PhoneGap & jQuery Mobile

Lesson 8

Thomas Mak

makzan@42games.net

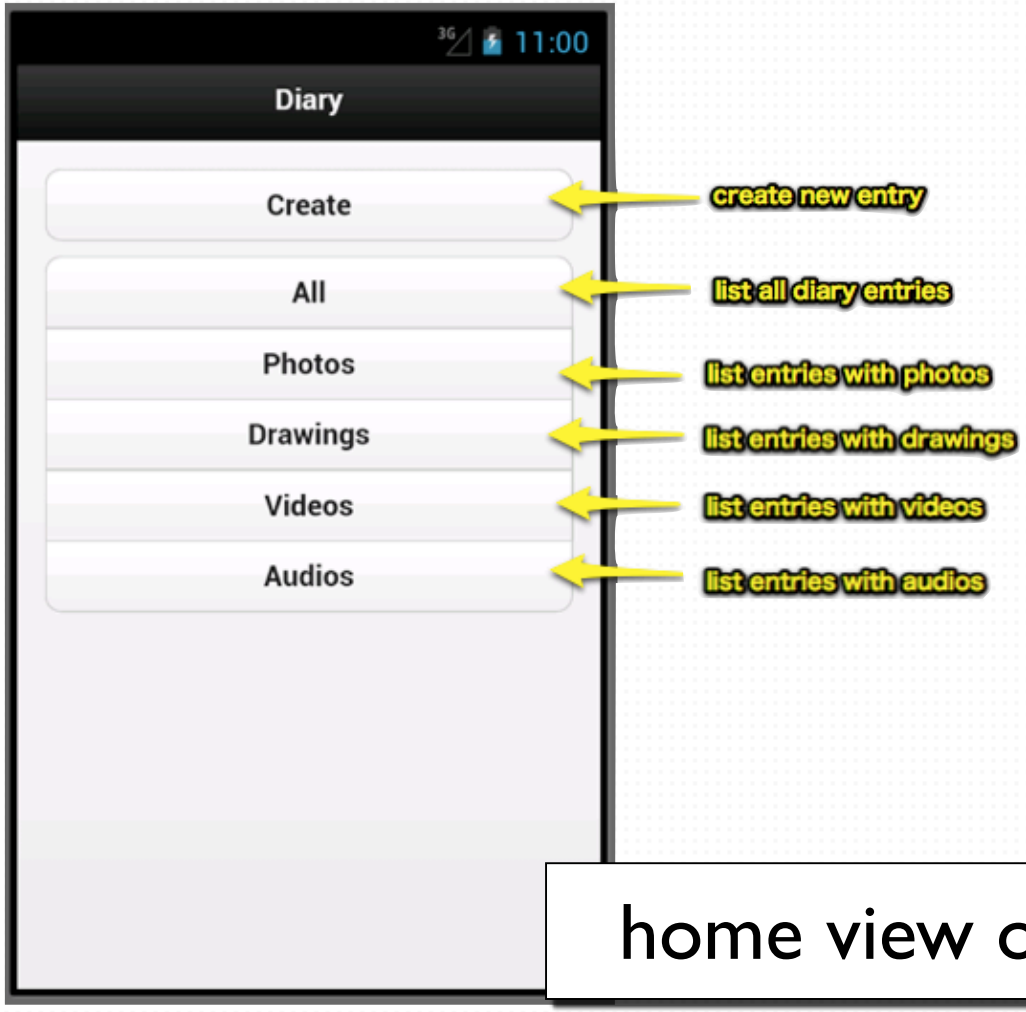
Source Codes

https://github.com/makzan/PhoneGap-Course-Examples

Today

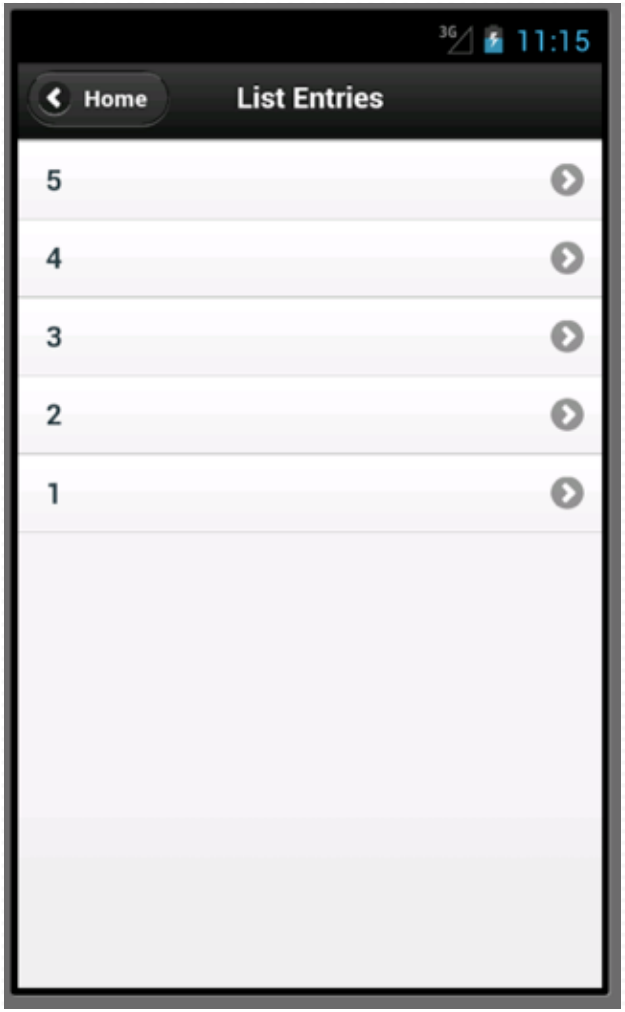
- Creating and listing diary entries
- Drawing in <canvas>
- Saving Drawing and Photo
- Capturing Audio and Video
- Playing Audio and Video

