

Openframeworks x iPad Game Design (I)

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Three main things today...

- How to show an image in iPhone/iPad?
- How to change an images on touch?
- How to create animation with multiple images?

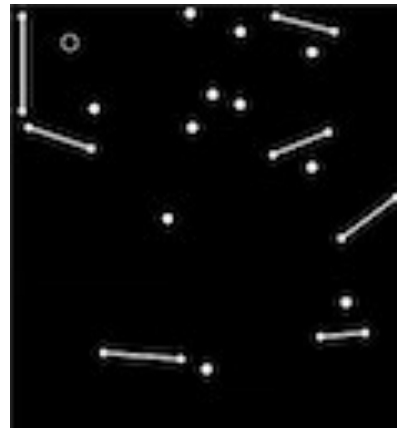
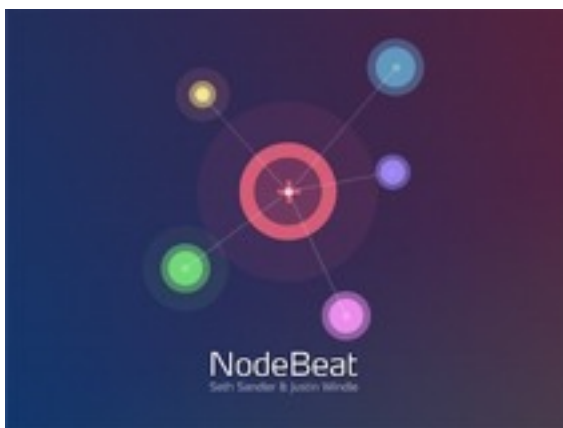
Other one thing...

- Testing multitouch using tangible object



<http://www.openframeworks.cc/>

openFrameworks is an open source C++ toolkit for creative coding.



