

Apps on Your hands

Piotr Karny, Konrad Lipner
Samsung Electronics

TIZEN™
**DEVELOPER
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2014
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Agenda

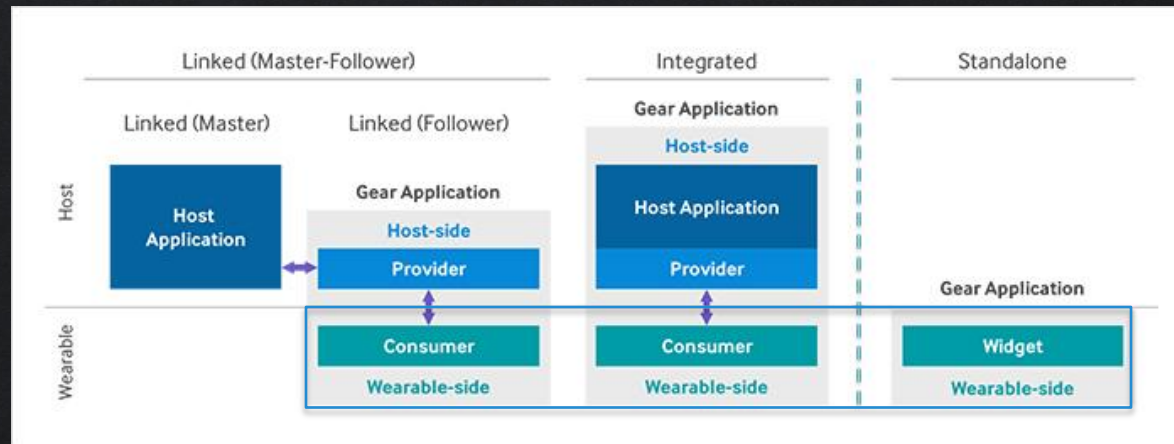
- Introduction
- Platform
- TAU framework
- Tools
- Q & A



Platform overview

Platform overview – application types

- **Linked (Master – Follower)**
- **Integrated**
- **Standalone**



Platform overview

- **Only web**
 - WebKit based engine
 - HTML 5
 - CSS
 - JavaScript (ECMAScript 5)
- **Keeping W3C standard**
When it's possible ;)

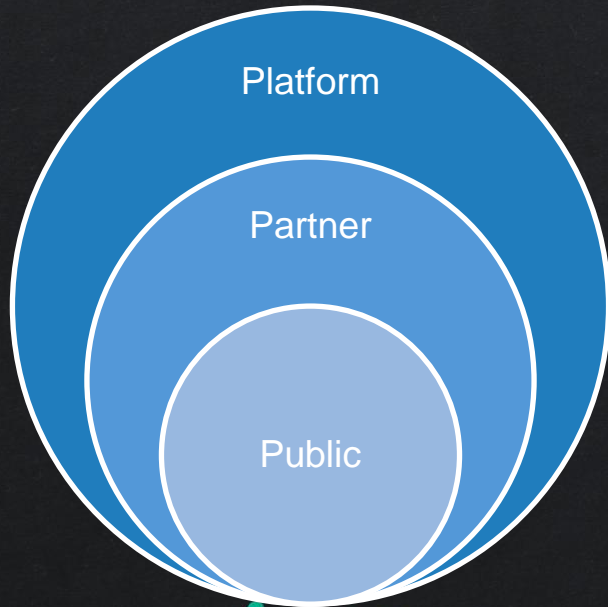


Platform overview - physical

- **Data sources**
 - 2.0 Megapixel camera (n/a in Neo version)
 - Accelerometer
 - Gyroscope
 - Heart Rate Sensor
- **Data output**
 - 320x320px Super AMOLED display
 - IR transmitter
 - Speaker and vibration

Platform overview - software

Access privileges



Platform

Package management, All other

Partner

Application Management, All of public

Public

Alarm, Part of Application Management, Content, Filesystem, IrLed, Motion, Part of Package management, Power, SAPService, SystemInfo, **Media**, **Storage**, **Camera API**