Creating and Listing Entries



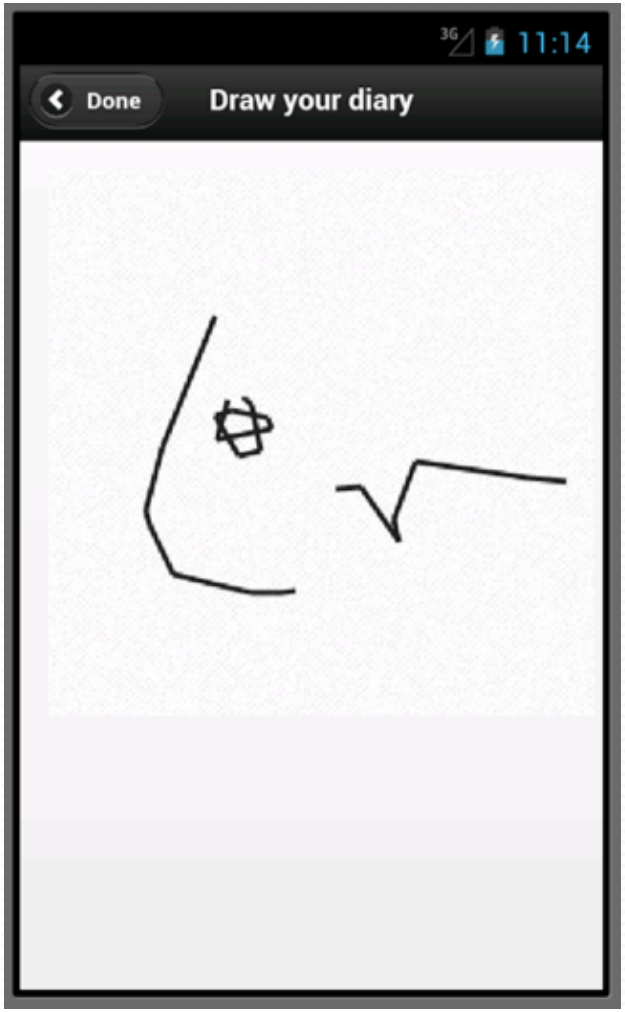
home view of the diary app

Creating and Listing Entries



view for listing entries

Creating and Listing Entries



view for drawing pad

Creating and Listing Entries

view for recording media

Recap, our DB

```
    function DB() {
      this.db = openDatabase("diary", "1.0", "Diary DB", 1024*1024*10);
      // create the table
      this.db.transaction(function(tx){
        tx.executeSql('CREATE TABLE IF NOT EXISTS entries (id integer unique, lat, lng,
note text, video_url, audio_url, photo_url, photo text, drawing text)');
      });

      // manage the entry ID ourselves
      if (localStorage["entries_id"] == undefined)
        localStorage["entries_id"] = 1;
    }
```

revisit our table schema

Recap, our DB

```
    DB.prototype.insert = function(entry)
    {
      this.db.transaction(function(tx){
        tx.executeSql('INSERT INTO entries(id, lat,lng,note,video_url,audio_url,photo_url,
photo, drawing) VALUES(?, ?, ?, ?, ?, ?, ?, ?, ?)',
          [localStorage["entries_id"], entry.lat, entry.lng, entry.note, entry.video_url,
entry.audio_url, entry.photo_url, entry.photo, entry.drawing]);
          localStorage["entries_id"]++;
      });

    }
```

revisit the database insert method

Recap, our DB

```
DB.prototype.selectByID = function(id, callback)
{
  this.db.transaction(function(tx){
    tx.executeSql("SELECT * FROM entries WHERE id=?", [id], function(tx, results){
      if (callback) callback(results);
    })
  })
}
```

let's be able to select an entry by ID.

Creating and Listing Entries

```
Diary.prototype.handleListAllButton = function()
{
  $("#list-all-button").click((function(){
    this.listEntries($('#entries-list'));
  }).bind(this));
}
```

a glance on listing entries.

Creating and Listing Entries

```
Diary.prototype.listEntries = function(element)
{
  var listOf = function(entry) {
    var list = $("<li />");
    var a = ($("<a />"));
    a.addClass('view-entry-button');
    a.attr('data-entry-id', entry.id);
    a.attr('href', '#view');
    a.html(entry.id + ' ' + entry.note);
    list.html(a);
    return list;
  }

  window.diaryapp.db.query(function(results){
    $(element).empty();
    for (var i = results.rows.length - 1; i >= 0; i--) {
      var entry = results.rows.item(i);
      $(element).append(listOf(entry));
    };
    $(element).listview('refresh');
  });
}
```

a glance on listing entries.