<http://www.delicious.com/stacks/view/Fuhl88>

OF component

animationExample2

Previous 7 Days

ITamabi2011

Earlier

openframew...ks-7ca7833

apache-ant-1.8.2

of_preRelea...007_android

of_preRelease_v007_osx

of_preRelease_v007_iphone

Earlier

libs

readme.iphone

apps

addons

Earlier

ITamabi

iPhoneAddonsExamples

iPhoneExamples

iPhoneSpecificExamples

Today

changelImages

animationExample2

Previous 7 Days

swapImages

Earlier

fluidController

chimeras

luciernaga

advancedEventsExample

advancedGraphics

audioInputExample

audioOutputExample

dirListExample

emptyExample

eventsExample

fontsExample

fontShapesExample

graphicsExample

imageLoaderExample

moviePlayerExample

polygonExample

soundPlayerExample

textureExample

videoGrabberExample

Today

animationEx

Yesterday

bin

iPhone_Prefi

ofxiphone-I

Project.xcco

src

openframeworks

apps

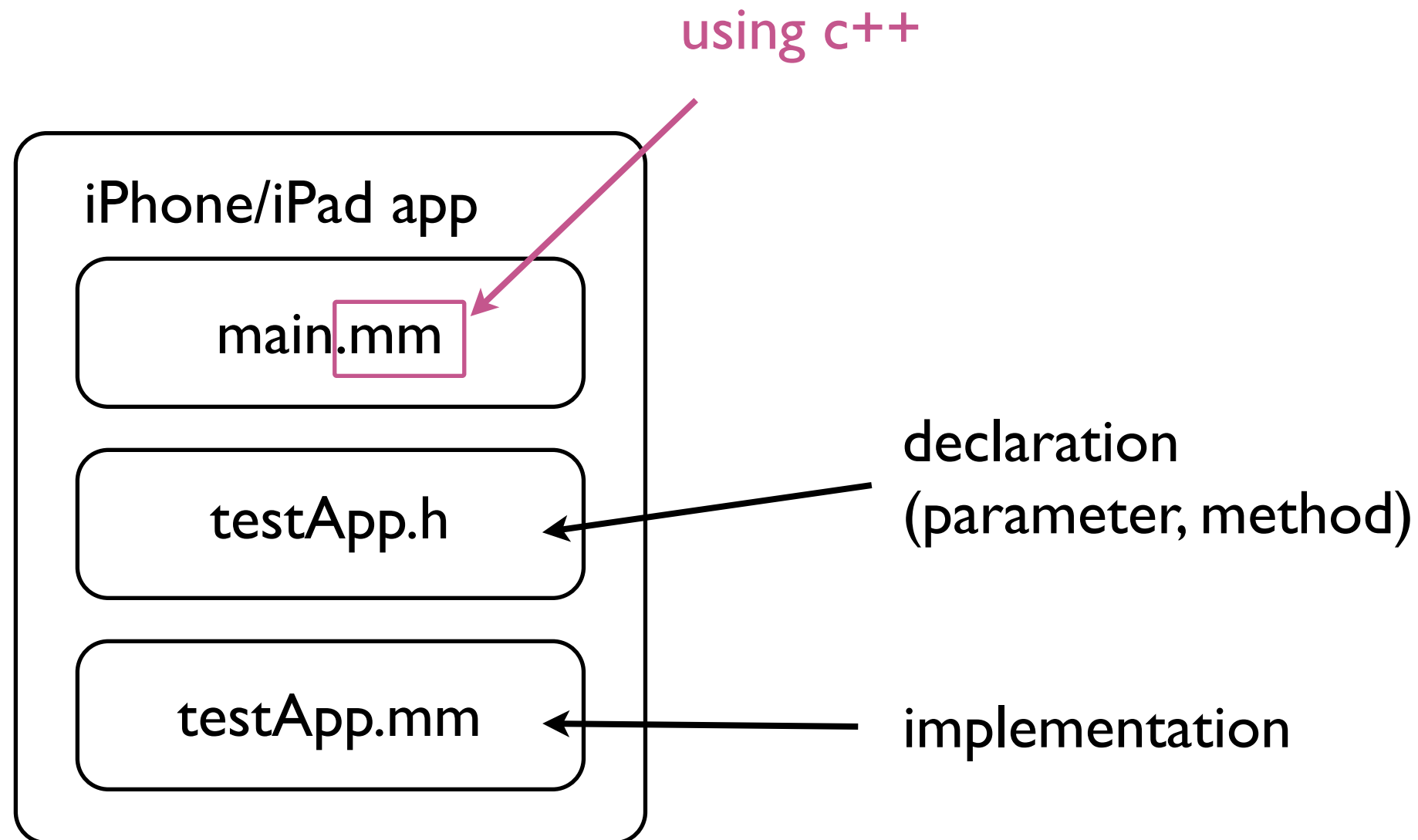
addons

libs

examples

addons

iPhone/iPad application using OF



How to start?

1. create a **copy** of emptyExample in apps folder
2. **rename** the folder and .xcodproj file
3. **open** the project
4. **rename** target
5. make sure it **builds and runs**

 **put your project in the right position**

```
#pragma once

#include "ofMain.h"
#include "ofxiPhone.h"
#include "ofxiPhoneExtras.h"

class testApp : public ofxiPhoneApp {

public:
    void setup();
    void update();
    void draw();
    void exit();

    void touchDown(ofTouchEventArgs &touch);
    void touchMoved(ofTouchEventArgs &touch);
    void touchUp(ofTouchEventArgs &touch);
    void touchDoubleTap(ofTouchEventArgs &touch);
    void touchCancelled(ofTouchEventArgs &touch);

    void lostFocus();
    void gotFocus();
    void gotMemoryWarning();
    void deviceOrientationChanged(int newOrientation);

};
```

testApp.h

```
#include "testApp.h"
```

```
//-----  
void testApp::setup(){  
    // register touch events  
    ofRegisterTouchEvents(this);  
  
    // initialize the accelerometer  
    ofxAccelerometer.setup();  
  
    //iPhoneAlerts will be sent to this.  
    ofxiPhoneAlerts.addListener(this);  
  
    //If you want a landscape oreintation  
    //iPhoneSetOrientation(OFXIPHONE_ORIENTATION_LANDSCAPE_RIGHT);  
  
    ofBackground(127,127,127);  
}
```

setup

execute only once

```
//-----  
void testApp::update(){  
  
}
```

loop

update

```
//-----  
void testApp::draw(){  
  
}
```

loop

draw

```
//-----  
void testApp::exit(){  
  
}
```

testApp.mm


```
//-----
void testApp::touchDown(ofTouchEventArgs &touch){
}

//-----
void testApp::touchMoved(ofTouchEventArgs &touch){
}

//-----
void testApp::touchUp(ofTouchEventArgs &touch){
}

//-----
void testApp::touchDoubleTap(ofTouchEventArgs &touch){
}
}
```

