Face to Face voorjaar 2016

Arjen van Vliet

Solution Consultant

June 7th 2016

UNIFACE

Advanced Development Technology

Uniface 9.7.02

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Advanced Development Technology

Agenda

- Uniface 9.7.01, a Recap
- Web or Hybrid or Native, a Strategy
- Develop for mobile Devices, the Technology
- Build a Mobile App, a Service
- Design
- Demo
- Recap, steps to take

9.7.01 Recap

What did 9.7.01 brings us?

UNIFACE

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Uniface 9.7.01 features

- New IDF start page
- Modernization and GUI
  - New properties to ‘bling’ your C/S application Windows 10 style
  - See GUI Modernization Lecture on YouTube
- Standard deployment is now standard
  - See Deployment Lecture on Youtube
- Web & Mobile
  - HTML 5 controls instead of DoJo
  - Developing Mobile Apps for Android and iOS
  - Uniface's Mobile App Layout framework
  - Previewer app

Uniface 9.7.01 features continued

- Automated testing: MSAA API
- Database and Currency
  - PostgreSQL, SAP HANA, Apache Tomcat 8
- Other changes:
  - ‘Uniface’ reg keys instead of ‘Compuware’ reg keys.
  - Alternative GOLD key: Ctrl-Shift-F1

Strategy

Mobile Apps are Hybrid

UNIFACE
User Events

Uniface Mobile Strategy

Hybrid Apps – based on HTML/JavaScript

- Fits well with Uniface
  - Productivity
  - Technology independence
- Accepted in the market place
- Covers most mobile requirements
- Native vs Hybrid is an industry debate
  - Challenge on productivity to deliver and maintain.
  - Challenge on requirements and capability

95% of the functionality for 50% of the ***delivery*** cost.
Jeffery Hammond, Forrester Analyst.

Uniface Mobile Strategy

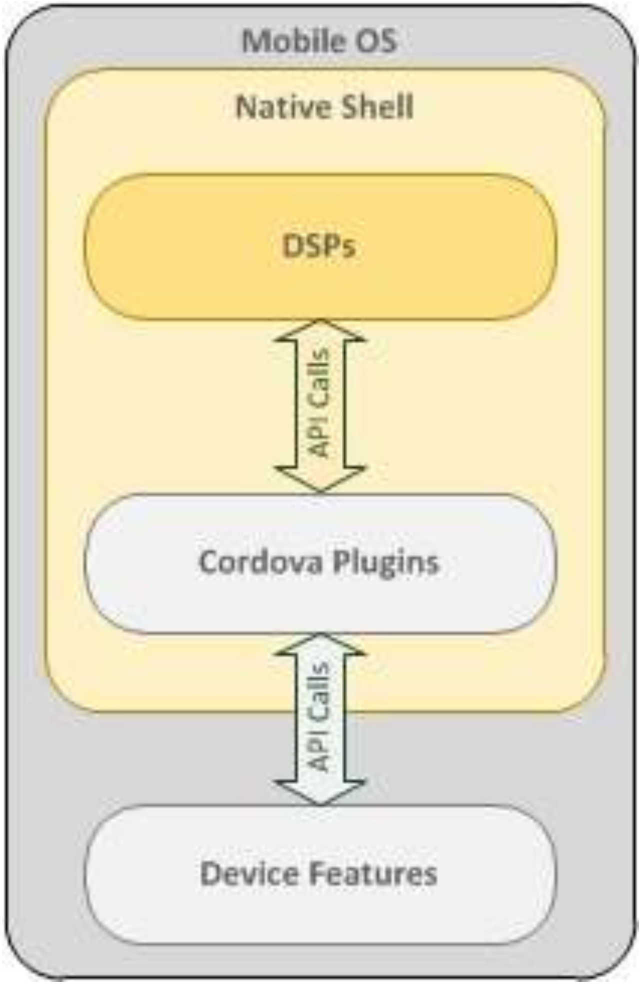
Why Hybrid Apps

- Same business logic
- Multiple client types
- Close connection to the Web
- Responsive

The Uniface approach

- Database connection
- Business Logic in services

A Uniface Mobile App is a Hybrid App



- Native shell that wraps a web-based user-interface provided by DSP components.
- App can access device functions like geolocation and camera.
- This architecture is commonly known as a *hybrid app*.

Uniface Mobile Roadmap

Continuing our 3-phase delivery approach

- Phase 1 - Responsive Web GUI
  - Delivered Uniface 9.6/9.7
  - Enables browser access from any device
- Phase 2 – Installable (Hybrid) Mobile Apps
  - Delivered in Uniface 9.7.02
  - Enables the installation in a mobile device
  - Enables distribution via app store
- Phase 3 – offline storage
  - Delivery TBD
  - Potentially a phased delivery
  - Enable offline execution of apps - FaceBook
  - Enable offline storage and synchronization of application data

Uniface 9.7.02 Installable (Hybrid) Mobile Apps

Our Solution

- Uniface generates the required output and uploads it to a 3rd party build service (Buildozer)
- Apps are uploaded to the app store(s) for distribution

Customers require

- Uniface 9.7.02
- An account with Buildozer
  - To build an installable app
- Developer accounts with Apple and Google
  - Certificates to build the apps
  - Approval to distribute via Google Play / Apple App Store

Development

Mobile Apps are Based on DSPs

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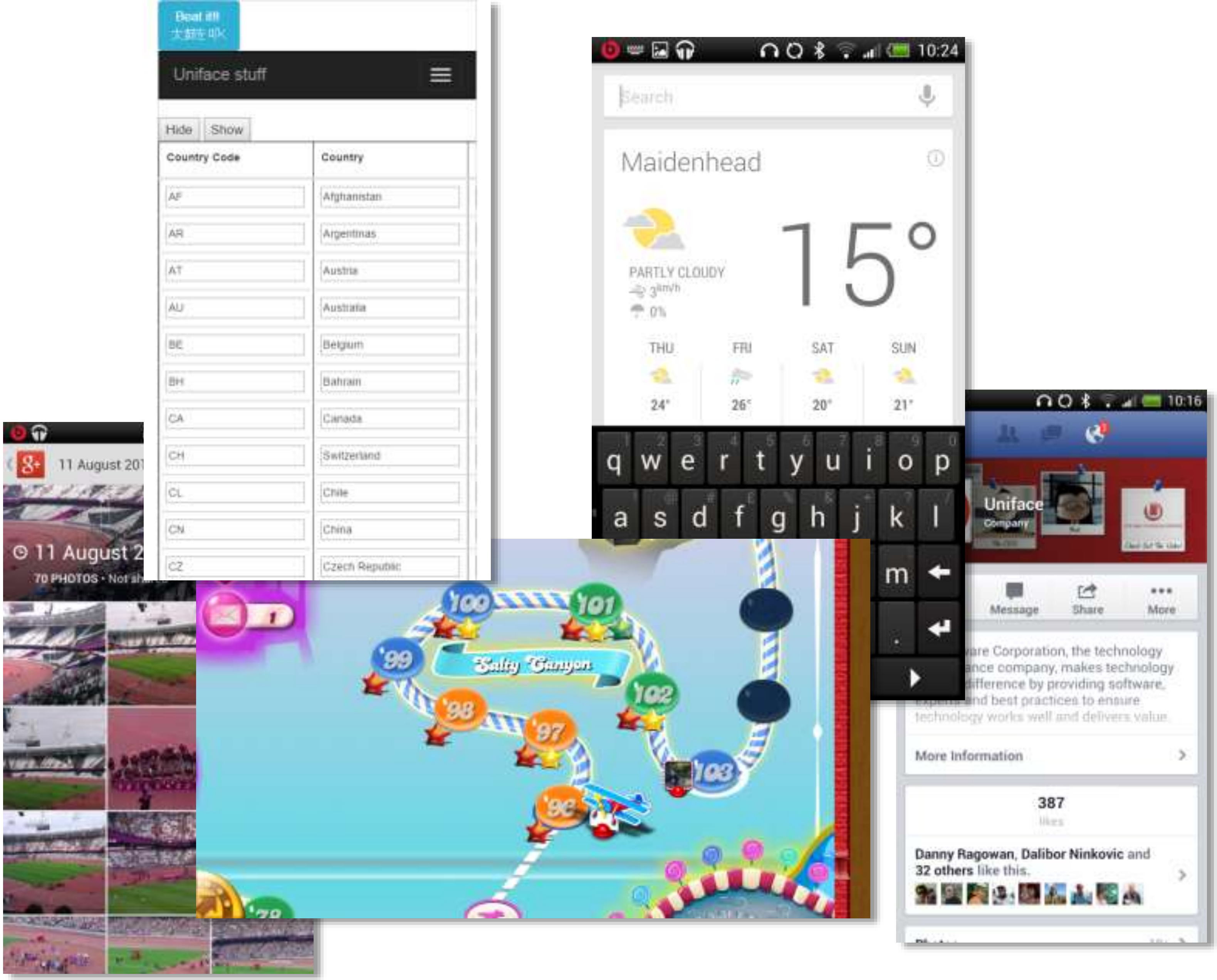
User Events



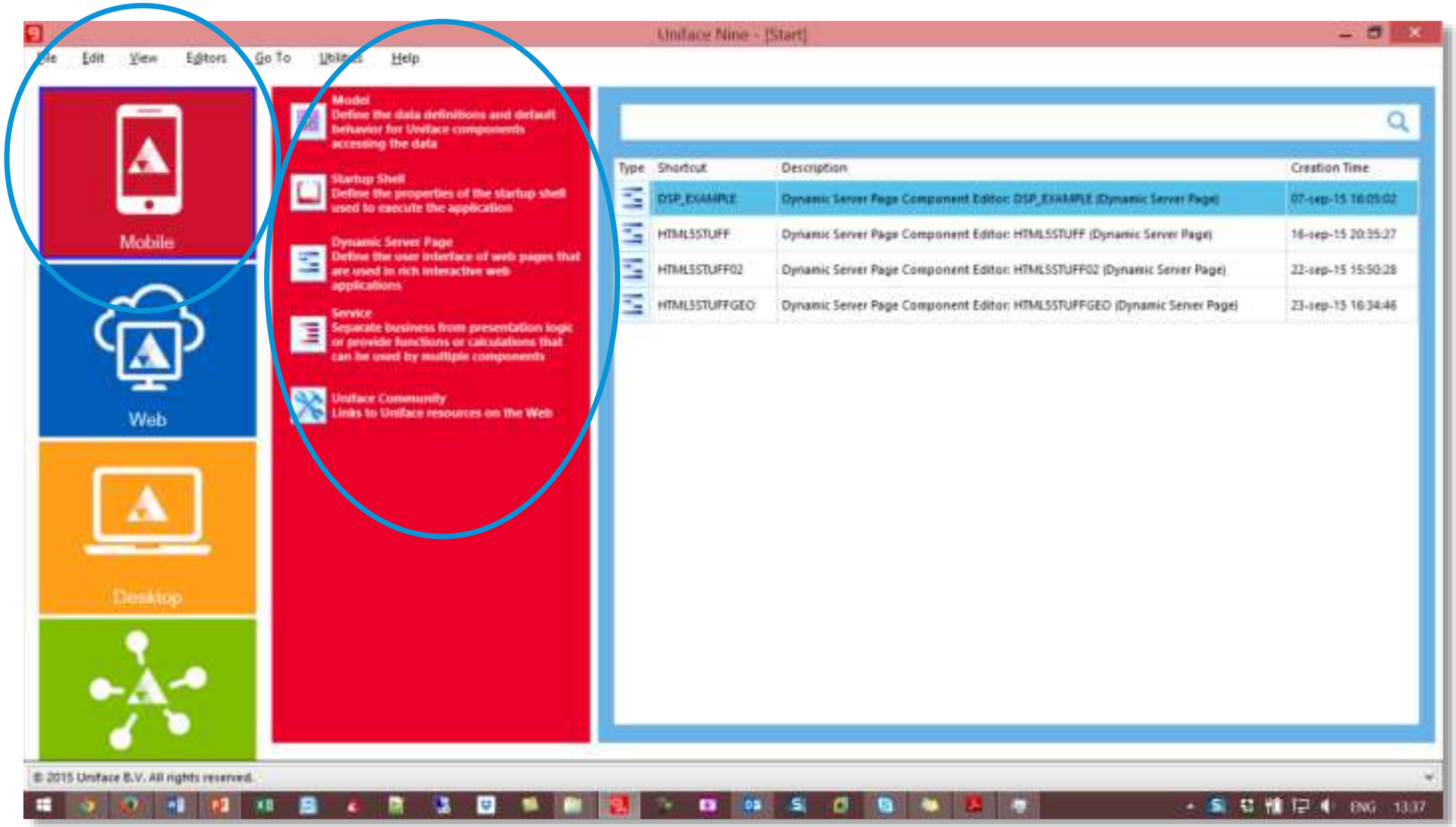
Country Code	Country
AF	Afghanistan
AR	Argentinas
AT	Austria
AU	Australia
BE	Belgium
BH	Bahrain
CA	Canada
CH	Switzerland
CL	Chile
CN	China
CZ	Czech Republic

...are Corporation, the technology ...nce company, makes technology ...difference by providing software, experts and best practices to ensure technology works well and delivers value.