Creating and Listing Entries

```
Diary.prototype.handleNewEntryButton = function()
{
  $("#new-entry-button").click(function(){
    window.diaryapp.newEntry = {};
  })
}
```

creating new entry

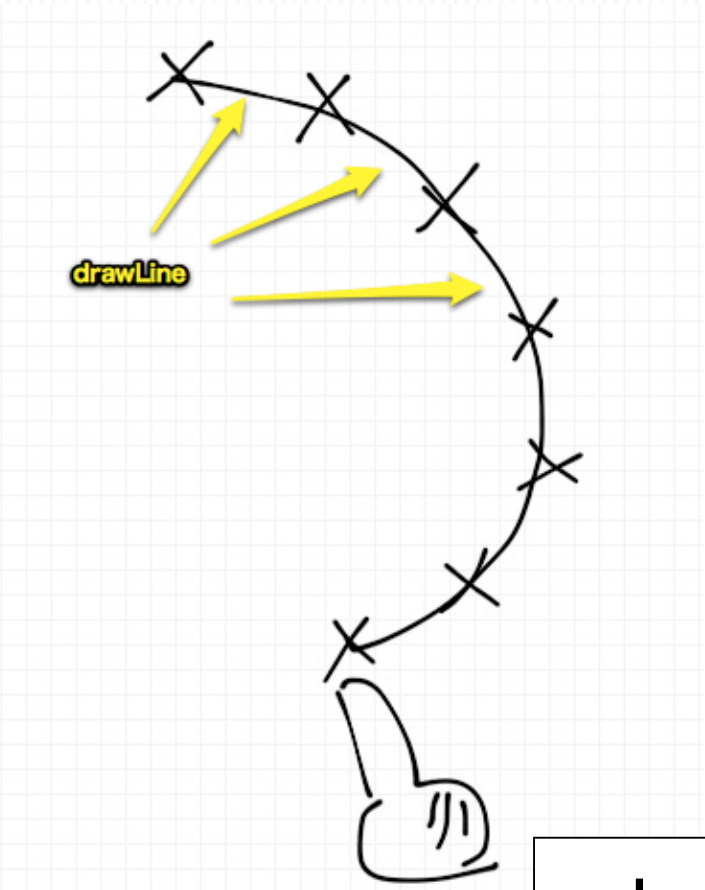
Drawing on <canvas>

```
var canvas = $('#drawing-pad');
var ctx = canvas[0].getContext('2d');

var drawLine = function(ctx, x1, y1, x2, y2, thickness) {
  ctx.beginPath();
  ctx.moveTo(x1,y1);
  ctx.lineTo(x2,y2);
  ctx.lineWidth = thickness;
  ctx.strokeStyle = "#222";
  ctx.stroke();
}
```

drawing line on canvas

Drawing on <canvas>



drawing line on canvas

Drawing on <canvas>

```
// prepare logic

this.isDrawing = false;

var startX = 0;
var startY = 0;
```

some variables for drawing pad

Drawing on <canvas>

```
canvas.bind('touchstart mousedown', (function(e){
  this.isDrawing = true;

  // e.pageX for desktop browser.
  // e.originalEvent.touches[0].pageX for mobile browser with jQuery Mobile.

  var mouseX = e.originalEvent.touches[0].pageX - canvas.offset().left;
  var mouseY = e.originalEvent.touches[0].pageY - canvas.offset().top;

  startX = mouseX;
  startY = mouseY;

}).bind(this));
```

get the first point on touch starts

Drawing on <canvas>

```
canvas.bind('touchmove mousemove', (function(e){
  if (this.isDrawing)
  {
    // e.pageX for desktop browser.
    // e.originalEvent.touches[0].pageX for mobile browser with jQuery Mobile.

    var mouseX = e.originalEvent.touches[0].pageX - canvas.offset().left;
    var mouseY = e.originalEvent.touches[0].pageY - canvas.offset().top;
    drawLine(ctx, startX, startY, mouseX, mouseY, 3);
    startX = mouseX;
    startY = mouseY;
  }
}).bind(this));
```

connect the previous points and keep getting next point on touch moves

Drawing on <canvas>

```
canvas.bind('touchend mouseup', (function(e) {
  this.isDrawing = false;
}).bind(this));
```