touch event

```
//-----
void testApp::lostFocus(){
}

//-----
void testApp::gotFocus(){
}

//-----
void testApp::gotMemoryWarning(){
}
}
```

alert handler

```
//-----
void testApp::deviceOrientationChanged(int newOrientation){
}

//-----
void testApp::touchCancelled(ofTouchEventArgs& args){
}
}
```

testApp.mm

Try to build and run an emptyExample

iPhone/iPad screenshots



iPad

screen size: 1024x768

resolution: 72 ppi

icon size: 72x72 px



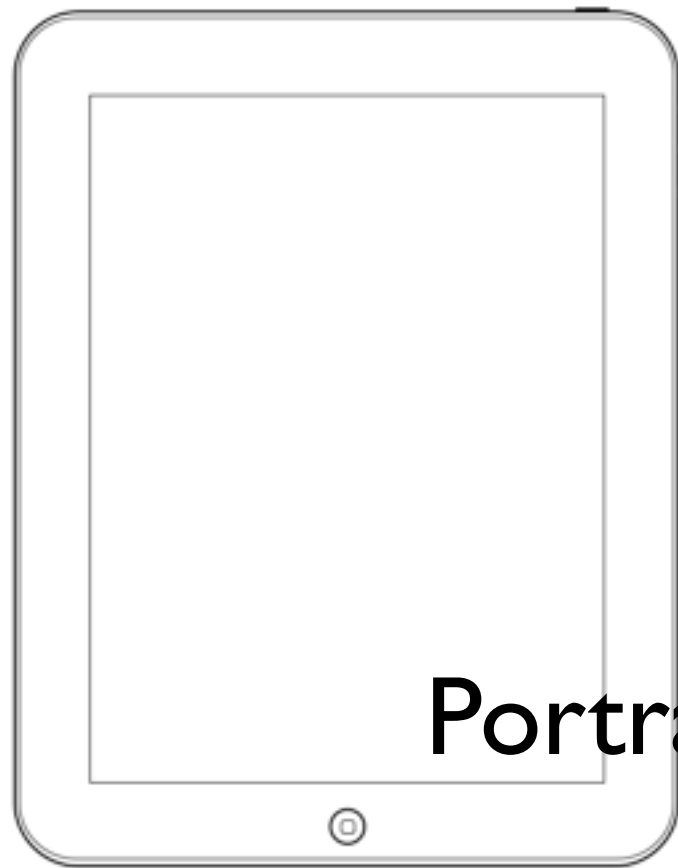
iPhone

screen size: 320x480 (640x960)

