns the number with the lowest value	double|float|int|long
nextAfter(x, y)	Returns the floating point number adjacent to x in the direction of y	double|float
nextUp(x)	Returns the floating point value adjacent to x in the direction of positive infinity	double|float
pow(x, y)	Returns the value of x to the power of y	double
random()	Returns a random number between 0 and 1	double
round(x)	Returns the value of x rounded to its nearest integer	int
rint(x)	Returns the double value that is closest to x and equal to a mathematical integer	double
signum(x)	Returns the sign of x	double
sin(x)	Returns the sine of x (x is in radians)	double
sinh(x)	Returns the hyperbolic sine of a double value	double
sqrt(x)	Returns the square root of x	double
tan(x)	Returns the tangent of an angle	double
tanh(x)	Returns the hyperbolic tangent of a double value	double
toDegrees(x)	Converts an angle measured in radians to an approx. equivalent angle measured in degrees	double

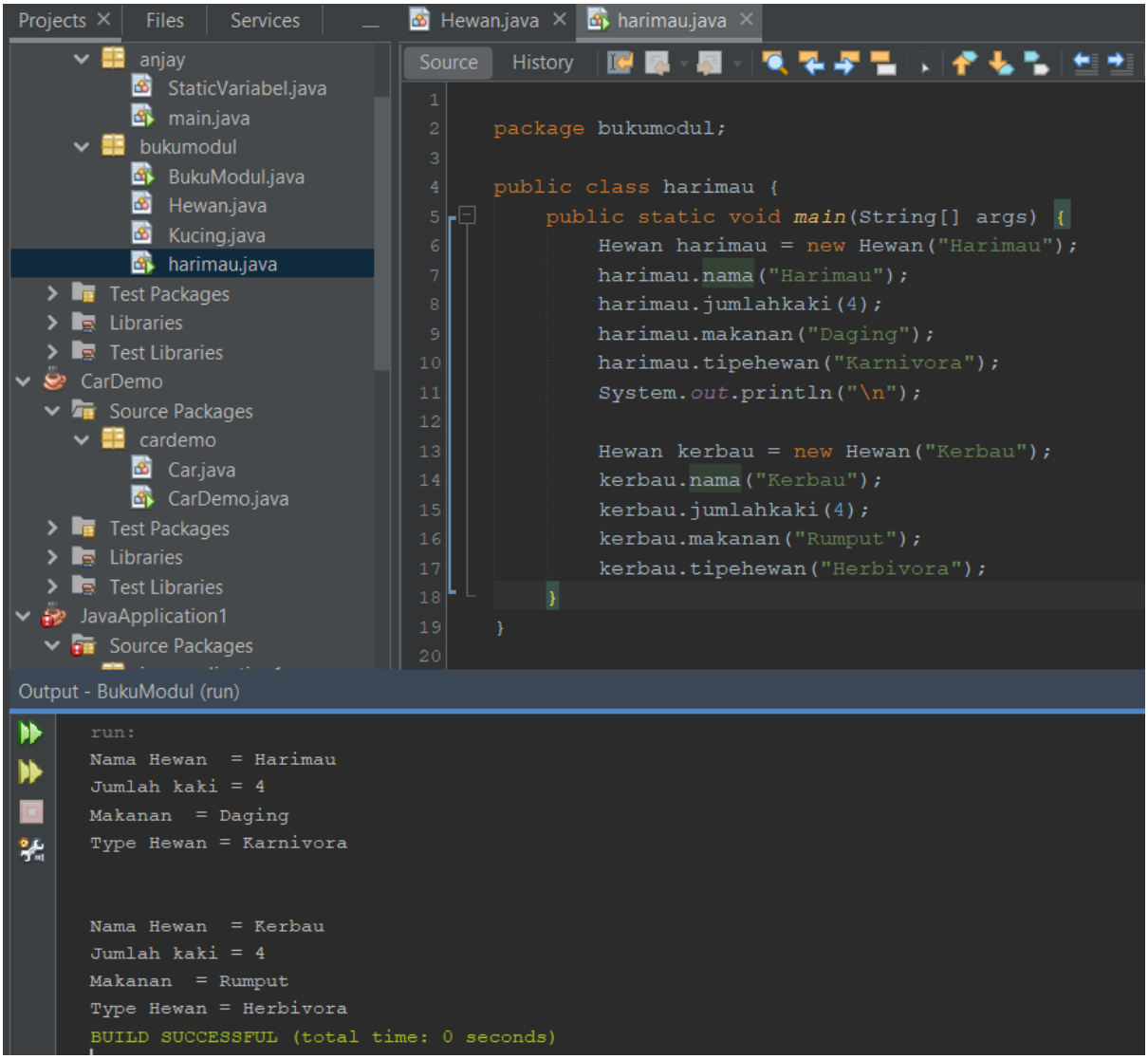
Method	Description	Return Type
abs(x)	Returns the absolute value of x	double|float|int|long
acos(x)	Returns the arccosine of x, in radians	double
asin(x)	Returns the arcsine of x, in radians	double
atan(x)	Returns the arctangent of x as a numeric value between -PI/2 and PI/2 radians	double
atan2(y,x)	Returns the angle theta from the conversion of rectangular coordinates (x, y) to polar coordinates (r, theta).	double
cbrt(x)	Returns the cube root of x	double
ceil(x)	Returns the value of x rounded up to its nearest integer	double
copySign(x, y)	Returns the first floating point x with the sign of the second floating point y	double
cos(x)	Returns the cosine of x (x is in radians)	double
cosh(x)	Returns the hyperbolic cosine of a double value	double
exp(x)	Returns the value of E^x	double
expm1(x)	Returns e^x -1	double
floor(x)	Returns the value of x rounded down to its nearest integer	double
getExponent(x)	Returns the unbiased exponent used in x	int
hypot(x, y)	Returns sqrt(x^2 +y^2) without intermediate overflow or underflow	double
IEEEremainder(x, y)	Computes the remainder operation on x and y as prescribed by the IEEE 754 standard	double
toRadians(x)	Converts an angle measured in degrees to an approx. angle measured in radians	double
ulp(x)	Returns the size of the unit of least precision (ulp) of x	double|float