toggle the isDrawing flag when touch ends

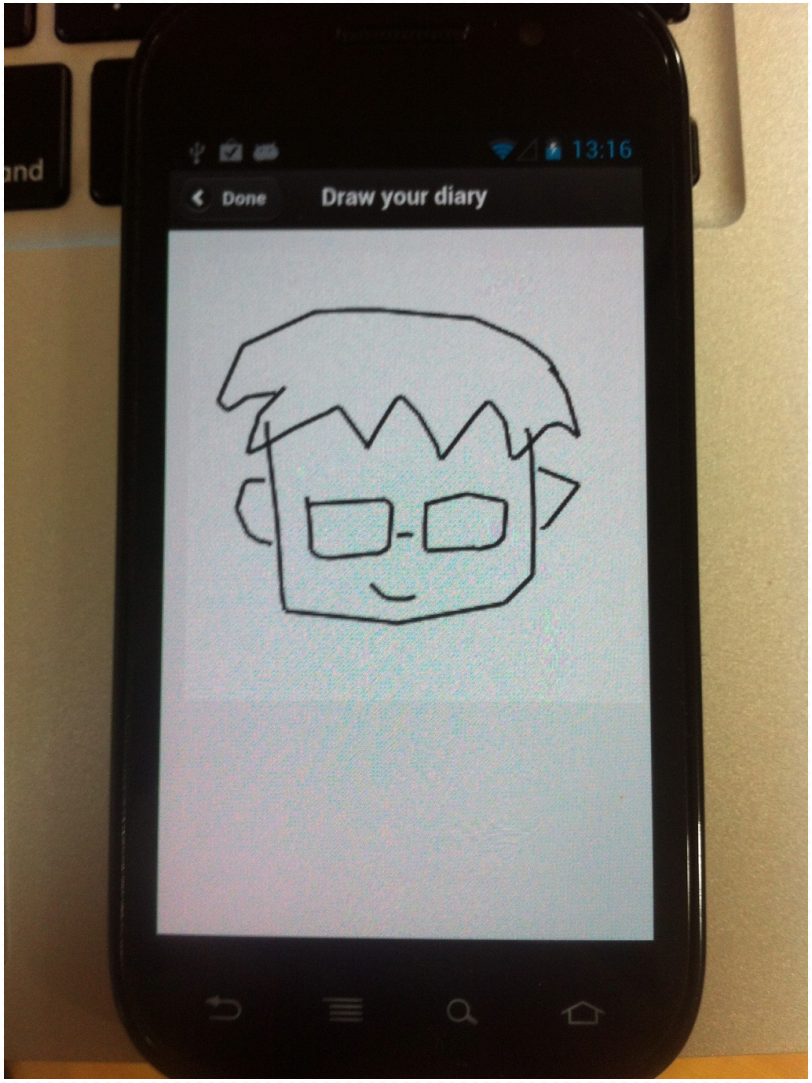
Drawing on <canvas>

```
// when done drawing, save the canvas to PNG
$("#done-drawing").click(function(e){
  var drawing = canvas[0].toDataURL();

  // save to diaryapp.
  window.diaryapp.newEntry.drawing = drawing;
})
```

save the drawing when tapped the done button

Drawing on <canvas>



drawing app

Handle Camera Photo too

```
Diary.prototype.handlePhotoButton = function()
{
  $("#add-photo").click(function(){
    (new Camera()).getPicture(function(imageSrc){
      window.diaryapp.newEntry.photo = imageSrc;
    })
  })
}
```

similar, we save the photo after taking photo

Capture Video

```
var VideoCapture = (function(){
  function VideoCapture() {}

  VideoCapture.prototype.captureVideo = function(callback)
  {
    var onCaptureSuccess = function(video)
    {
      if (callback) callback(video);
    }

    var onCaptureFail = function(message)
    {
      alert('Video Capture Failed: ' + message);
    }

    navigator.device.capture.captureVideo(onCaptureSuccess, onCaptureFail,{});

  }
  return VideoCapture;
})();
```

one line of PhoneGap API to capture video.

Capture Video

```
example:

file name: VID_20120907_102927.mp4

path: file:///storage/sdcard0/DCIM/Camera/VID_20120907_102927.mp4
```

example file name and path after capture

Capture Audio

```
AudioCapture.prototype.captureAudio = function(callback)
{
  var onCaptureSuccess = function(audio)
  {
    if (callback) callback(audio);
  }

  var onCaptureFail = function(message)
  {
    alert('Audio Capture Failed: ' + message);
  }

  navigator.device.capture.captureAudio(onCaptureSuccess, onCaptureFail,{});

}
```

similar with AudioCapture

Capture Audio

```
example:

file name: recording327205518.3gpp

path: file:///storage/sdcard0/recording327205518.3gpp
```

example file name and path after capture

Viewing Entry

```
<article data-role="page" id="view">
  <header data-role='header'>
    <h1>View Entry</h1>
    <a data-icon='arrow-l' data-rel='back'>Back</a>
  </header>
  <section data-role='content'>
    <div id="photo"></div>
    <div id='content'></div>
  </section>
</article>
```

the entry view is an empty page with #photo and #content element.

Viewing Entry

```
$(".view-entry-button").live('click', function(e){

  entryID = $(this).data('entryId');

  window.diaryapp.db.selectByID(entryID, function(diaryEntry){
    var entry = diaryEntry.rows.item(0); // select by ID always results in one item.

    console.log (entry);
    // our entry here.
    // add info to $("#content") here

  });

});
```

select the diary entry by the ID

Viewing Entry

```
$("#content").append(entry.note);
```

first, we can append the text note to content.

Viewing Entry

```
$("#photo").hide();
if (entry.photo != undefined)
{
  $("#photo").show();
  $("#photo").css('background-image', "url("+ entry.photo +")");
}
```

second, we can show the photo using the technique from last lesson.