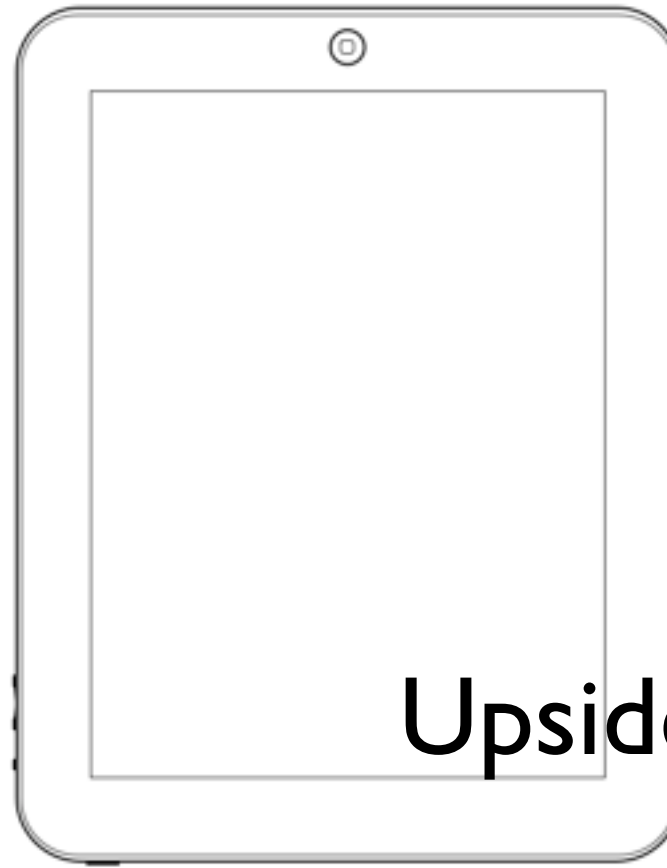
resolution: 72 ppi

icon size: 57x57 px

Orientations



Portrait



Upside Down



Landscape Left



Landscape Right

I. show an image

testApp.h

```
ofImage myImage;
```

testApp.mm

```
myImage.loadImage("images/creature1.png");
```

setup()



```
ofEnableAlphaBlending();
```

```
myImage.draw(100, 100);
```

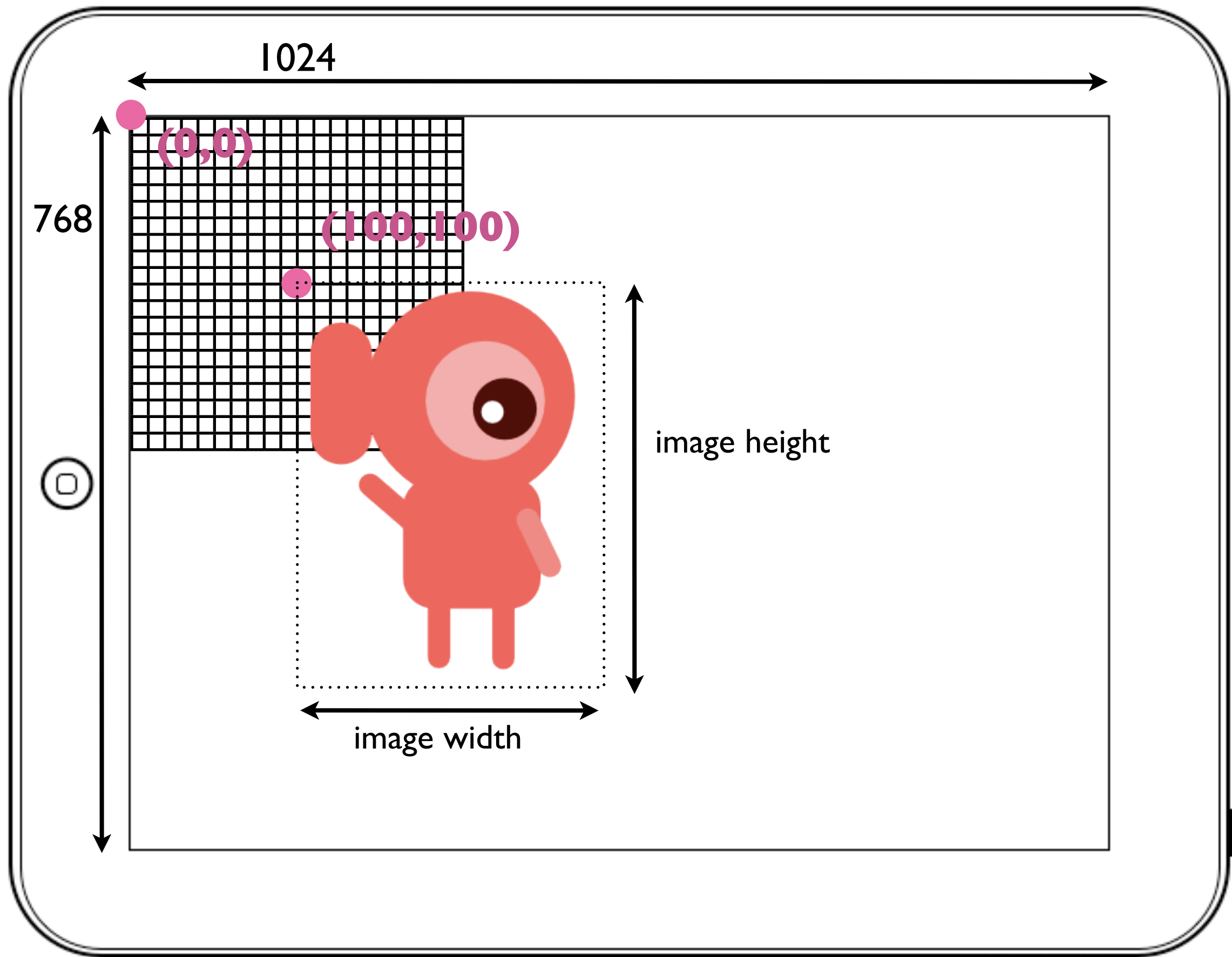
draw()