■ Device API

■ W3C/HTML5

■ Supplementary API

Platform overview – example



Camera use – <video> as preview

```
<video id="camera-preview"></video>
```

HTML

```
var video = document.getElementById('camera-preview');

function onSuccess(stream) {
    var streamUrl = window.webkitURL.createObjectURL(stream);
    video.src = streamUrl;
    video.play();
}

function onError(){ console.log("Error ..."); }

navigator.webkitGetUserMedia( {
    video: true,
    audio: false
}, onSuccess, onError );
```

JS

Platform overview – example



Camera use – taking photos 1/2

```
function onCameraControlCreated(control) { cameraControl = control; }
function onCameraControlError() { ... }
function registerStream(mediaStream) {
    navigator.tizCamera.createCameraControl(
        mediaStream,
        onCameraControlCreated,
        onCameraControlError);
}
function onSuccess(stream) {
    var streamUrl = window.webkitURL.createObjectURL(stream);
    video.src = streamUrl;
    video.play();
    registerStream(stream);
}
navigator.webkitGetUserMedia( {
    video: true,
    audio: false
}, onSuccess, onError );
```

JS

Platform overview – example



Camera use – taking photos 2/2

```
// Start focusing
if (cameraControl.autoFocus()) {
    setTimeout(afterFocus, AUTOFOCUS_DELAY);
} else {
    setTimeout(afterFocus, AUTOFOCUS_DELAY); // Take the picture anyway
}

function takePicture() {
    cameraControl.image.takePicture(onPictureDone, onPictureError);
}

function afterFocus() {
    var settings = { /* fileName, pictureFormat, pictureSize */ };
    cameraControl.image.applySettings( settings, takePicture, handleError );
}
```

JS


Platform overview – phone communication

- **SAP**
 - Uses Bluetooth Low Energy
 - Data services:
 - Alarm Service
 - Calendar Service
 - Context Service
 - File Transfer Service
 - Music Service
 - Notification Service

SDK Tools for wearable

What's inside of the SDK

- **Tizen IDE**
- **Device emulator**
 - Sensor event simulator
 - Shell access
- **Samples**
- **Documentation and guides**

The background is a dark, textured grey. On the left, a black, curved shape resembling a page corner is peeling away to reveal a stylized illustration of a suspension bridge and a city skyline over blue water. The water contains small, colorful circles. The right side of the background is scattered with various sizes of blue, green, and purple confetti-like shapes. In the lower center, there are two overlapping circles: a larger, semi-transparent dark grey one and a smaller, solid light blue one.

Tizen Advanced UI Framework

TAU: the origin

- **Why?**
 - Application launched slowly
 - Platform profiles running different UI frameworks
 - TAU for wearable
 - Web UI Framework for mobile
- **Why TAU?**
 - Starting from smallest device and building up to bigger and more powerful