Viewing Entry

```
if (entry.drawing != undefined)
{
  var drawing = $("<img />");
  drawing.addClass('view-drawing');
  drawing.attr('src', entry.drawing);
  $("#content").append(drawing);
}
```

third, we can show the drawing with img tag.
<img src='.....'>

Viewing Entry

```
if (entry.video_url != undefined)
{
  var video = "<a href='#' class='media-play' data-role='button' data-src='" +
entry.video_url + "'>Play Video</a>";
  $("#content").append(video);
}

if (entry.audio_url != undefined)
{
  var audio = "<a href='#' class='media-play' data-role='button' data-src='" +
entry.audio_url + "'>Play Audio</a>";
  $("#content").append(audio);
}
```

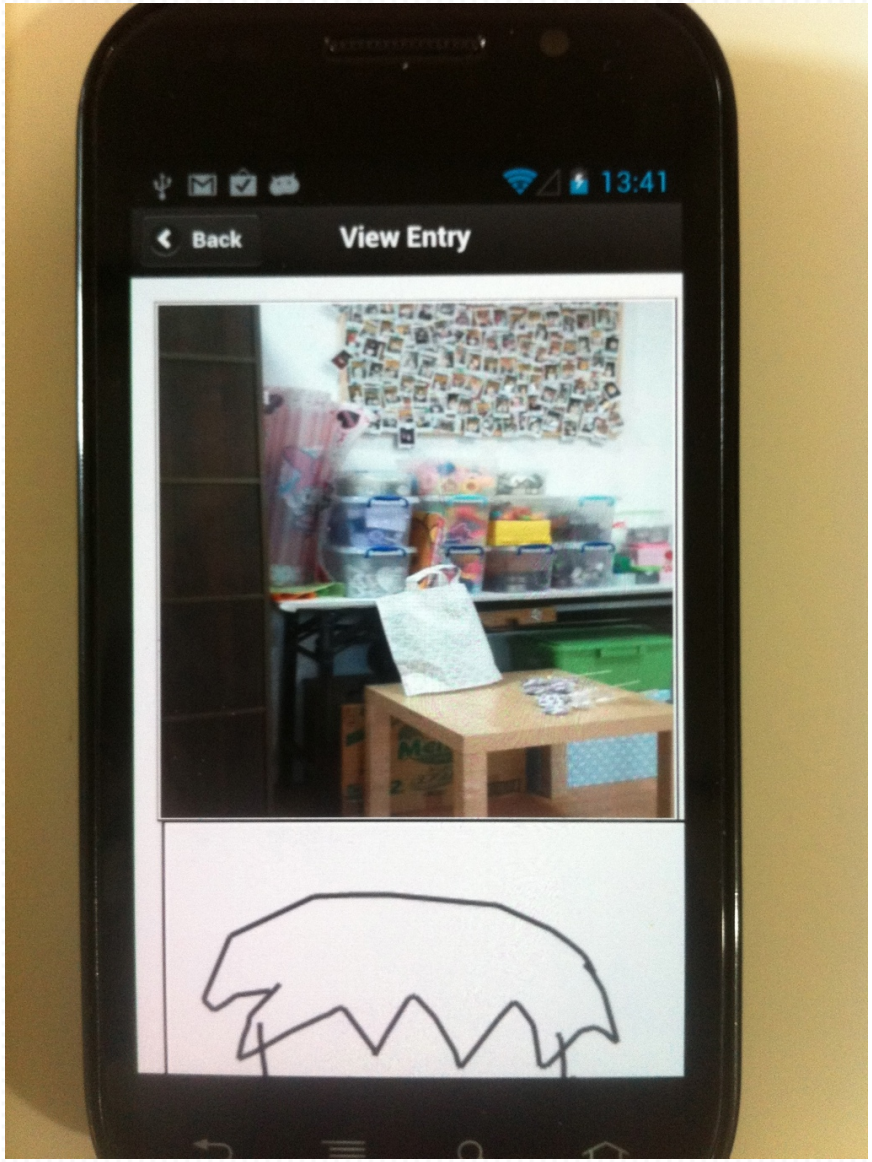
for the video and audio, we create the button first and handle the playback later.

Viewing Entry

```
// create jQuery Mobile button programmatically.
$("#content").find("a[data-role='button']").button();
```