More Information

387
likes

Danny Ragowan, Dalibor Ninkovic and 32 others like this.



Model
Define the data definitions and default behavior for Uniface components accessing the data

Startup Shell
Define the properties of the startup shell used to execute the application

Dynamic Server Page
Define the user interface of web pages that are used in rich interactive web applications

Service
Separate business from presentation logic or provide functions or calculations that can be used by multiple components

Uniface Community
Links to Uniface resources on the Web

Type	Shortcut	Description	Creation Time
	DSP_EXAMPLE	Dynamic Server Page Component Editor: DSP_EXAMPLE (Dynamic Server Page)	07-sep-15 16:05:02
	HTML5STUFF	Dynamic Server Page Component Editor: HTML5STUFF (Dynamic Server Page)	16-sep-15 20:35:27
	HTML5STUFF02	Dynamic Server Page Component Editor: HTML5STUFF02 (Dynamic Server Page)	22-sep-15 15:50:28
	HTML5STUFFGEO	Dynamic Server Page Component Editor: HTML5STUFFGEO (Dynamic Server Page)	23-sep-15 16:34:46

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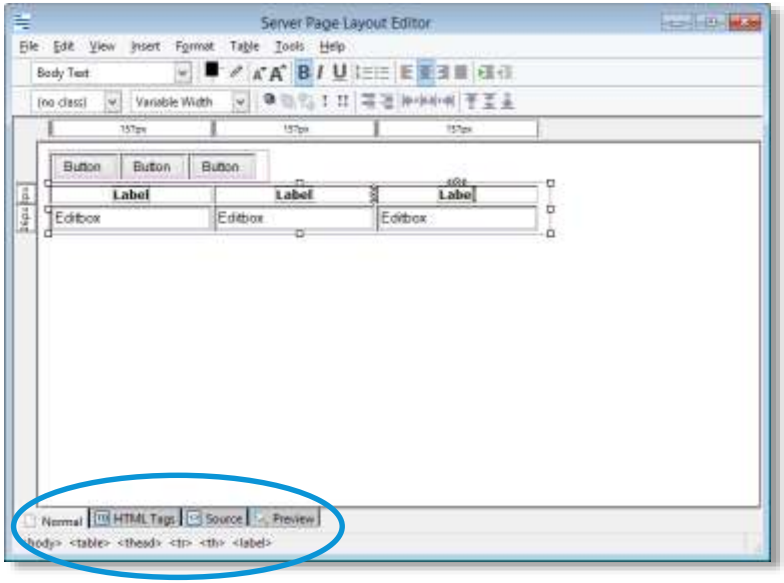
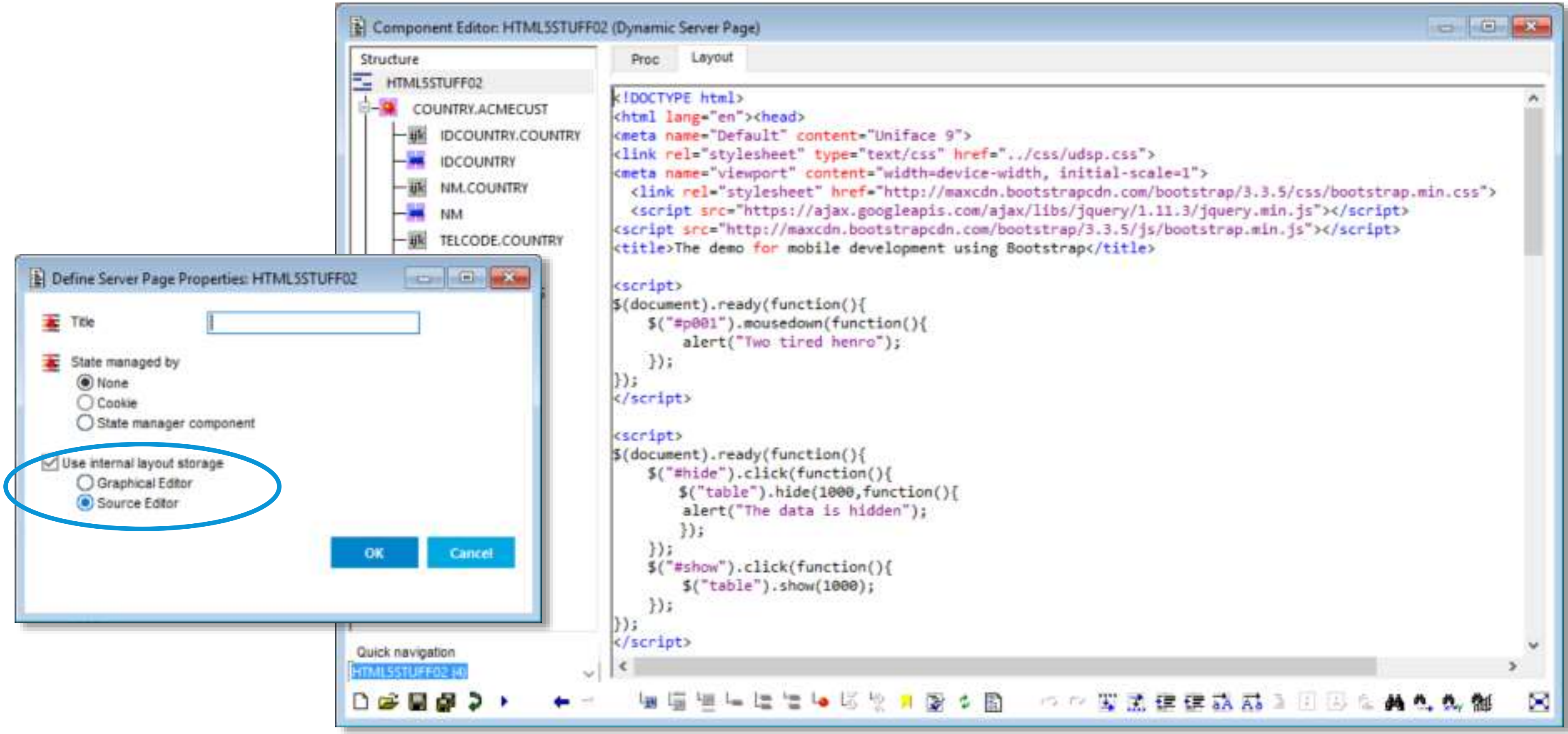
Layout Editor – Views



Source Editor



```
<!DOCTYPE html>
<html lang="en"><head>
<meta name="Default" content="Uniface 9">
<link rel="stylesheet" type="text/css" href="../css/udsp.css">
<meta name="viewport" content="width=device-width, initial-scale=1">
  <link rel="stylesheet" href="http://maxcdn.bootstrapcdn.com/bootstrap/3.3.5/css/bootstrap.min.css">
  <script src="https://ajax.googleapis.com/ajax/libs/jquery/1.11.3/jquery.min.js"></script>
<script src="http://maxcdn.bootstrapcdn.com/bootstrap/3.3.5/js/bootstrap.min.js"></script>
<title>The demo for mobile development using Bootstrap</title>

<script>
$(document).ready(function(){
    $("#p001").mousedown(function(){
        alert("Two tired henro");
    });
});
</script>

<script>
$(document).ready(function(){
    $("#hide").click(function(){
        $("table").hide(1000,function(){
        alert("The data is hidden");
        });
    });
    $("#show").click(function(){
        $("table").show(1000);
    });
});
</script>
```

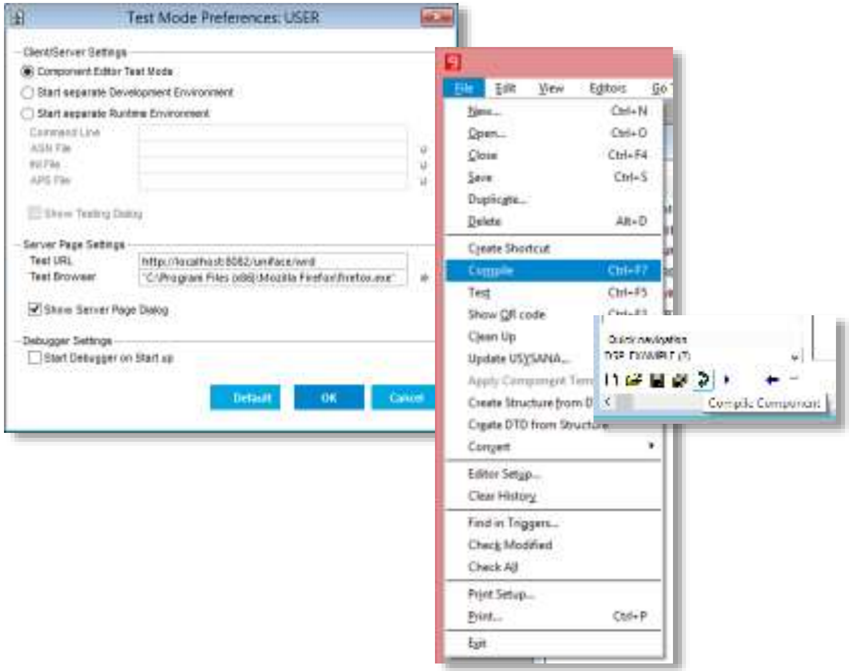
Title:

State managed by
● None
○ Cookie
○ State manager component

☑ Use internal layout storage
○ Graphical Editor
● Source Editor

UNIFACE User Events

Compiling and Testing



Test Mode Preferences: USER

Client/Server Settings

● Component Editor Test Mode

○ Start separate Development Environment

○ Start separate Runtime Environment

Command Line

ASN File

INI File

APS File

□ Show Testing Dialog

Server Page Settings

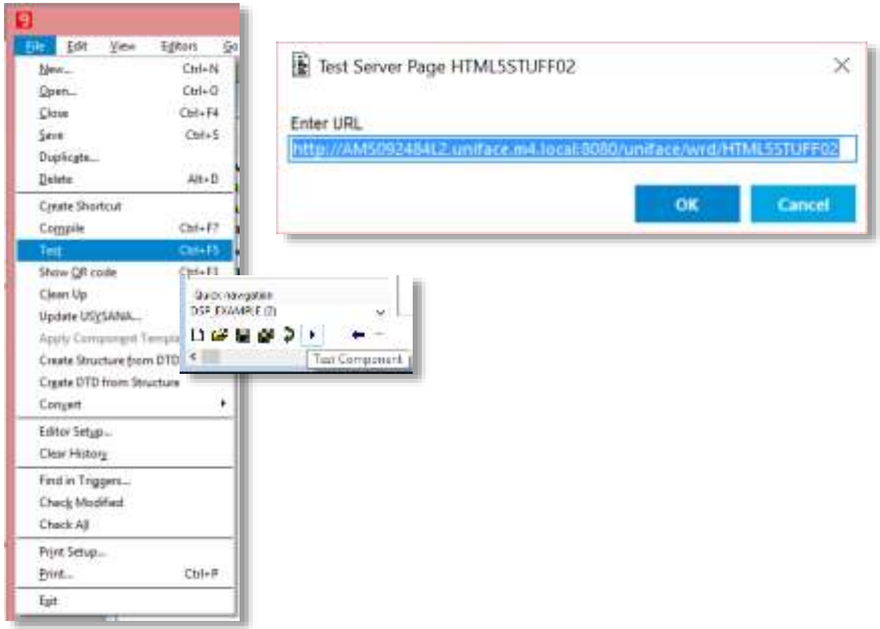
Test URL: http://localhost:8082/uniface/wrd

Test Browser: "C:\Program Files (x86)\Mozilla Firefox\firefox.exe"