image type: PNG, JPEG, TIFF, BMP, GIF

position: [project]/bin/data/

http://www.openframeworks.cc/documentation/graphics/ofImage_.html



2. change an image on touch

- bool touched (true / false)

checking flag

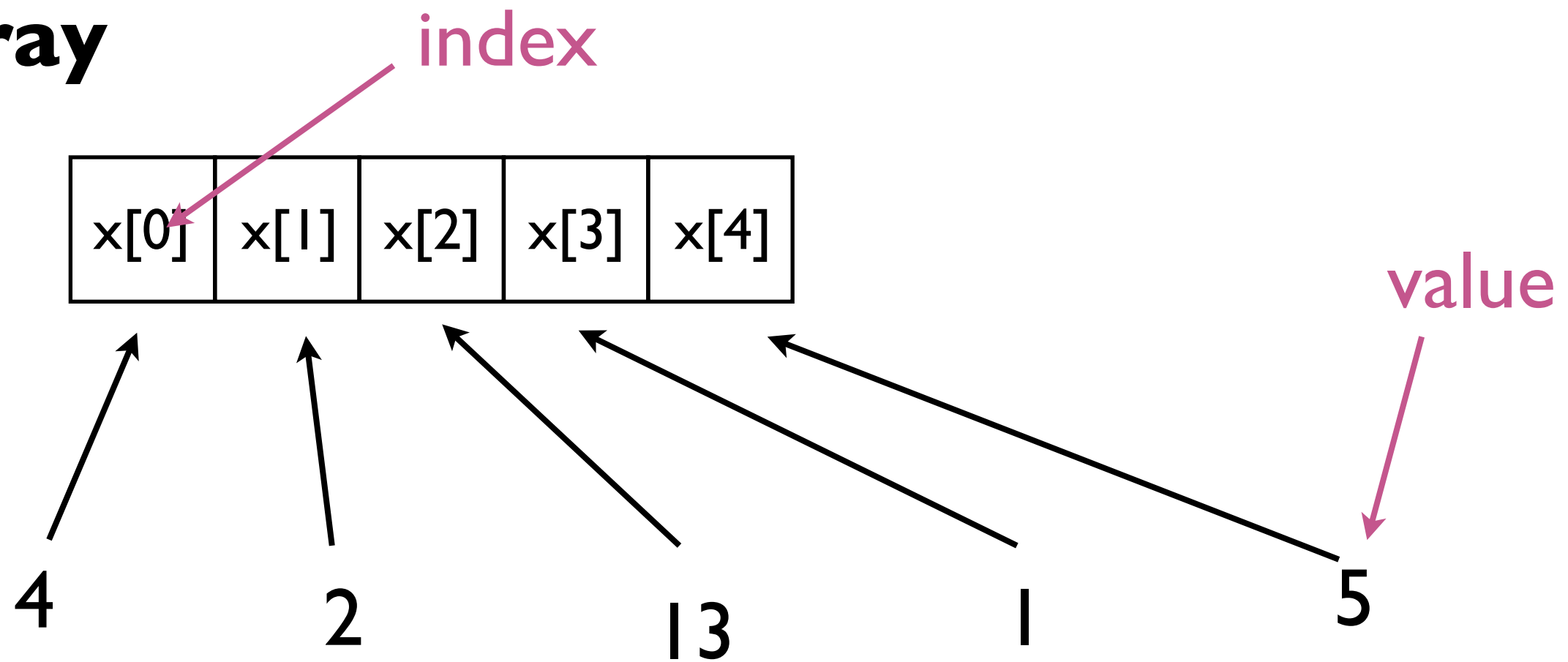
```
touched = false;  
imageA.loadImage("images/creature1.png");  
imageB.loadImage("images/creature3.png"); ← setup()
```

```
void testApp::draw(){  
    if(touched)  
        imageA.draw(100,100);  
    else  
        imageB.draw(100,100);  
}
```

```
void testApp::touchDown(ofTouchEventArgs &touch){  
    touched = true;  
}
```

```
void testApp::touchUp(ofTouchEventArgs &touch){  
    touched = false;  
}
```