2.5 Pekerjaan Rumah

1. Membuat class *Hewan* dan juga ciptakan object dari class tersebut, Sehingga kita bisa membuat berbagai macam object hewan dengan karakternya masing-masing.

```
package bukumodul;


public class Hewan {
    String namahewan;
    int jumlahkaki;
    String makanan;
    String tipehewan;


    Hewan(String namahewan){

    }
    void nama(String namahewan){
         this.namahewan = namahewan ;
        System.out.println("Nama Hewan  = " + namahewan);
    }
    void jumlahkaki(int jumlahkaki){
        this.jumlahkaki = jumlahkaki;
        System.out.println("Jumlah kaki = " + this.jumlahkaki);
    }
    void makanan(String makanan){
        System.out.println("Makanan  = " + makanan);
    }
    void tipehewan(String apa){
        System.out.println("Type Hewan = " + apa);
    }
}
```

Program diatas akan menghasilkan output seperti dibawah ini.


Projects
Files
Services
anjay
StaticVariabel.java
main.java
bukumodul
BukuModul.java
Hewan.java
Kucing.java
harimau.java
Test Packages
Libraries
Test Libraries
CarDemo
Source Packages
cardemo
Car.java
CarDemo.java
Test Packages
Libraries
Test Libraries
JavaApplication1
Source Packages
Hewan.java
harimau.java
Source
History
1 package bukumodul;
2
3 public class harimau {
4 public static void main(String[] args) {
5 Hewan harimau = new Hewan("Harimau");
6 harimau.nama("Harimau");
7 harimau.jumlahkaki(4);
8 harimau.makanan("Daging");
9 harimau.tipehewan("Karnivora");
10 System.out.println("\n");
11
12 Hewan kerbau = new Hewan("Kerbau");
13 kerbau.nama("Kerbau");
14 kerbau.jumlahkaki(4);
15 kerbau.makanan("Rumput");
16 kerbau.tipehewan("Herbivora");
17 }
18 }
19
20
Output - BukuModul (run)
run:
Nama Hewan = Harimau
Jumlah kaki = 4
Makanan = Daging
Type Hewan = Karnivora
Nama Hewan = Kerbau
Jumlah kaki = 4
Makanan = Rumput
Type Hewan = Herbivora
BUILD SUCCESSFUL (total time: 0 seconds)

2.Membuat class berdasarkan class diagram pada Gambar 2.4.