☑ Show Server Page Dialog

Debugger Settings

□ Start Debugger on Start up



Test Server Page HTML5STUFF02

Enter URL: http://AMS092484L2.uniface.m4.local:8080/uniface/wrd/HTML5STUFF02

Configuration

....asn

mobilelicense

....ini

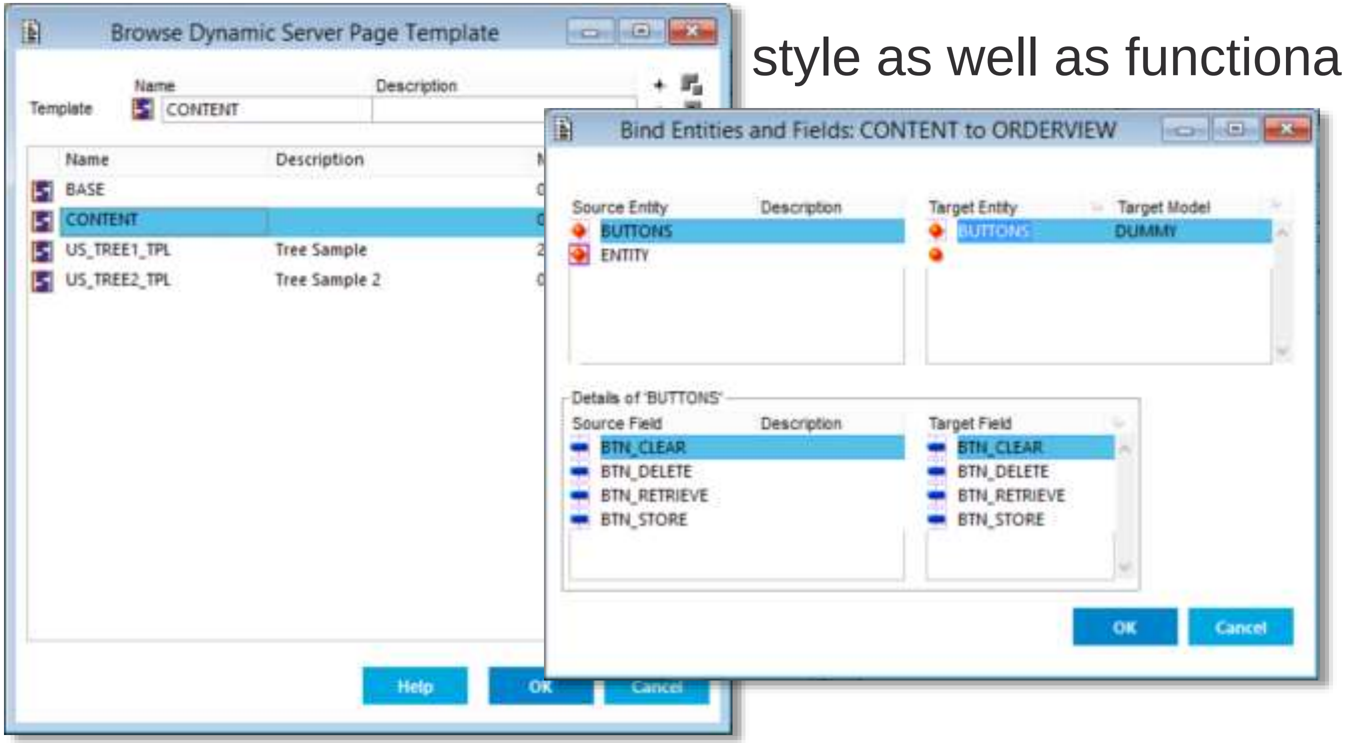
urouter

wrd

userver

Templates

Templates for DSPs can include style as well as functionality



Browse Dynamic Server Page Template

Template — Name: CONTENT — Description:

Name	Description	N
BASE		0
CONTENT		0
US_TREE1_TPL	Tree Sample	2
US_TREE2_TPL	Tree Sample 2	0

Bind Entities and Fields: CONTENT to ORDERVIEW

Source Entity	Description	Target Entity	Target Model
BUTTONS		BUTTONS	DUMMY
ENTITY			

Details of 'BUTTONS'

Source Field	Description	Target Field
BTN_CLEAR		BTN_CLEAR
BTN_DELETE		BTN_DELETE
BTN_RETRIEVE		BTN_RETRIEVE
BTN_STORE		BTN_STORE

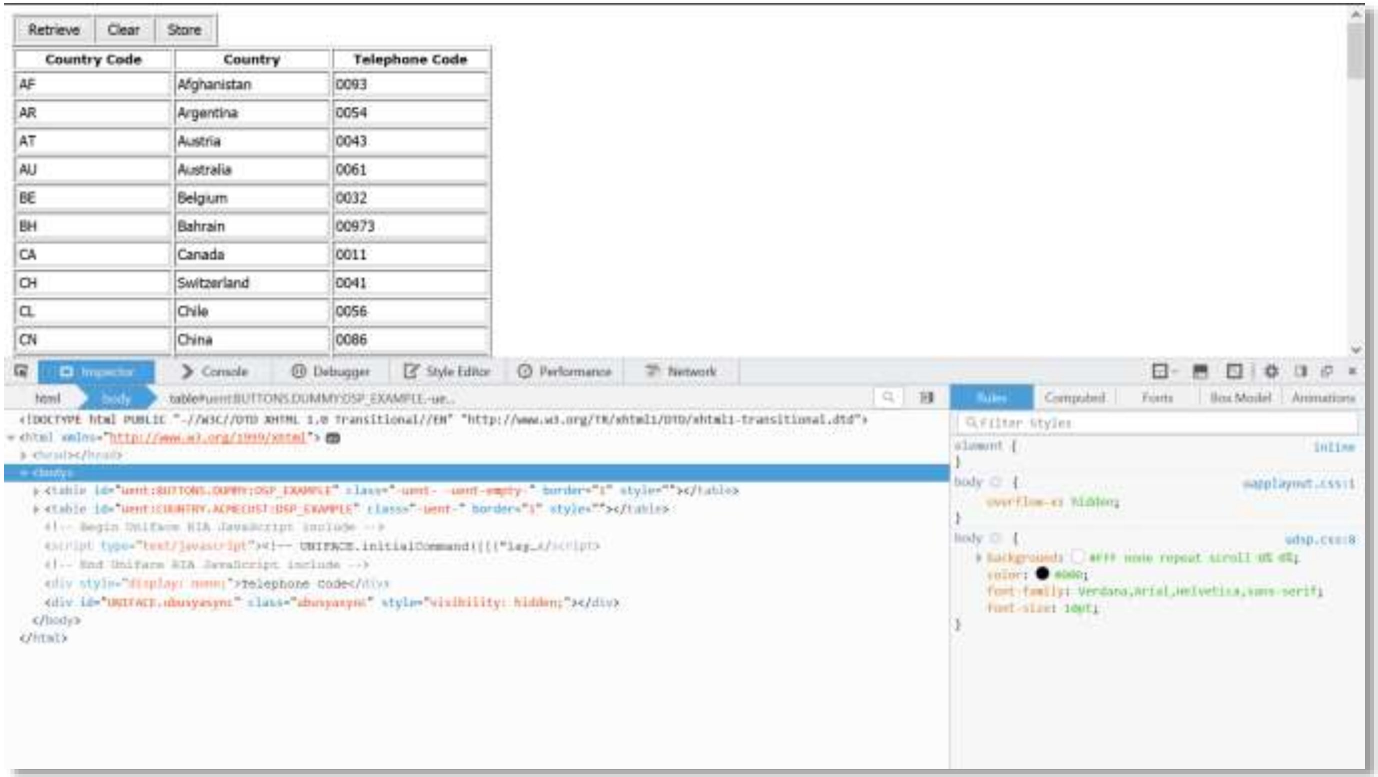
JavaScript API

The API enables the addressing and manipulation of Uniface objects, data, and components to:

- implement a trigger or operation in JavaScript
- call a trigger or operation from JavaScript
- inspect and change a value, property, field syntax or valrep from JavaScript
- add occurrences or mark them for deletion
- create and delete instances of DSP components
- implement a new widget

```
Uniface
uniface.Instance
uniface.Entity
uniface.Occurrence
uniface.Field
```

Browser Based Debuggers

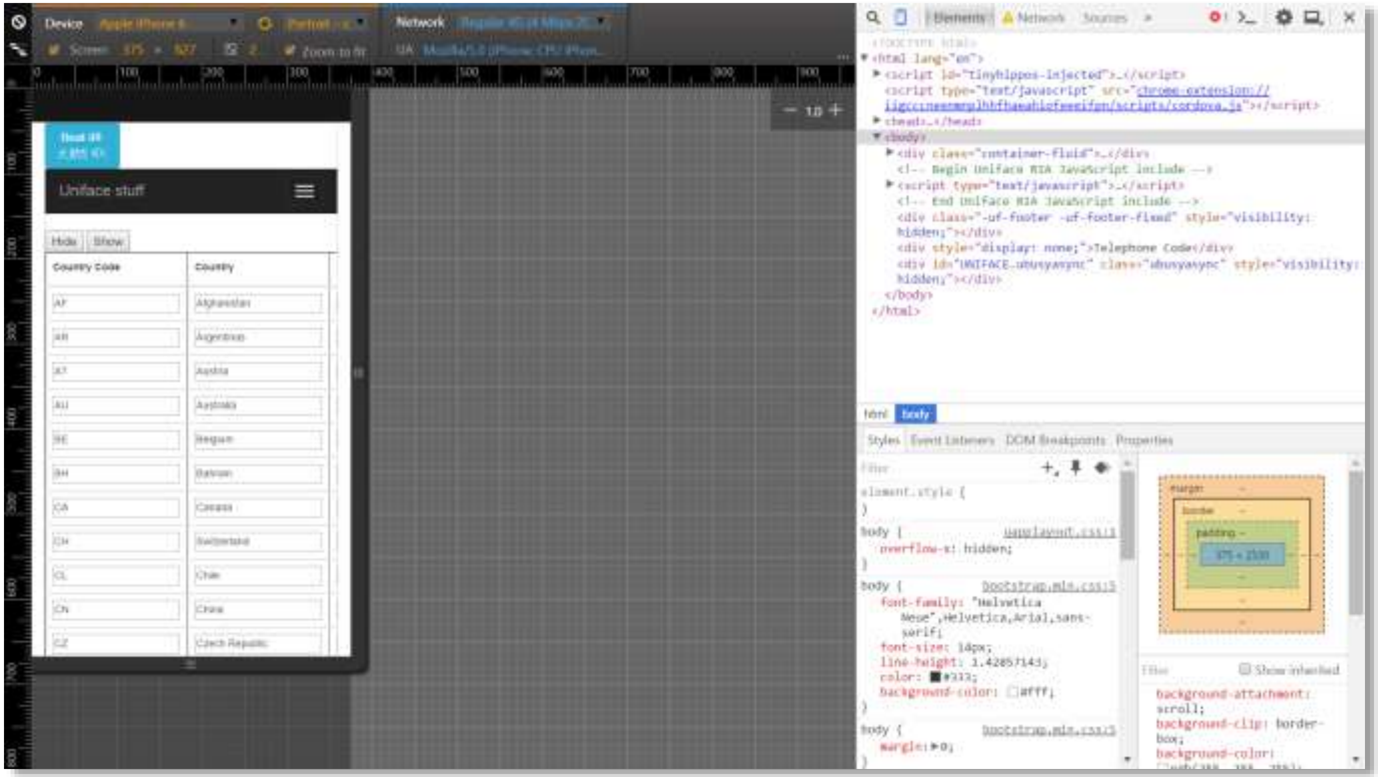


Country Code	Country	Telephone Code
AF	Afghanistan	0093
AR	Argentina	0054
AT	Austria	0043
AU	Australia	0061
BE	Belgium	0032
BH	Bahrain	00973
CA	Canada	0011
CH	Switzerland	0041
CL	Chile	0056
CN	China	0086

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
  <head></head>
  <body>
    <table id="uent:BUTTONS.DUMMY:DSP_EXAMPLE" class="-uent- -uent-empty-" border="1" style=""></table>
    <table id="uent:COUNTRY.ACMECUST:DSP_EXAMPLE" class="-uent-" border="1" style=""></table>
      <!-- Begin Uniface RIA JavaScript include -->
      <script type="text/javascript"><!-- UNIFACE.initialCommand([["lay…</script>
      <!-- End Uniface RIA JavaScript include -->
      <div style="display: none;">Telephone code</div>
      <div id="UNIFACE.ubusyasync" class="ubusyasync" style="visibility: hidden;"></div>
  </body>
</html>
```

