

Instance variables that you do not initialize are given default initial values by Java

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zanixus@gmail.com



### Listing 6.1 The Class Pet: An Example of Constructors and Set Methods

```
/**
 * Class for basic pet data: name, age, and weight.
 */
public class Pet
{
    private String name;
    private int age;        //in years
    private double weight; //in pounds

    public Pet() ← Default constructor
    {
        name = "No name yet.";
        age = 0;
        weight = 0;
    }

    public Pet(String initialName, int initialAge,
               double initialWeight)
    {
        name = initialName;
        if ((initialAge < 0) || (initialWeight < 0))
        {
            System.out.println("Error: Negative age or weight.");
            System.exit(0);
        }
        else
        {
            age = initialAge;
            weight = initialWeight;
        }
    }

    public void setPet(String newName, int newAge,
                      double newWeight)
    {
        name = newName;
        if ((newAge < 0) || (newWeight < 0))
        {
            System.out.println("Error: Negative age or weight.");
            System.exit(0);
        }
        else
        {
            age = newAge;
            weight = newWeight;
        }
    }
}
```



```
public Pet(String initialName)
{
    name = initialName;
    age = 0;
    weight = 0;
}

public void setName(String newName)
{
    name = newName; //age and weight are unchanged.
}

=====
public Pet(int initialAge)
{
    name = "No name yet.";
    weight = 0;
    if (initialAge < 0)
    {
        System.out.println("Error: Negative age.");
        System.exit(0);
    }
    else
        age = initialAge;
}

public void setAge(int newAge)
{
    if (newAge < 0)
    {
        System.out.println("Error: Negative age.");
        System.exit(0);
    }
    else
        age = newAge;
    //name and weight are unchanged.
}

=====
public Pet(double initialWeight)
{
    name = "No name yet";
    age = 0;
    if (initialWeight < 0)
    {
        System.out.println("Error: Negative weight.");
        System.exit(0);
    }
}
```



```
        else weight = initialWeight;
    }
    public void setWeight(double newWeight)
    {
        if (newWeight < 0)
        {
            System.out.println("Error: Negative weight.");
            System.exit(0);
        }
        else
            weight = newWeight; //name and age are unchanged.
    }

    public String getName()
    {
        return name;
    }
    public int getAge()
    {
        return age;
    }
    public double getWeight()
    {
        return weight;
    }
    public void writeOutput()
    {
        System.out.println("Name: " + name);
        System.out.println("Age: " + age + " years");
        System.out.println("Weight: " + weight + " pounds");
    }
}
```

### Remember Constructors and Set Methods Are Used in Related but Different Ways

Constructors are called only when you create an object. To change the state of an existing object, you need one or more set methods.