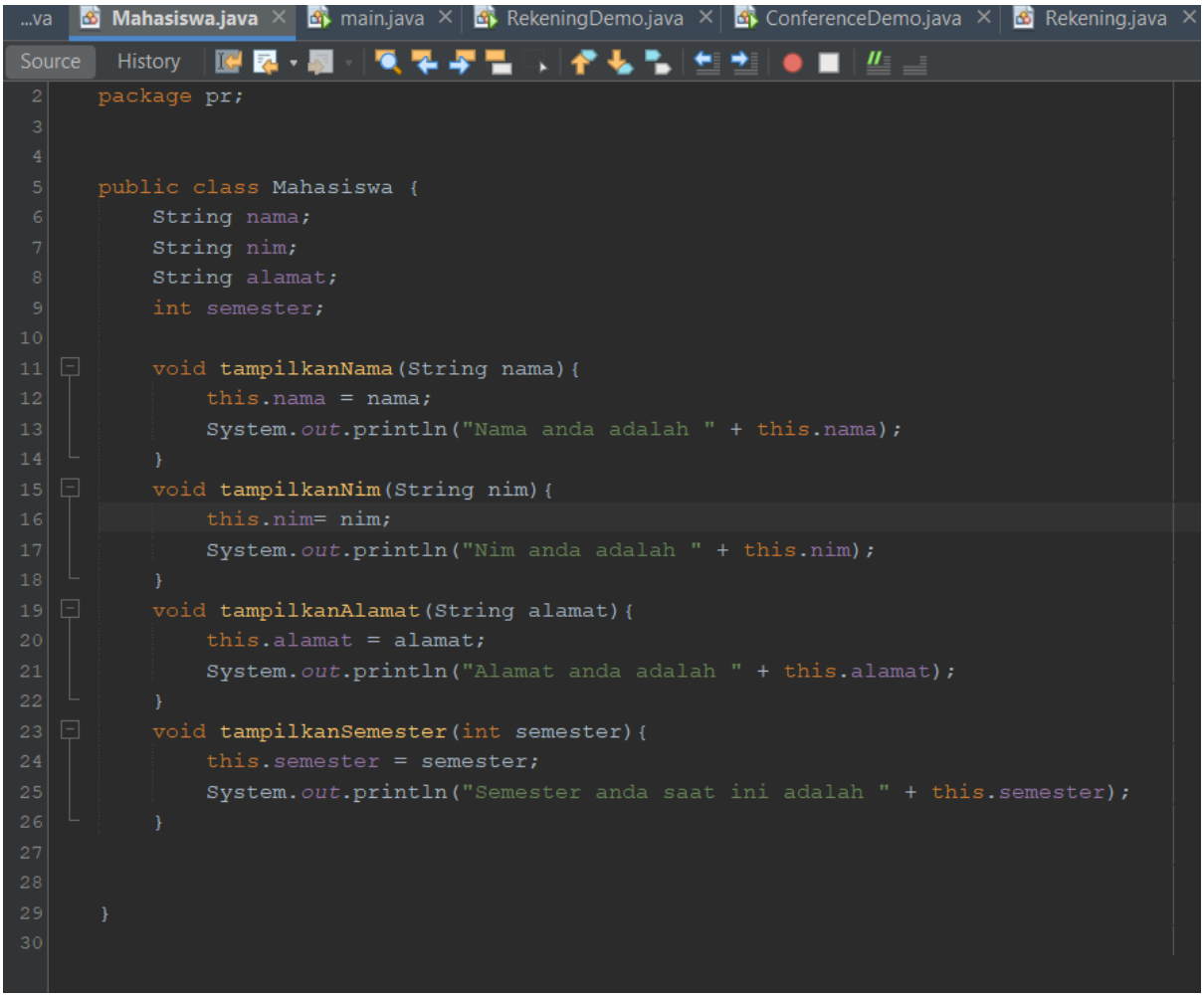
a. class Dosen

```java
package pr;



public class Dosen {
    String nama;
    int nik;
    String pendidikan;
    String tglLahir;



    void tampilkanNama(String nama){
        this.nama = nama;
        System.out.println("Nama anda adalah " + this.nama);
    }

    void tampilkanTglLahir(String tglLahir){
        this.tglLahir = tglLahir;
        System.out.println("Tanggal lahir anda adalah  " + this.tglLahir);
    }
    void tampilkanNik(int nik){
        this.nik = nik;
        System.out.println("NIK  anda adalah  " + this.nik);
    }



}
```

b. Class Karyawan

```java
package pr;


public class Karyawan {
    String nama;
    String alamat;
    String jabatan;
    double gaji;


    void tampilkanNama(String nama){
        this.nama = nama;
        System.out.println("Nama anda adalah " + this.nama);
    }
    void tampilkanJabatan(String jabatan){
        this.jabatan = jabatan;
        System.out.println("Jabatan anda saat ini adalah " + this.jabatan);
    }
    void tampilkanAlamat(String alamat){
        this.alamat = alamat;
        System.out.println("Alamat anda adalah " + this.alamat);
    }
    void tampilkanGaji(double gaji){
        this.gaji = gaji;
        System.out.println("Gaji anda adalah " + this.gaji);
    }

}
```

c. Class Mahasiswa




```java
package pr;


public class Mahasiswa {
    String nama;
    String nim;
    String alamat;
    int semester;

    void tampilkanNama(String nama){
        this.nama = nama;
        System.out.println("Nama anda adalah " + this.nama);
    }
    void tampilkanNim(String nim){
        this.nim= nim;
        System.out.println("Nim anda adalah " + this.nim);
    }
    void tampilkanAlamat(String alamat){
        this.alamat = alamat;
        System.out.println("Alamat anda adalah " + this.alamat);
    }
    void tampilkanSemester(int semester){
        this.semester = semester;
        System.out.println("Semester anda saat ini adalah " + this.semester);
    }


}
```