```
element {                                         inline
}
body {                                     uapplayout.css:1
    overflow-x: hidden;
}
body {                                           udsp.css:8
  Background: #fff none repeat scroll 0% 0%;
    color: ● #000;
    font-family: Verdana,Arial,Helvetica,sans-serif;
    font-size: 10pt;
}
```

Emulations for Mobile applications



Device Apple iPhone 6 Portrait
☑ Screen 375 × 627 2 ☑ Zoom to fit
Network Regular 4G (4 Mbps 20...
UA Mozilla/5.0 (iPhone; CPU iPhon...

Country Code	Country
AF	Afghanistan
AR	Argentina
AT	Austria
AU	Australia
BE	Belgium
BH	Bahrain
CA	Canada
CH	Switzerland
CL	Chile
CN	China
CZ	Czech Republic

```
<!DOCTYPE html>
▼<html lang="en">
  ▶<script id="tinyhippos-injected">…</script>
   <script type="text/javascript" src="chrome-extension://
   iigccineenmmplhhfhaeahiofeeeifpn/scripts/cordova.js"></script>
  ▶<head>…</head>
  ▼<body>
    ▶<div class="container-fluid">…</div>
     <!-- Begin Uniface RIA JavaScript include -->
    ▶<script type="text/javascript">…</script>
     <!-- End Uniface RIA JavaScript include -->
     <div class="-uf-footer -uf-footer-fixed" style="visibility:
     hidden;"></div>
     <div style="display: none;">Telephone Code</div>
     <div id="UNIFACE_ubusyasync" class="ubusyasync" style="visibility:
     hidden;"></div>
   </body>
</html>
```

```
element.style {
}
body {                          uapplayout.css:1
  overflow-x: hidden;
}
body {                          bootstrap.min.css:5
  font-family: "Helvetica
     Neue",Helvetica,Arial,sans-
     serif;
  font-size: 14px;
  line-height: 1.42857143;
  color: ■#333;
  background-color: □#fff;
}
body {                          bootstrap.min.css:5
  margin:▶0;
}
```