TAU: satisfying needs

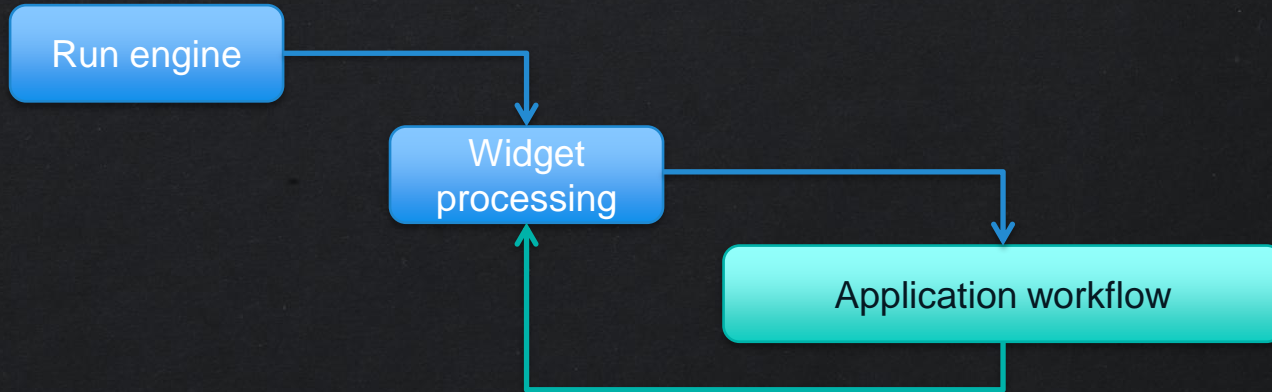
- **Application launched slowly**
 - Two phases of application launch
 - Removing DOM intensive operations (+ general optimization)
- **Many platform profiles running different UI frameworks**
 - One **ultrafast** core ;)
 - Widget designed for different platforms sharing same API
 - Modular building and moving deprecated API into compatibility layer

TAU: evolution(1/2)

- **Optimization**
 - Code optimization using Vanilla JS
 - Using full WebKit potential
 - Launch time optimization
- **Structure**
 - Widget construction separated into phases
 - One core
 - Profile specific code as separate modules
- **Backward compatibility**
 - Compatibility layer for supporting deprecated API

TAU: evolution(2/2)

Framework workflow





Application building

TAU build: how does it look like(1/7)?