Array



`int x[5];` declare a array x
`x[0] = 4` assign value into array x
`x[1] = 2`
`x[2] = 13`
`x[3] = 1`
`x[4] = 5`

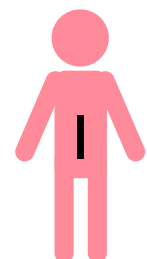
OR

`int x[5] = {4, 2, 13, 1, 5};`

John



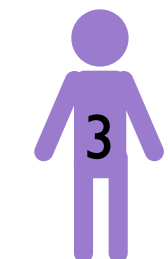
Amy



Mike



Cindy



David



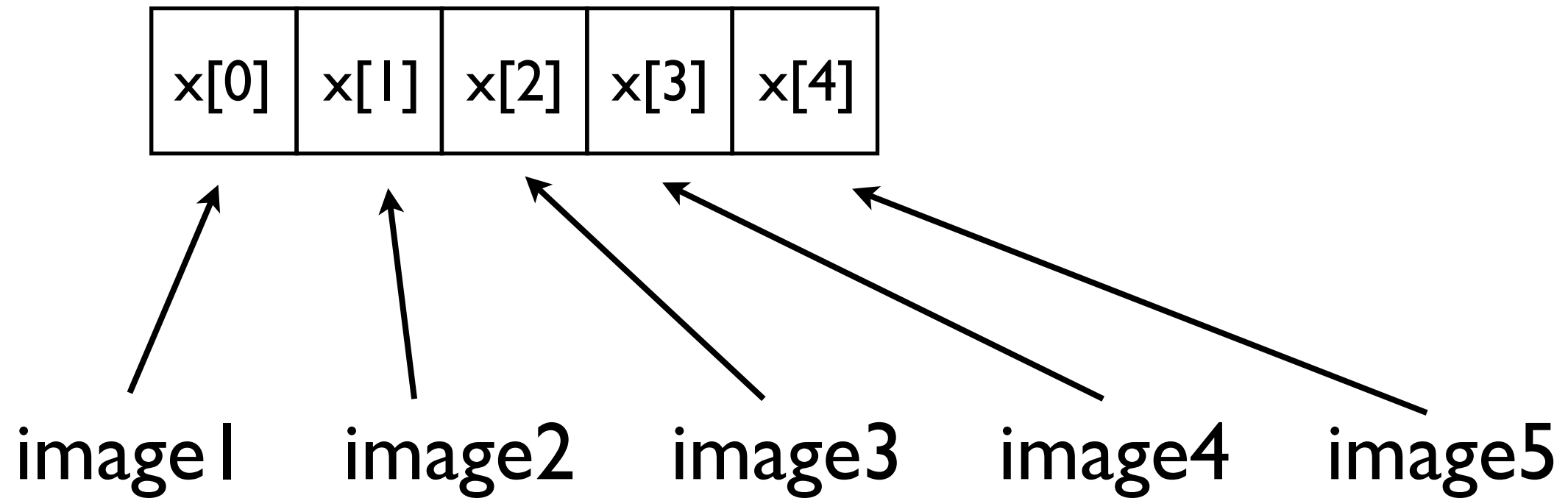
For-loop

```
                initial    condition    addendum
for (int i = 0; i < 10; i++) {
    printf("Hi: %i", i);
}
```

print array x

```
for (int i = 0; i < 5; i++) {
    printf("print x[%i]= %i", x[i]);
}
```

3. create animations using multiple images



```
#define BACKFRAMENUM 10  
ofImage backImage[BACKFRAMENUM];
```

number of images

A pink arrow points from the text "number of images" to the value `BACKFRAMENUM` in the code above.

```
for (int i = 0; i < BACKFRAMENUM; i++) {  
    char char1[32];
```

setup()

```
    sprintf(char1, "images/background%d.png", i+1);  
    backImage[i].loadImage(char1);  
}
```

```
void testApp::draw(){
```

```
    ofEnableAlphaBlending();  
    backImage[currentFrame].draw(0, 0);
```

draw()

```
    currentFrame++;  
    if (currentFrame > BACKFRAMENUM - 1)  
        currentFrame = 0;
```

```
}
```