```
background-attachment:
scroll;
background-clip: border-
box;
background-color:
□rgb(255, 255, 255);
```

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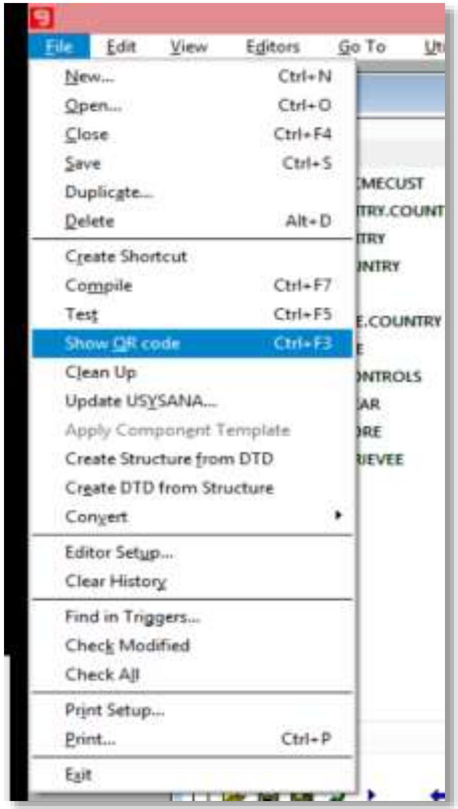
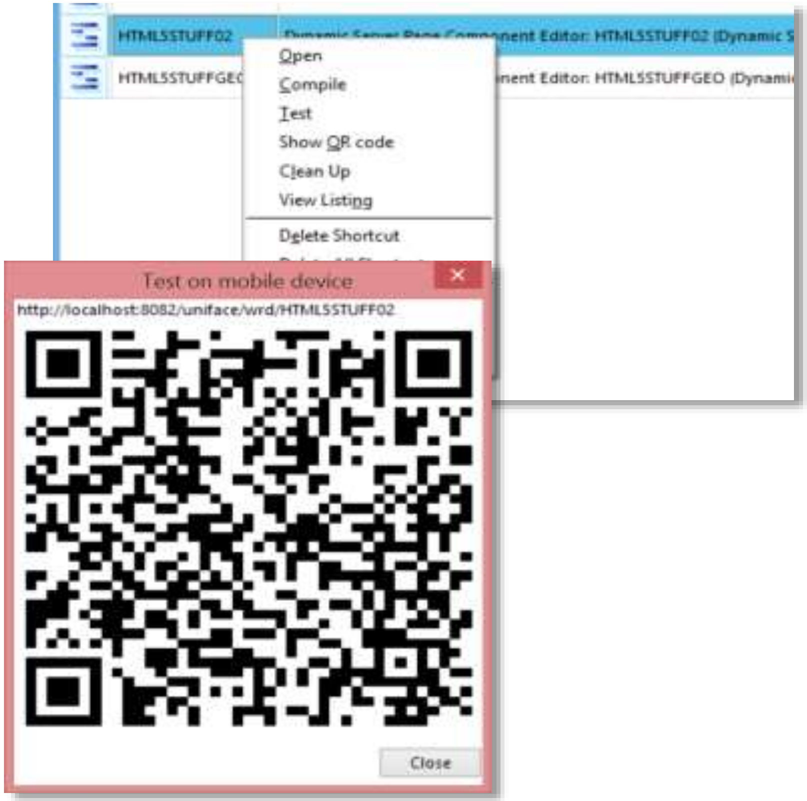
User Events

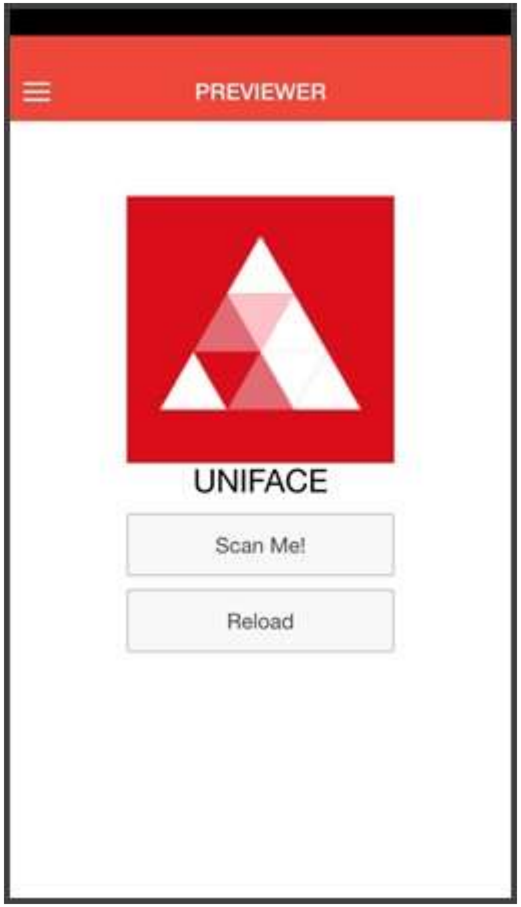
Test your mobile application in the device’s browser





http://localhost:8082/uniface/wrd/HTML5STUFF02

Test your mobile application in the Previewer app



Deployment

Deploy your Mobile App

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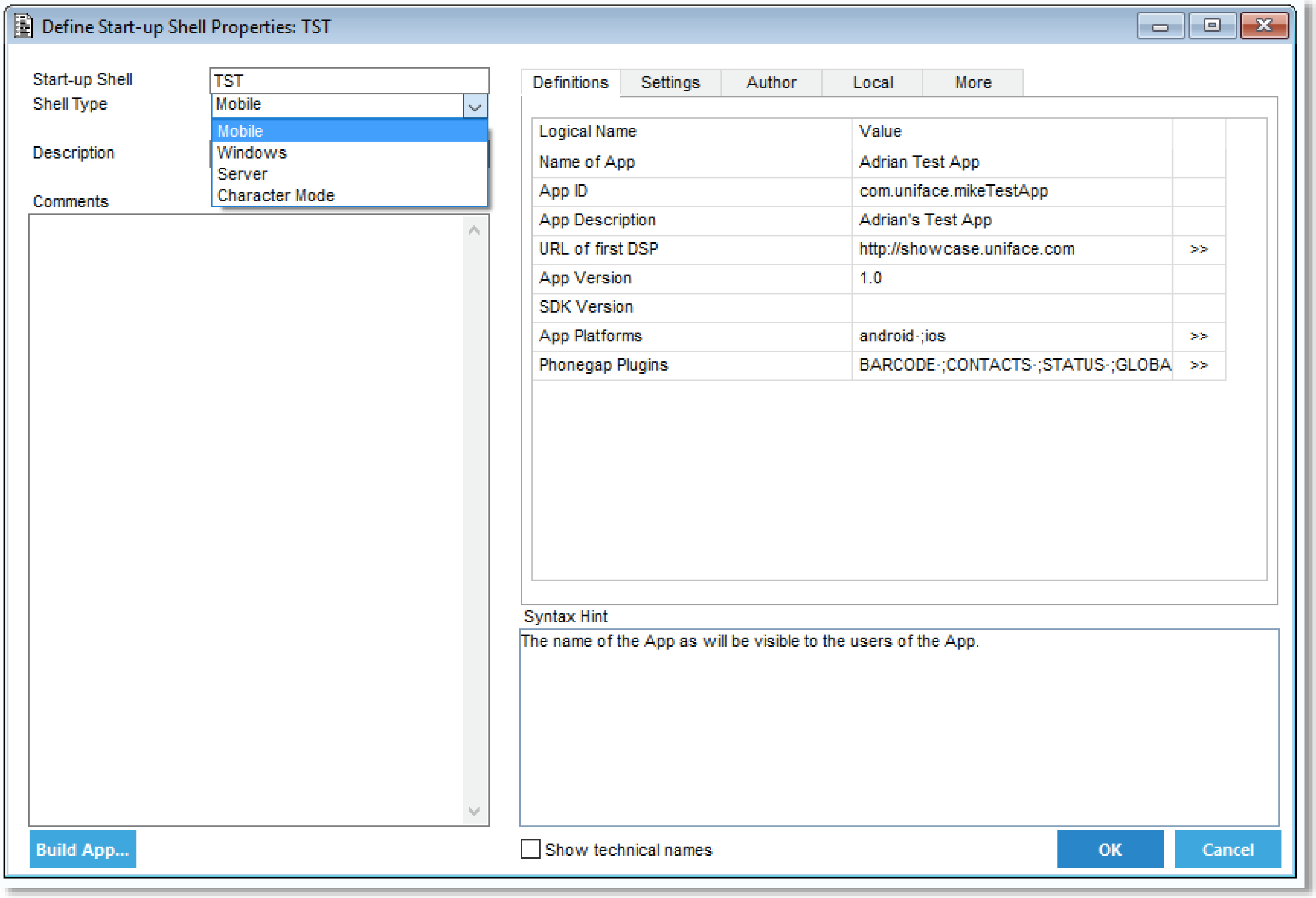
User Events

Generate a *mobile* application start-up shell



Define Start-up Shell Properties: TST

Start-up Shell: TST

Shell Type: Mobile

Description

Comments

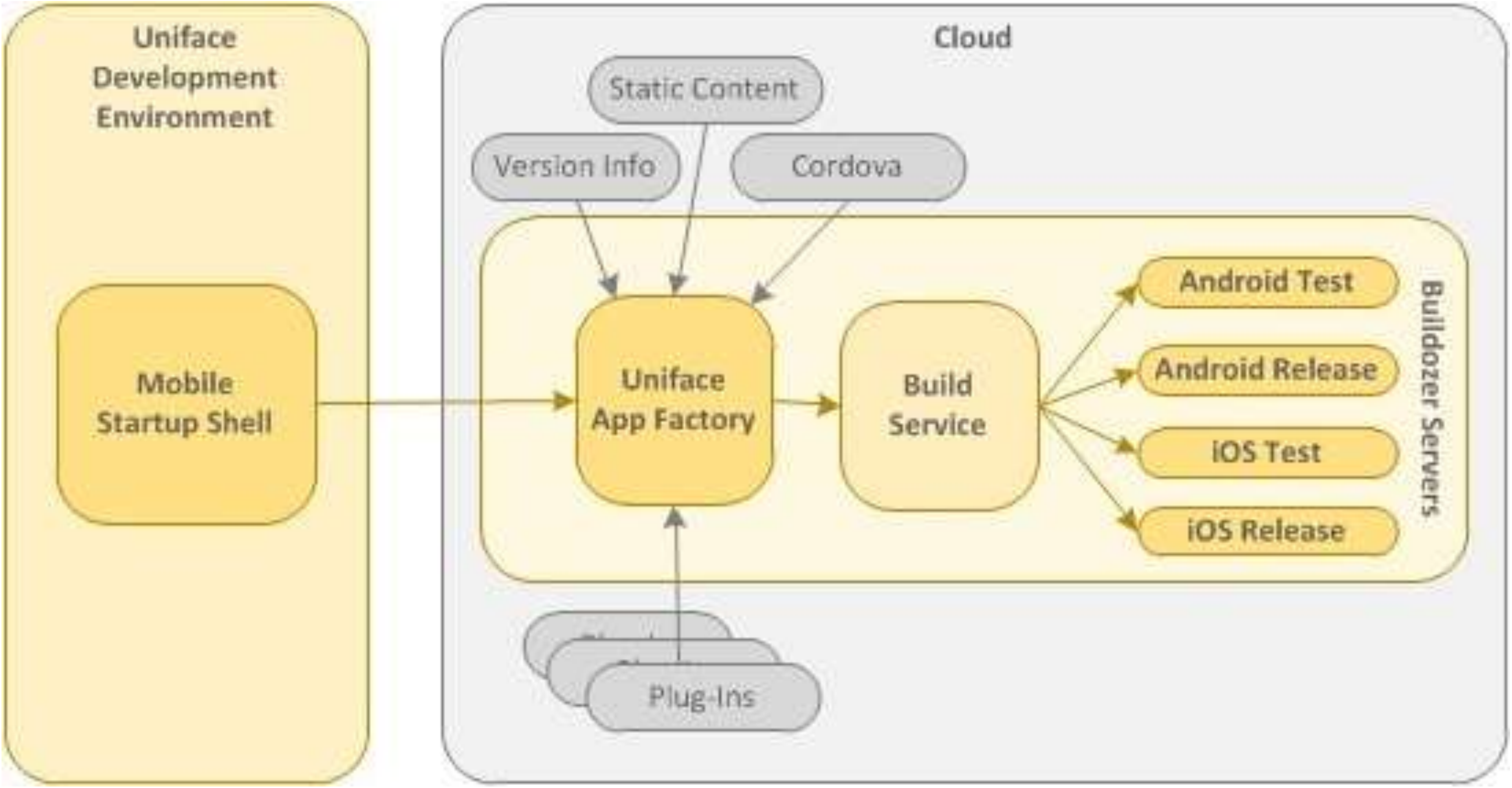
Logical Name	Value	
Name of App	Adrian Test App	
App ID	com.uniface.mikeTestApp	
App Description	Adrian's Test App	
URL of first DSP	http://showcase.uniface.com	>>
App Version	1.0	
SDK Version		
App Platforms	android·;ios	>>