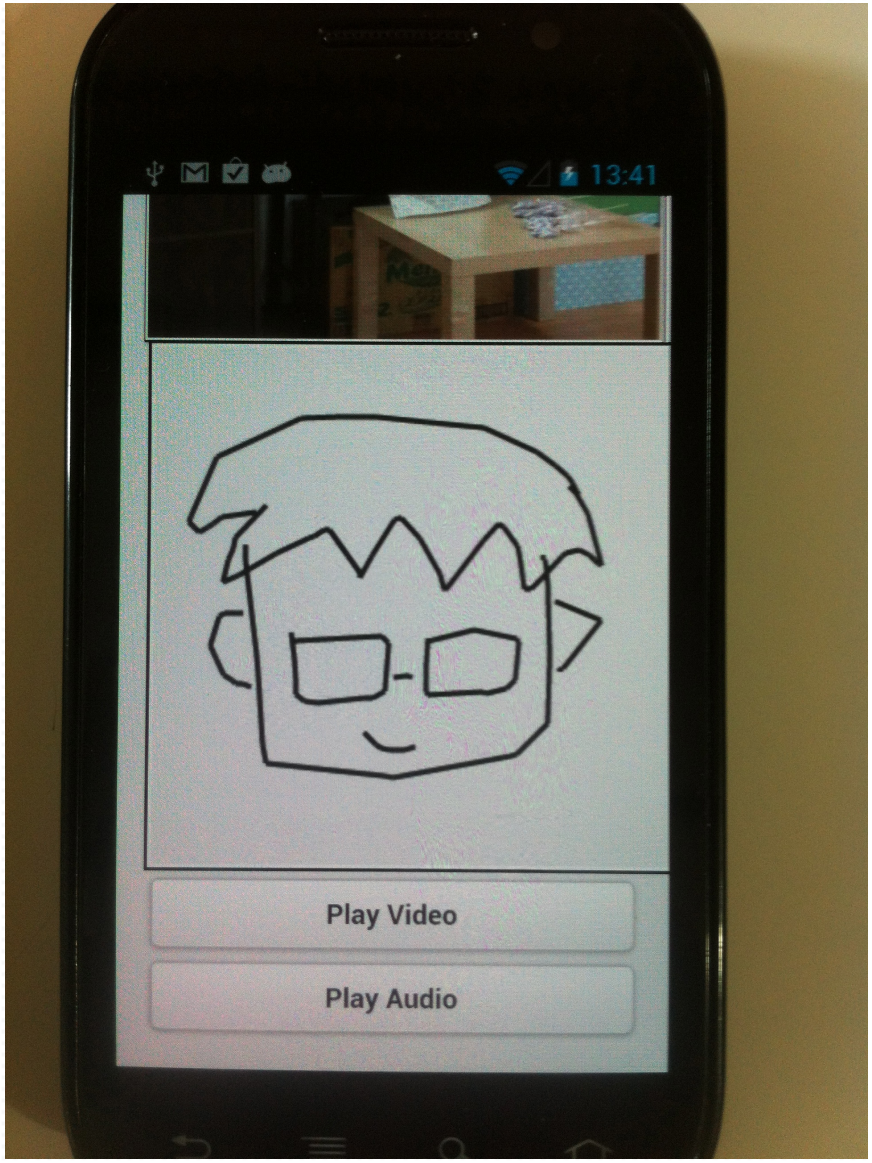
after we created data-role=button in program, we want jQuery Mobile to make it like a button.

Viewing Entry



viewing entry with photo

Viewing Entry



showing drawing

Playing Video and Audio

In iOS, we can simply use the HTML5 <video> tag and <audio> tag to playback these media files.

In Android, we need the official VideoPlugin to play them well.

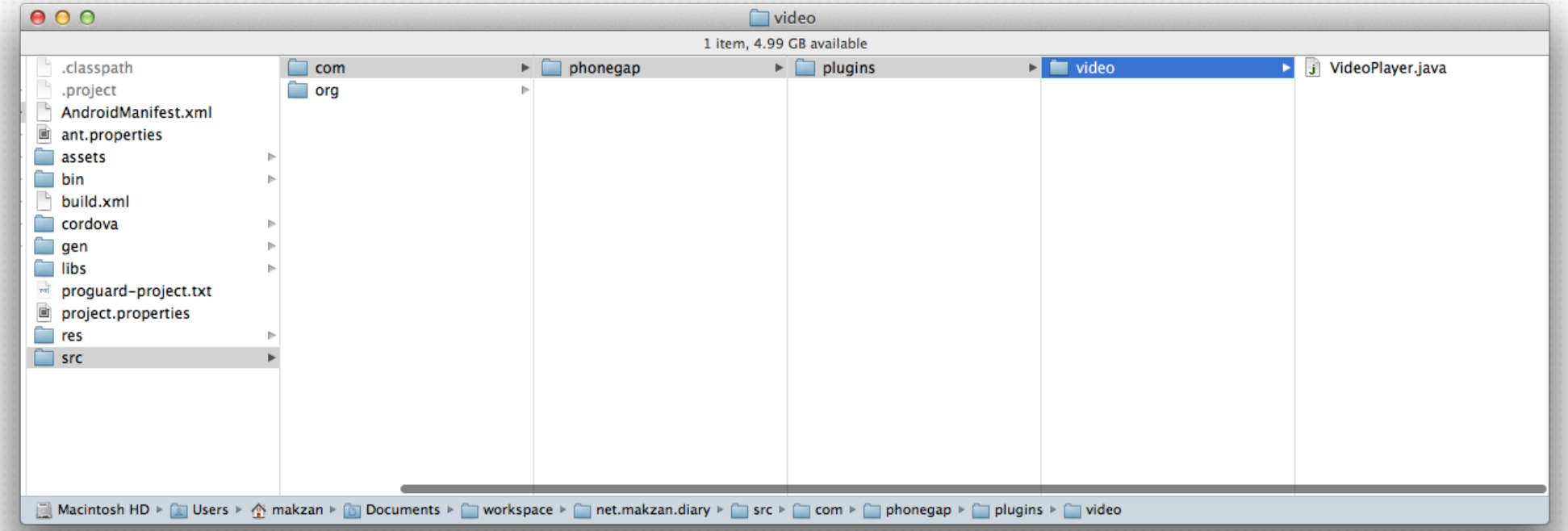
Playing Video and Audio

the VideoPlayer plugin can be downloaded in

https://github.com/phonegap/phonegap-plugins/tree/master/Android/VideoPlayer

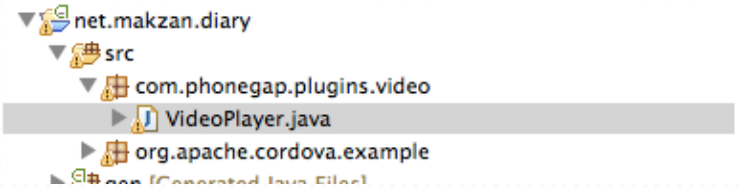
or you can copy it from the example project file.

