Birds on a wire

class Bird

Bird
properties **name** **isSleeping** **isSinging**
functions **animate** **draw** **tap**

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properties **name** **isSleeping** **isSinging**
functions **animate** **draw** **tap**

```
class Bird {

    // constructor

    Bird();

    // properties

    String name;
    boolean isSleeping;
    boolean isSinging;

    // functions

    void animate();
    void draw();
    void tap(int tapX, int tapY);
}
```

class Bird

Bird
properties **name** **isSleeping** **isSinging**
functions **animate** **draw** **tap**

```
class Bird {

    // constructor

    Bird();

    // properties

    String name;
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    // functions

    void animate();
    void draw();
    void tap(int tapX, int tapY);
}
```

call a Bird : `Bird meinVogel = new Bird();`

wie kommt das Objekt
in das Hauptprogramm ?

```
Bird vogel;
setup() {

vogel = new Bird();
}

draw() {

vogel.draw();
}
```

```
class Bird {

    // constructor

    Bird();

    // properties

    String name;
    boolean isSleeping;
    boolean isSinging;

    // functions

    void animate();
    void draw();
    void tap(int tapX, int tapY);
}
```

call properties & functions

```
class Bird {

    // constructors
    Bird() {
     name = „StandartVogel";
     isSleeping = false;
     isSinging = false;
    }

    // properties
    String name;
    boolean isSleeping;
    boolean isSinging;

    // functions
    void animate();
    void draw();
    void tap(int tapX, int tapY);
}
```

```
    // instanciate
    Bird Vogel = new Bird();

    // set properties
Vogel.name = „Philipp";
Vogel.isSinging = true;

    // get properties
boolean x5 = Vogel.isSinging;
String str = Vogel.name;

    // call functions
Vogel.animate();
Vogel.draw();
Vogel.tap(mouseX, mouseY);
```

multiple constructors

```
class Bird {

    // constructors
    Bird() {
      name = „StandartVogel";
      isSleeping = false;
      isSinging = false;
    }
    Bird(String birdName) {
      name = birdName;
      isSleeping = false;
      isSinging = false;
    }
    Bird(String birdName, boolean sleep, boolean sing) {
      name = birdName;
      isSleeping = sleep;
      isSinging = sing;
    }

    // properties
    String name;
    boolean isSleeping;
    boolean isSinging;

    // functions
    void animate();
    void draw();
    void tap(int tapX, int tapY);
}
```

call some Birds :
```
Bird Vogel1 = new Bird();
Bird Vogel2 = new Bird(„Manfred");
Bird Vogel3 = new Bird(„Charlotte", false, true);
```

public & private

Bird	
public properties **name** **isSleeping** **isSinging**	private properties **position**
public functions **animate** **draw** **tap**	private functions **toggleWakeState**

public & private

Bird	
public properties **name** **isSleeping** **isSinging**	private properties **position**
public functions **animate** **draw** **tap**	private functions **toggleWakeState**

```
class Bird {

    // constructor

    Bird();

    // properties

    public String name;
    public boolean isSleeping;
    public boolean isSinging;
    private PVector position;

    // functions

    public void animate();
    public void draw();
    public void tap(int tapX, int tapY);
    private toggleWakeState();
}
```

getter & setter

Bird	
public properties	private properties **position** **name** **isSleeping** **isSinging**
public functions **animate** **draw** **tap** **setName** **getName** **getIsSleeping** **getIsSinging**	private functions **toggleWakeState**

getter & setter

Bird	
public properties	private properties **position** **name** **isSleeping** **isSinging**
public functions **animate** **draw** **tap** **setName** **getName** **getIsSleeping** **getIsSinging**	private functions **toggleWakeState**

```
class Bird {

    // constructor

    Bird();

    // properties

    private String name;
    private boolean isSleeping;
    private boolean isSinging;
    private PVector position;

    // functions

    public void animate();
    public void draw();
    public void tap(int tapX, int tapY);
    public setName(String newName);
    String getName();
    boolean getIsSleeping();
    boolean getIsSinging();
    private toggleWakeState();
}
```

getter & setter

Bird	
public properties	private properties **position** **name** **isSleeping** **isSinging**
public functions **animate** **draw** **tap** **setName** **getName** **getIsSleeping** **getIsSinging**	private functions **toggleWakeState**

```
class Bird {

    // constructor

    Bird();

    // properties

    private String name;
    private boolean isSleeping;
    private boolean isSinging;
    private PVector position;

    // functions

    public void animate();
    public void draw();
    public void tap(int tapX, int tapY);

    public setName(String newName) {
        name = newName;
    }
    String getName() {
        return name;
    }
    boolean getIsSleeping() {
        return isSleeping;
    }
    boolean getIsSinging() {
        return isSinging;
    }

    private toggleWakeState();
}
```

states / bools

Bird	
public properties	private properties **position** **state**
public functions **animate** **draw** **tap** **getState**	private functions **toggleWakeState**

```
// define states

int STATE_AWAKE = 0;
int STATE_SLEEP = 1;
int STATE_SING = 2;
```

states / bools

Bird	
public properties	private properties **position** **state**
public functions **animate** **draw** **tap** **getState**	private functions **toggleWakeState**

```
// define states

int STATE_AWAKE = 0;
int STATE_SLEEP = 1;
int STATE_SING = 2;

class Bird {

    // constructor

    Bird() {

        state = STATE_AWAKE;
    }

    // properties

    private state;

    // functions

    public void animate();
    public void draw();
    public void tap(int tapX, int tapY);
    int getState() { return state; }
    private toggleWakeState();
}
```