Phonegap Plugins	BARCODE·;CONTACTS·;STATUS·;GLOBA	>>

Syntax Hint

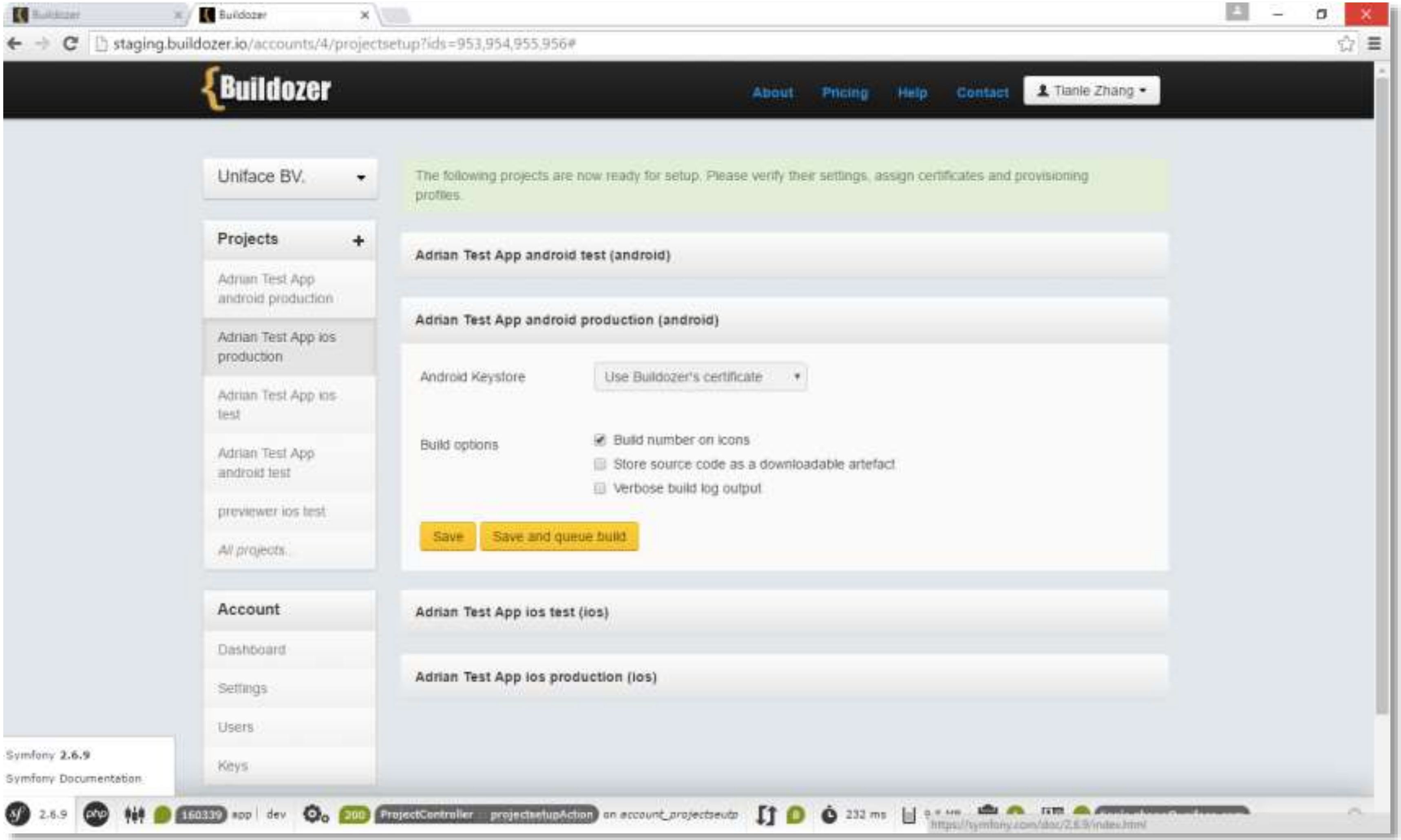
The name of the App as will be visible to the users of the App.

☐ Show technical names

Mobile App build process



Send the mobile shell to Buildozer to be *built*



The following projects are now ready for setup. Please verify their settings, assign certificates and provisioning profiles.

Adrian Test App android test (android)

Adrian Test App android production (android)

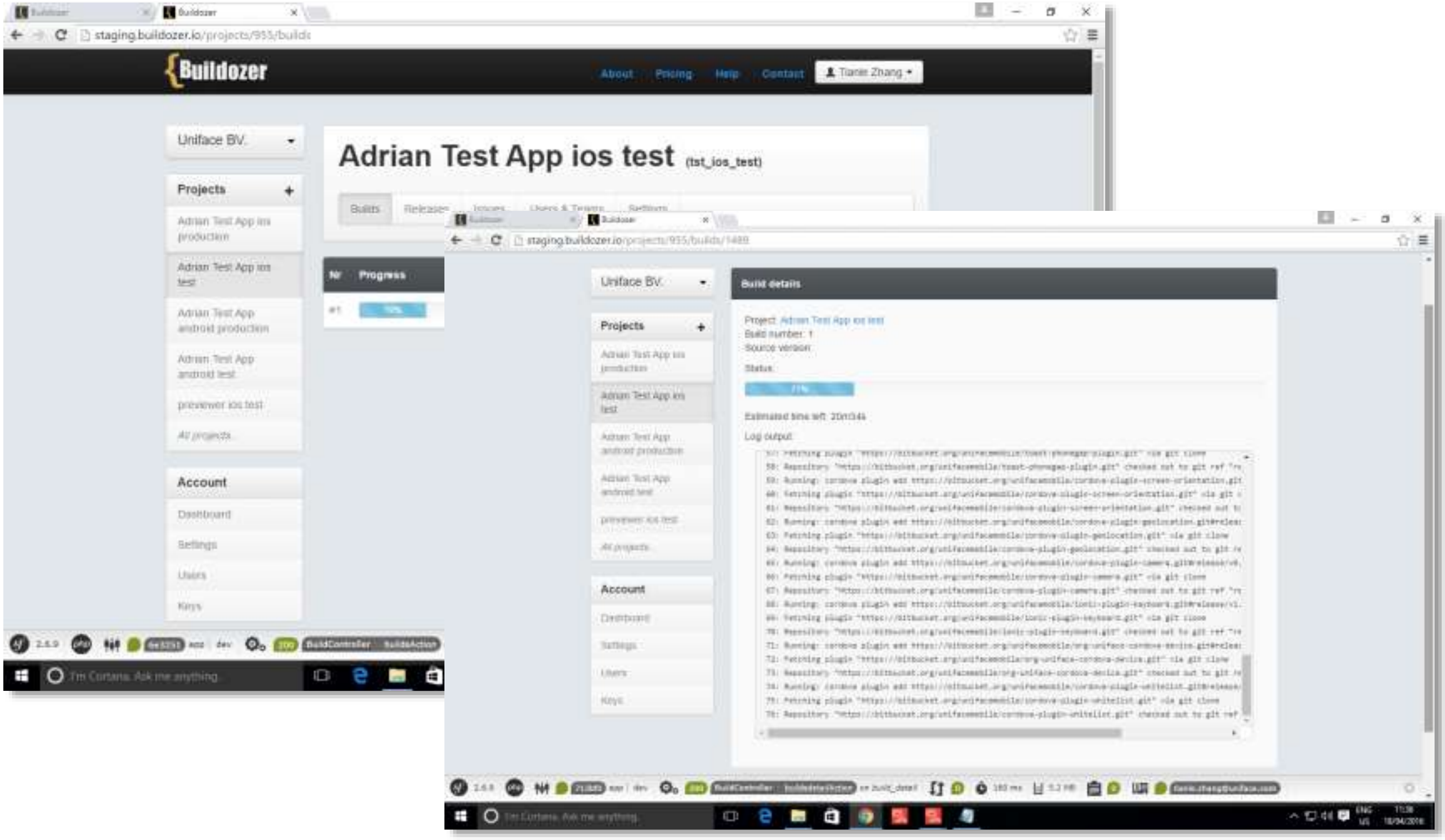
Android Keystore: Use Buildozer's certificate

Build options:
- ☑ Build number on icons
- □ Store source code as a downloadable artefact
- □ Verbose build log output

Adrian Test App ios test (ios)

Adrian Test App ios production (ios)

Monitor the build status (if needed)



staging.buildozer.io/projects/955/builds

Adrian Test App ios test (tst_ios_test)

staging.buildozer.io/projects/955/builds/1489

Build details

Project: Adrian Test App ios test
Build number: 1
Source version:

Status:

Estimated time left: 20m34s

Log output:

```
57: Fetching plugin "https://bitbucket.org/unifacemobile/toast-phonegap-plugin.git" via git clone
58: Repository "https://bitbucket.org/unifacemobile/toast-phonegap-plugin.git" checked out to git ref "re
59: Running: cordova plugin add https://bitbucket.org/unifacemobile/cordova-plugin-screen-orientation.git
60: Fetching plugin "https://bitbucket.org/unifacemobile/cordova-plugin-screen-orientation.git" via git c
61: Repository "https://bitbucket.org/unifacemobile/cordova-plugin-screen-orientation.git" checked out to
62: Running: cordova plugin add https://bitbucket.org/unifacemobile/cordova-plugin-geolocation.git#releas
63: Fetching plugin "https://bitbucket.org/unifacemobile/cordova-plugin-geolocation.git" via git clone
64: Repository "https://bitbucket.org/unifacemobile/cordova-plugin-geolocation.git" checked out to git re
65: Running: cordova plugin add https://bitbucket.org/unifacemobile/cordova-plugin-camera.git#release/v0.
66: Fetching plugin "https://bitbucket.org/unifacemobile/cordova-plugin-camera.git" via git clone
67: Repository "https://bitbucket.org/unifacemobile/cordova-plugin-camera.git" checked out to git ref "re
68: Running: cordova plugin add https://bitbucket.org/unifacemobile/ionic-plugin-keyboard.git#release/v1.
69: Fetching plugin "https://bitbucket.org/unifacemobile/ionic-plugin-keyboard.git" via git clone
70: Repository "https://bitbucket.org/unifacemobile/ionic-plugin-keyboard.git" checked out to git ref "re
71: Running: cordova plugin add https://bitbucket.org/unifacemobile/org-uniface-cordova-device.git#releas
72: Fetching plugin "https://bitbucket.org/unifacemobile/org-uniface-cordova-device.git" via git clone
73: Repository "https://bitbucket.org/unifacemobile/org-uniface-cordova-device.git" checked out to git re
74: Running: cordova plugin add https://bitbucket.org/unifacemobile/cordova-plugin-whitelist.git#release
75: Fetching plugin "https://bitbucket.org/unifacemobile/cordova-plugin-whitelist.git" via git clone
76: Repository "https://bitbucket.org/unifacemobile/cordova-plugin-whitelist.git" checked out to git ref
```

BuildController :: builddetailsAction
on build_detail
180 ms
5.2 MB
I'm Cortana. Ask me anything.

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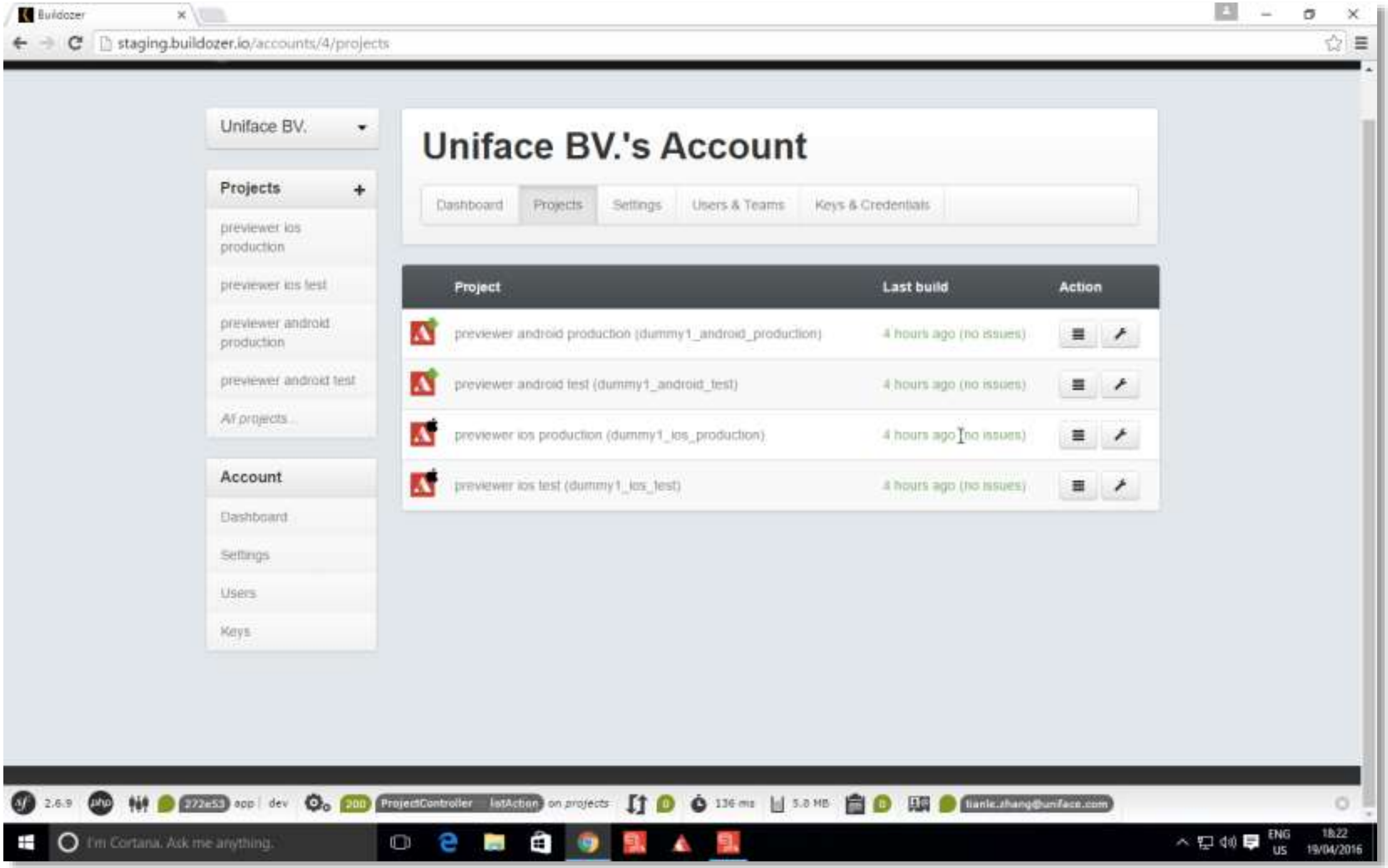
Build process gives 2 outputs per OS, test and production (to be sent to the app store)

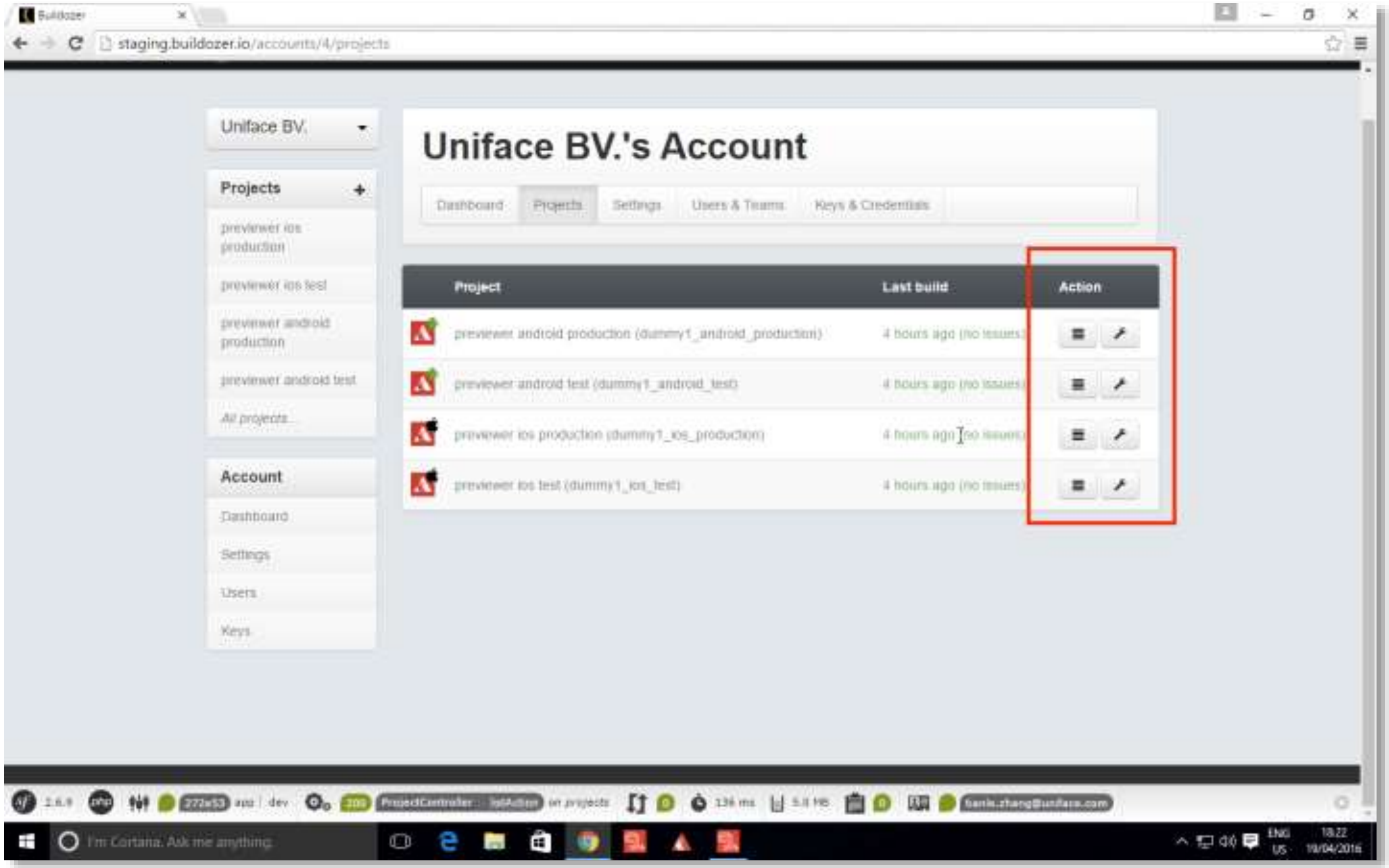


Uniface BV.'s Account

Dashboard | Projects | Settings | Users & Teams | Keys & Credentials

Project	Last build	Action
previewer android production (dummy1_android_production)	4 hours ago (no issues)	≡ ✎
previewer android test (dummy1_android_test)	4 hours ago (no issues)	≡ ✎
previewer ios production (dummy1_ios_production)	4 hours ago (no issues)	≡ ✎
previewer ios test (dummy1_ios_test)	4 hours ago (no issues)	≡ ✎

Download to test or send to the app store



Uniface BV.'s Account

Project	Last build	Action
previewer android production (dummy1_android_production)	4 hours ago (no issues)	≡ 🔧
previewer android test (dummy1_android_test)	4 hours ago (no issues)	≡ 🔧
previewer ios production (dummy1_ios_production)	4 hours ago (no issues)	≡ 🔧
previewer ios test (dummy1_ios_test)	4 hours ago (no issues)	≡ 🔧

Intention is that this will automatically be sent to the app store, currently the developer has to upload to Apple and/or Google

Final ‘admin steps’ for app publication

App stores require administration before an app is made available

- Pricing details
- Description
- Release notes to be displayed
- Etc

Apps have an approval process

- Relatively straightforward for a Hybrid app
- Release takes hours for Google and days for Apple
- Process is outlined on the Apple/Google websites.

Design

Intermezzo

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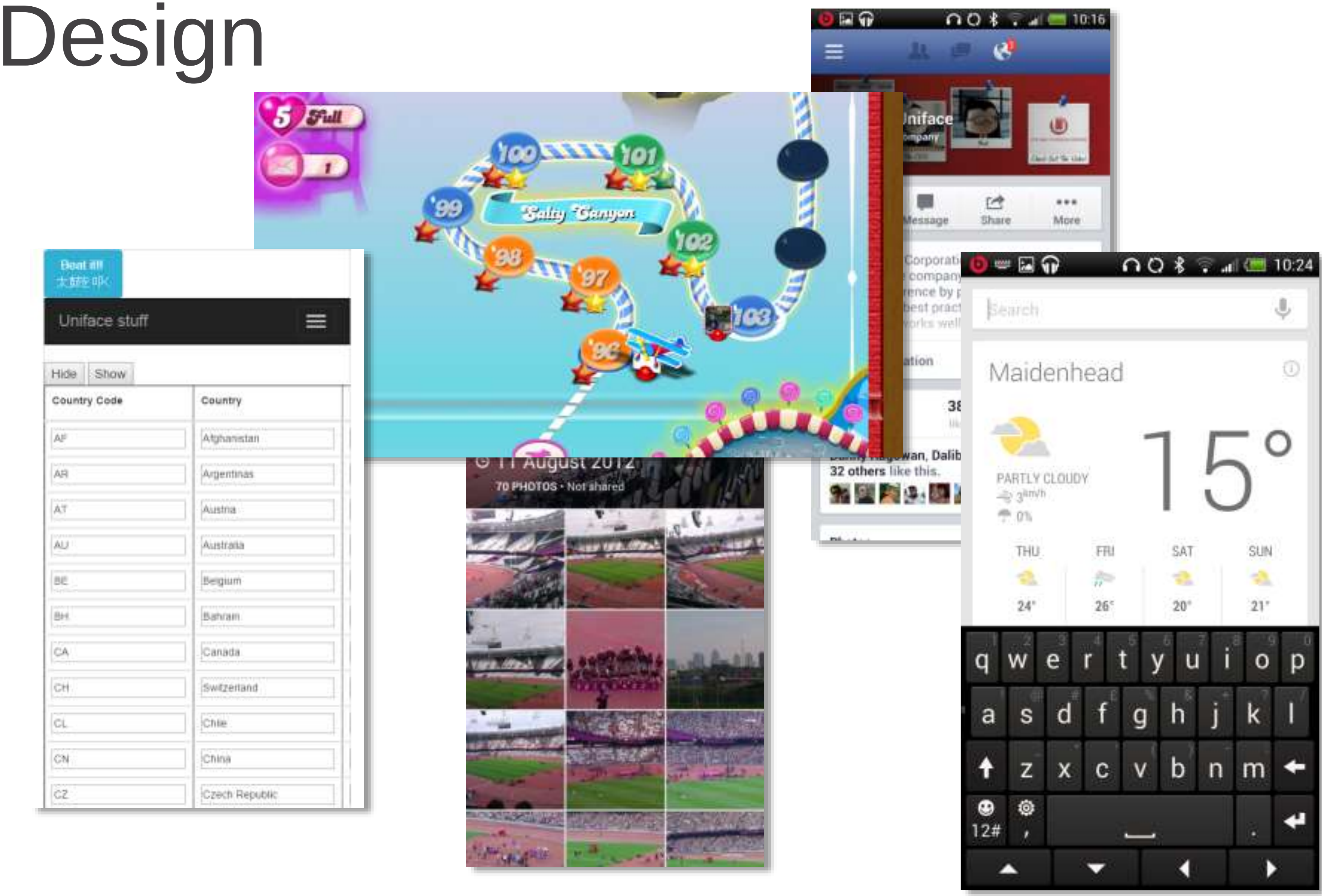
User Events

Design



Beat it!!
[illegible]

Uniface stuff

Hide Show

Country Code	Country
AF	Afghanistan
AR	Argentinas
AT	Austria
AU	Australia
BE	Belgium
BH	Bahrain
CA	Canada
CH	Switzerland
CL	Chile
CN	China
CZ	Czech Republic

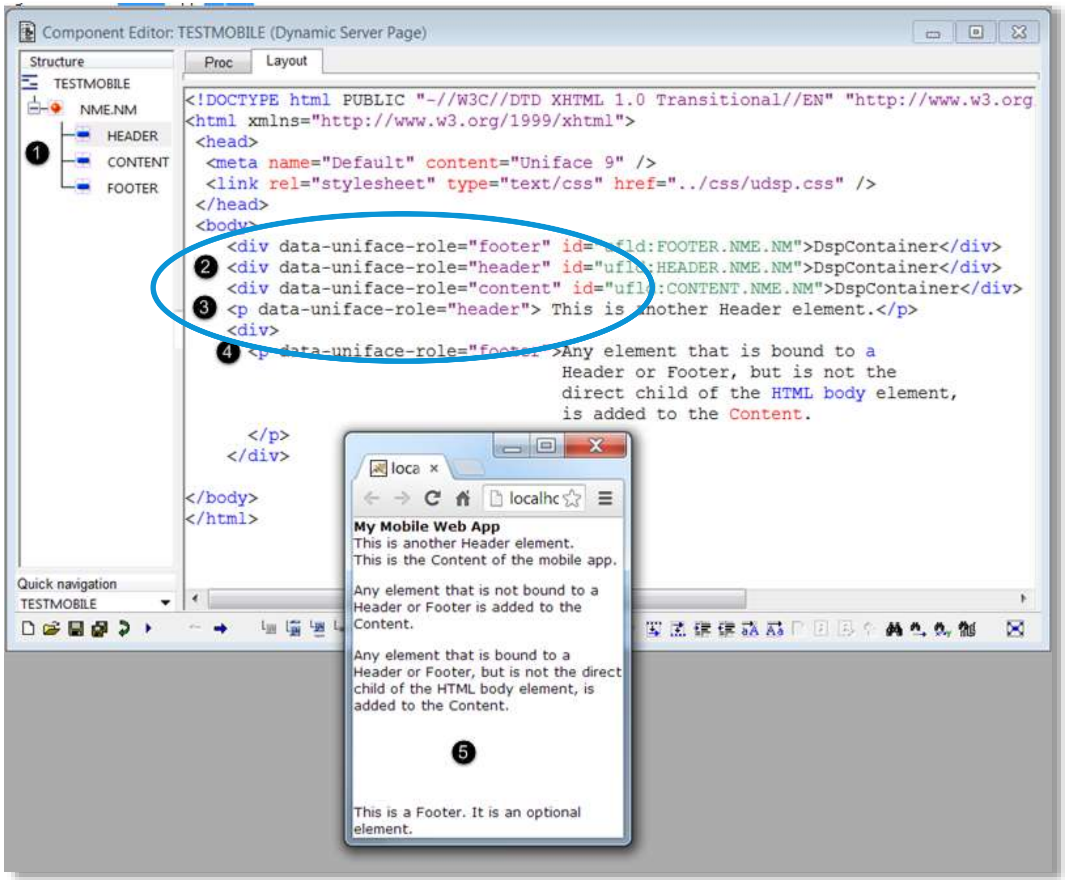
UNIFACE User Events

Design, what really matters

- More is not always better
  - Less information
  - Less time

Need a corkscrew ?

Mobile layout