Playing Video and Audio



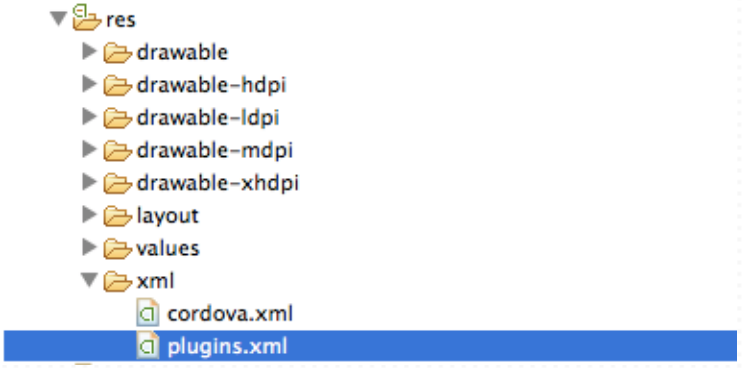
place the com.phonegap.plugins.video inside src folder.

Playing Video and Audio



and this is what eclipse looks like after import the database.

Playing Video and Audio



next, we find the plugins.xml file

Playing Video and Audio

```
-->
<plugins>
    <plugin name="App" value="org.apache.cordova.App"/>
    <plugin name="Geolocation" value="org.apache.cordova.GeoBroker"/>
    <plugin name="Device" value="org.apache.cordova.Device"/>
    <plugin name="Accelerometer" value="org.apache.cordova.AccelListener"/>
    <plugin name="Compass" value="org.apache.cordova.CompassListener"/>
    <plugin name="Media" value="org.apache.cordova.AudioHandler"/>
    <plugin name="Camera" value="org.apache.cordova.CameraLauncher"/>
    <plugin name="Contacts" value="org.apache.cordova.ContactManager"/>
    <plugin name="File" value="org.apache.cordova.FileUtils"/>
    <plugin name="NetworkStatus" value="org.apache.cordova.NetworkManager"/>
    <plugin name="Notification" value="org.apache.cordova.Notification"/>
    <plugin name="Storage" value="org.apache.cordova.Storage"/>
    <plugin name="Temperature" value="org.apache.cordova.TempListener"/>
    <plugin name="FileTransfer" value="org.apache.cordova.FileTransfer"/>
    <plugin name="Capture" value="org.apache.cordova.Capture"/>
    <plugin name="Battery" value="org.apache.cordova.BatteryListener"/>
    <plugin name="SplashScreen" value="org.apache.cordova.SplashScreen"/>
    <plugin name="VideoPlayer" value="com.phonegap.plugins.video.VideoPlayer"/>
</plugins>
```

```
<plugin name="VideoPlayer" value="com.phonegap.plugins.video.VideoPlayer"/>
```

inside that file, we add one line inside the <plugins/> tag.

Playing Video and Audio

```
<script src='video.js'></script>
```

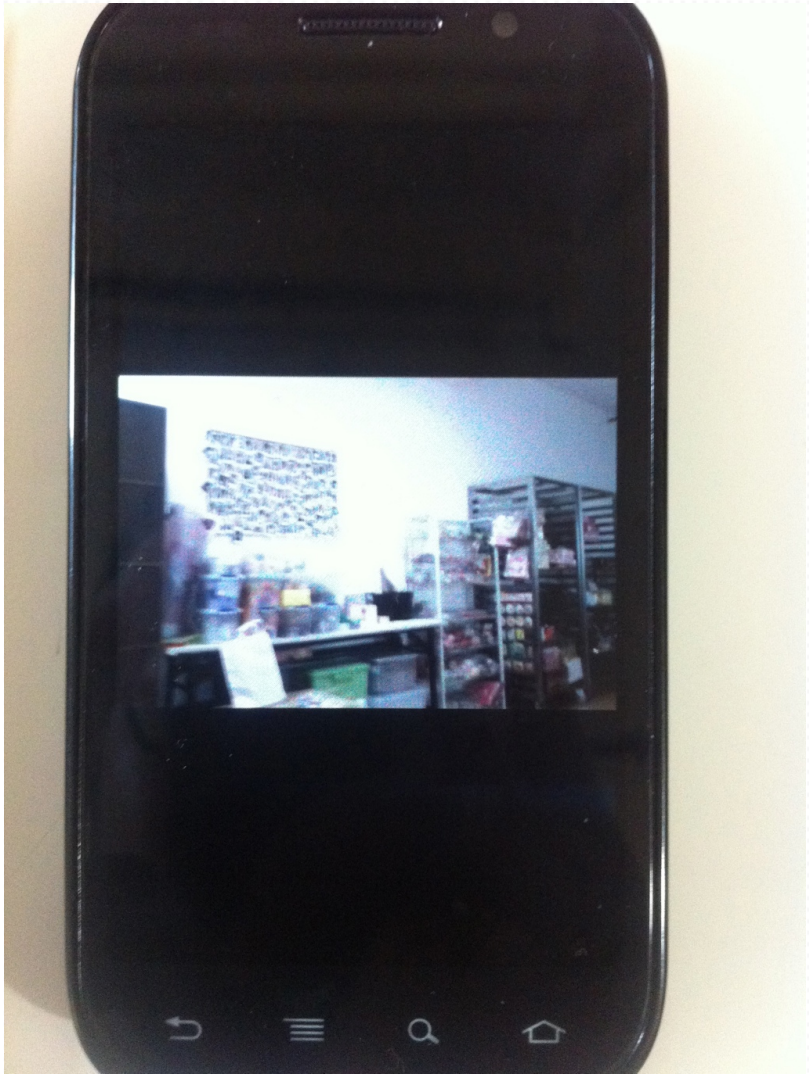
at last, we include the video.js file after include the cordova javascript file.