SDK

Package

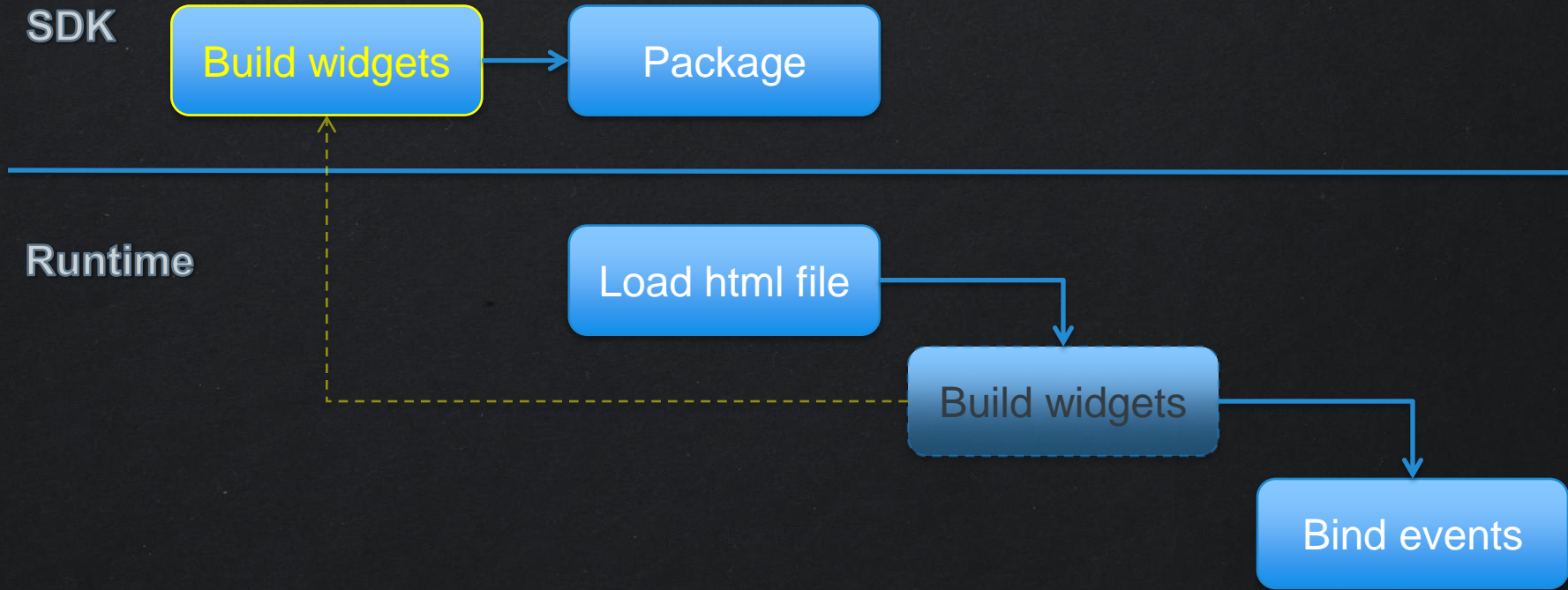
Runtime

Load html file

Build widgets

Bind events

TAU build: how does it look like(2/7)?



TAU build: how does it look like(3/7)?

```
<body>
  <div class="ui-page" id="main">
    <header class="ui-header">
      <h2 class="ui-title">Wearable UI</h2>
    </header>
    <div class="ui-content">
      <ul class="ui-listview">
        <li><a href="#1" class="ui-btn">Button 1</a></li>
        <li><a href="#2" class="ui-btn">Button 2</a></li>
        <li><a href="#3" class="ui-btn">Button 3</a></li>
      </ul>
    </div>
  </div>
  <!-- ... -->
</body>
```

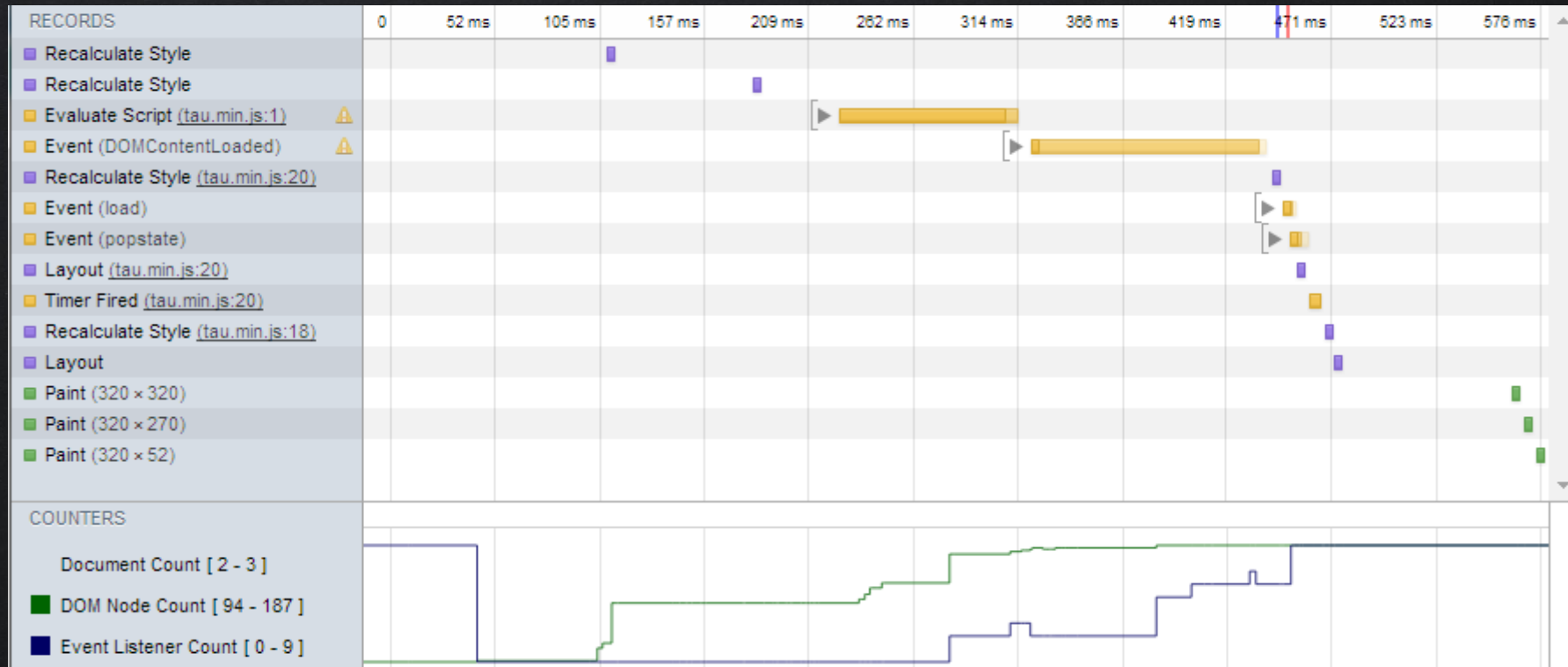
TAU build: how does it look like(4/7)?

```
<body data-tau-built="pagecontainer" data-tau-name="pagecontainer" id="ns-0-1401104644454"
class=""> <div class="ui-page ui-page-active" id="main" data-title="Wearable UI" data-tau-
built="page" data-tau-name="page"> <header class="ui-header"> <h2 class="ui-title">Wearable
UI</h2> </header> <div class="ui-content"> <ul class="ui-listview" data-tau-built="Listview"
data-tau-name="Listview" id="ns-2-1401104644454"> <li><a href="#1" class="ui-btn" data-tau-
built="Button" data-tau-name="Button" id="ns-3-1401104644454">Button 1</a></li> <li><a href="#2"
class="ui-btn" data-tau-built="Button" data-tau-name="Button" id="ns-4-1401104644454">Button
2</a></li> <li><a href="#3" class="ui-btn" data-tau-built="Button" data-tau-name="Button"
id="ns-5-1401104644454">Button 3</a></li> </ul> </div> </div> <!-- ... --> </body>
```

