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 \*/

package javaapplication17;

/\*\*

 \*

 \* @author enas

 \*/

//abstract class

public abstract class Animal

{

 protected int age;

 protected String gender;

 public Animal()

 {

 age= 1;

 gender= "female";

 System.out.println("hello from Animal constructor");

 }

 public void test()

 {

 System.out.println("abstract class function: test( )");

 }

 public abstract void breathe();// abstract method

 public static void main(String[] args)

 {

 // Animal m = new Animal(); wrong

 Cat t = new Cat("mimi");

 Bird b = new Bird();

 Animal a= new Cat("lolo");

 Animal m= new Bird();

 Animal[] an= new Animal[4];

 an[0]= t;

 an[1]= b;

 an[2]= a;

 an[3]= m;

 for(int i=0; i<an.length;i++)

 {

 an[i].breathe();

 if(an[i] instanceof Bird)

 { Bird rr;

 rr= (Bird)an[i];

 rr.fly();

 }

 }

 }

}

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public class Bird extends Animal implements IAnimal

{

 public void fly()

 {System.out.println("Bird is flying");}

 @Override

 public void breathe()

 {

 System.out.println("Bird is breathing");

 }

}

/\*

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 \*/

//concrete class

public class Cat extends Animal

{

 private String name;

 public Cat(String name)

 { //super();

 this.name= name;

 }

 @Override

 public void breathe()

 {

 System.out.println("Cat is breathing");

 }

 public String toString()

 {

 return name+ " "+ gender+" " + age;

 }

}

/\*

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public interface IAnimal

{

 // fields are implicitly public, static and final

 String TYPE="PET";

 // methods in the interface are public and abstract

 void breathe();

}