Playing Video and Audio

```
Diary.prototype.handleMediaPlayButton = function()
{
  $(".media-play").live ('click', function(){
    var src = $(this).data('src');
    window.plugins.videoPlayer.play(src);
  })
}
```

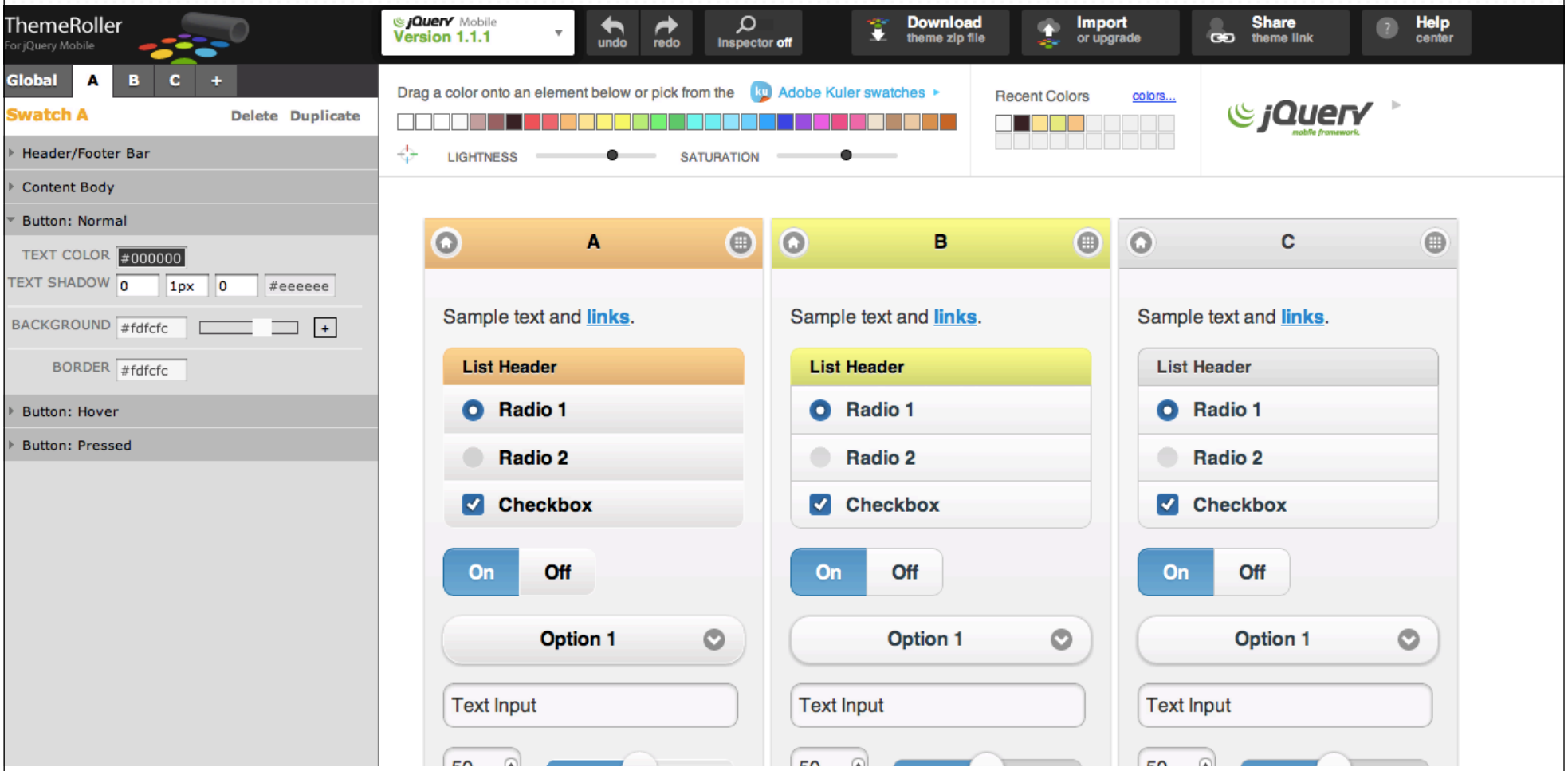
our plugins setup are done.
then we can use the video player plugin to play the media source.

Playing Video and Audio



playing the video and audio

Changing Theme



http://jquerymobile.com/themeroller/

Project

Design an app with jQuery Mobile and PhoneGap.

Be specific. Solve problem. Be Simple.

Due day: 28th Sep, 2012