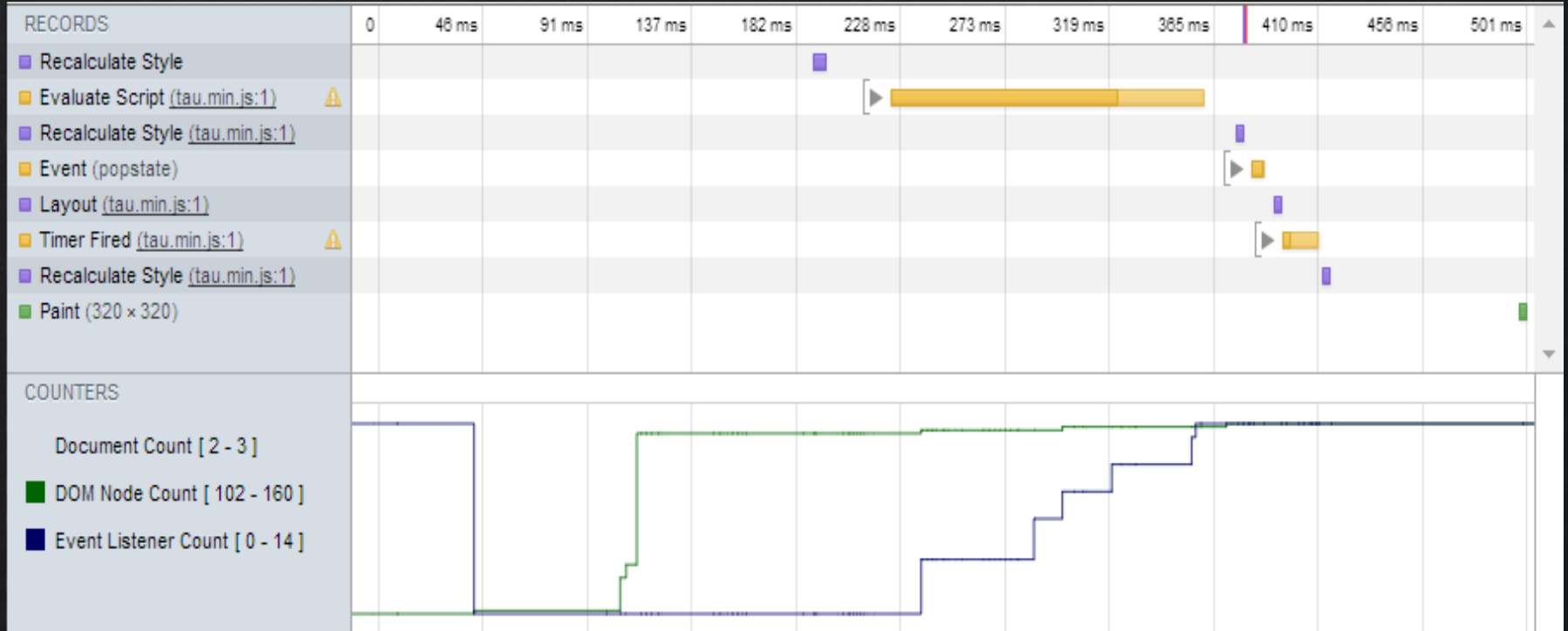
Widgets built:

- PageContainer
- Page
- ListView
- Button x 3

TAU build: how does it look like(5/7)?



TAU build: how does it look like(6/7)?



TAU build: how does it look like(7/7)?

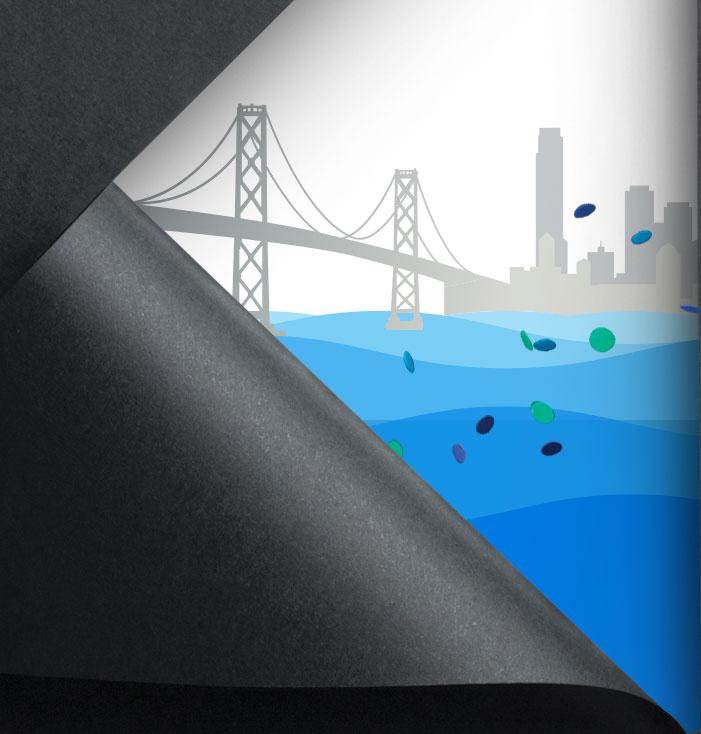
```
<div class="ui-popup" data-header="Header" data-header="footer">  
</div>
```



```
<div class="ui-popup" data-header="Header" data-header="footer" data-tau-built="popup" data-tau-  
name="popup" id="ns-2-1401104644454">  
  <div class="ui-popup-header">Header</div>  
  <div class="ui-popup-content"></div>  
  <div class="ui-popup-footer">footer</div>  
</div>
```

TAU Guide

- **Separate your application logic**
 - Do as much as possible during **build phase** and then run your code through application pre-builder
- **Use or extend existing widgets**
 - Prepare your code based on available widgets
 - Extend existing widgets to make your application logic simpler
- **Think further**
 - Using TAU API will allow you to easily move towards bigger screens



Questions?





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