```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org
<html xmlns="http://www.w3.org/1999/xhtml">
 <head>
  <meta name="Default" content="Uniface 9" />
  <link rel="stylesheet" type="text/css" href="../css/udsp.css" />
 </head>
 <body>
    <div data-uniface-role="footer" id="ufld:FOOTER.NME.NM">DspContainer</div>
    <div data-uniface-role="header" id="ufld:HEADER.NME.NM">DspContainer</div>
    <div data-uniface-role="content" id="ufld:CONTENT.NME.NM">DspContainer</div>
    <p data-uniface-role="header"> This is another Header element.</p>
    <div>
      <p data-uniface-role="footer">Any element that is bound to a
                                    Header or Footer, but is not the
                                    direct child of the HTML body element,
                                    is added to the Content.

      </p>
    </div>

</body>
</html>
```

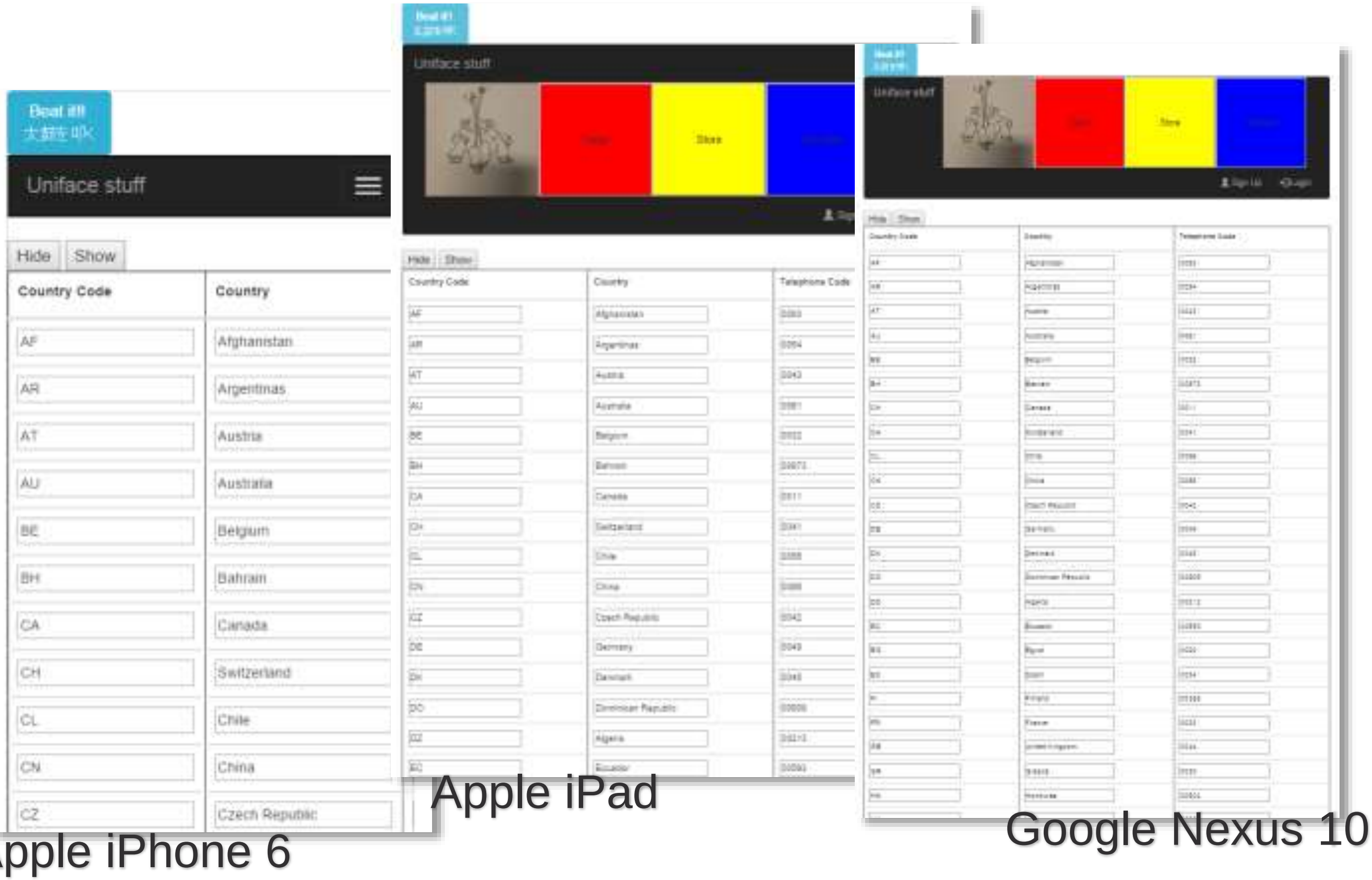
My Mobile Web App
This is another Header element.
This is the Content of the mobile app.

Any element that is not bound to a Header or Footer is added to the Content.

Any element that is bound to a Header or Footer, but is not the direct child of the HTML body element, is added to the Content.

This is a Footer. It is an optional element.

Viewport



Beat it!!

Uniface stuff

Hide Show

Country Code	Country
AF	Afghanistan
AR	Argentinas
AT	Austria
AU	Australia
BE	Belgium
BH	Bahrain
CA	Canada
CH	Switzerland
CL	Chile
CN	China
CZ	Czech Republic

Apple iPhone 6

Country Code	Country	Telephone Code
AF	Afghanistan	0093
AR	Argentinas	0054
AT	Austria	0043
AU	Australia	0061
BE	Belgium	0032
BH	Bahrain	00973
CA	Canada	0011
CH	Switzerland	0041
CL	Chile	0056
CN	China	0086
CZ	Czech Republic	0042
DE	Germany	0049
DK	Denmark	0045
DO	Dominican Republic	00809
DZ	Algeria	00213
EC	Ecuador	00593

Apple iPad

Google Nexus 10

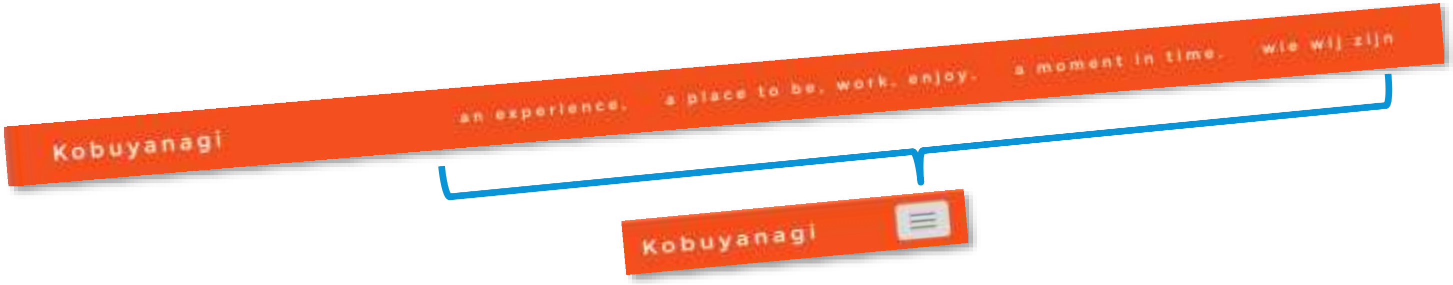
The viewport is the user's visible area of a web page.

Bootstrap

Bootstrap is the most popular HTML, CSS, and JS framework for developing responsive, mobile first projects on the web.

Components

Glyphicons

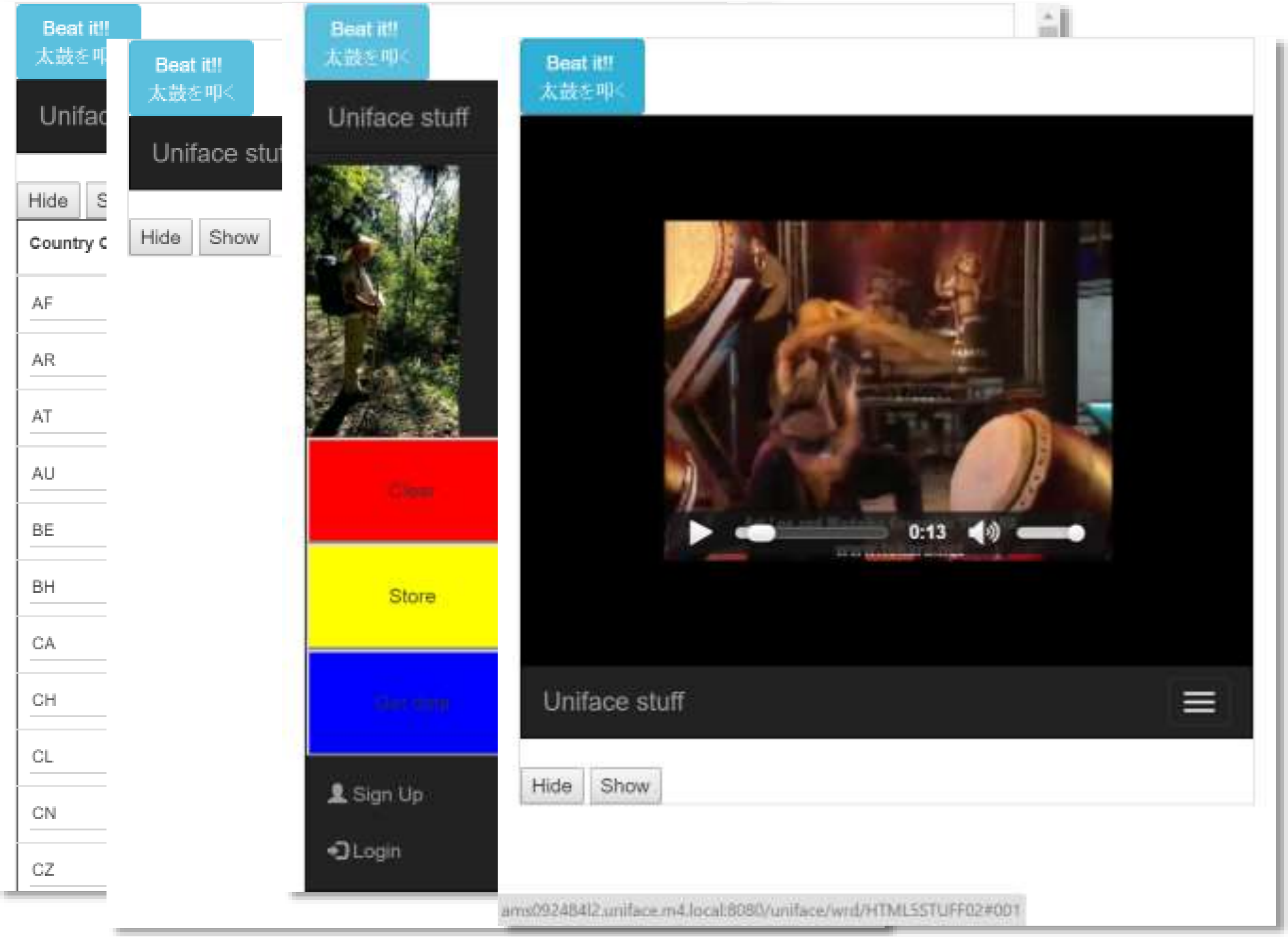


Demo

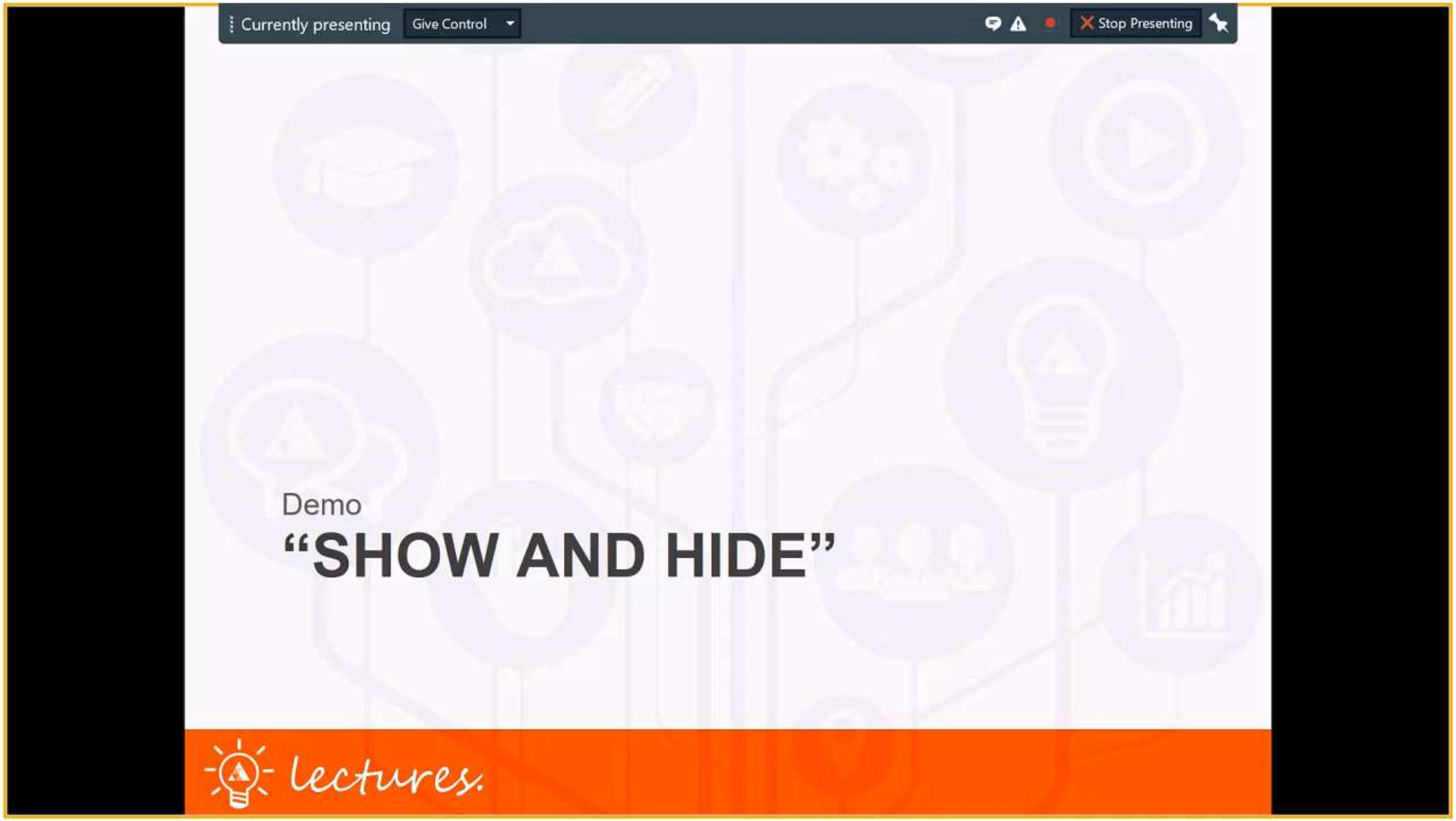
“Show and Hide”

UNIFACE

User Events


Beat it!!
太鼓を叩く
Uniface stuff
Hide
Show
Country C
AF
AR
AT
AU
BE
BH
CA
CH
CL
CN
CZ
Clear
Store
Get data
Sign Up
Login
0:13
ams09248412.uniface.m4.local:8080/uniface/wrd/HTML5STUFF02#001

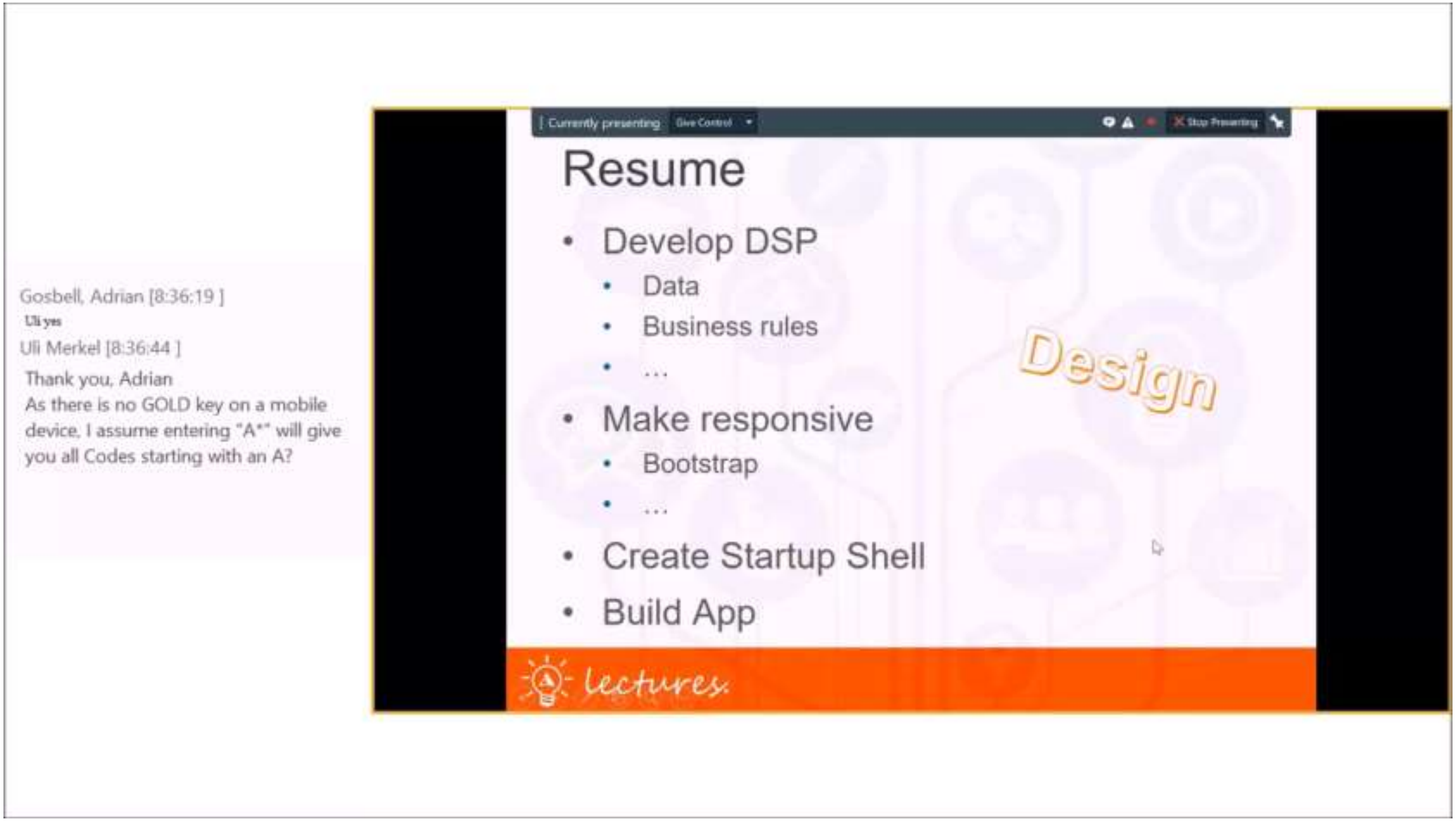
Demo pt. 1



Demo

“SHOW AND HIDE”

Demo pt. 2



Gosbell, Adrian [8:36:19]

Uli yes

Uli Merkel [8:36:44]

Thank you, Adrian
As there is no GOLD key on a mobile device, I assume entering "A*" will give you all Codes starting with an A?

Resume

- Develop DSP
  - Data
  - Business rules
  - …
- Make responsive
  - Bootstrap
  - …
- Create Startup Shell
- Build App

Design

lectures

Developing a Mobile App

1. Model the application data and default behavior.
2. Construct one or more DSPs that use the mobile app framework to define headers, footers, menus and navigation tools.
   - One DSP to serve as the main user interface of the app…
   - …containing two DSP container fields that are bound to the header and content of the Mobile App Layout.
   - Define other DSPs that contain the content to be displayed in the main DSP

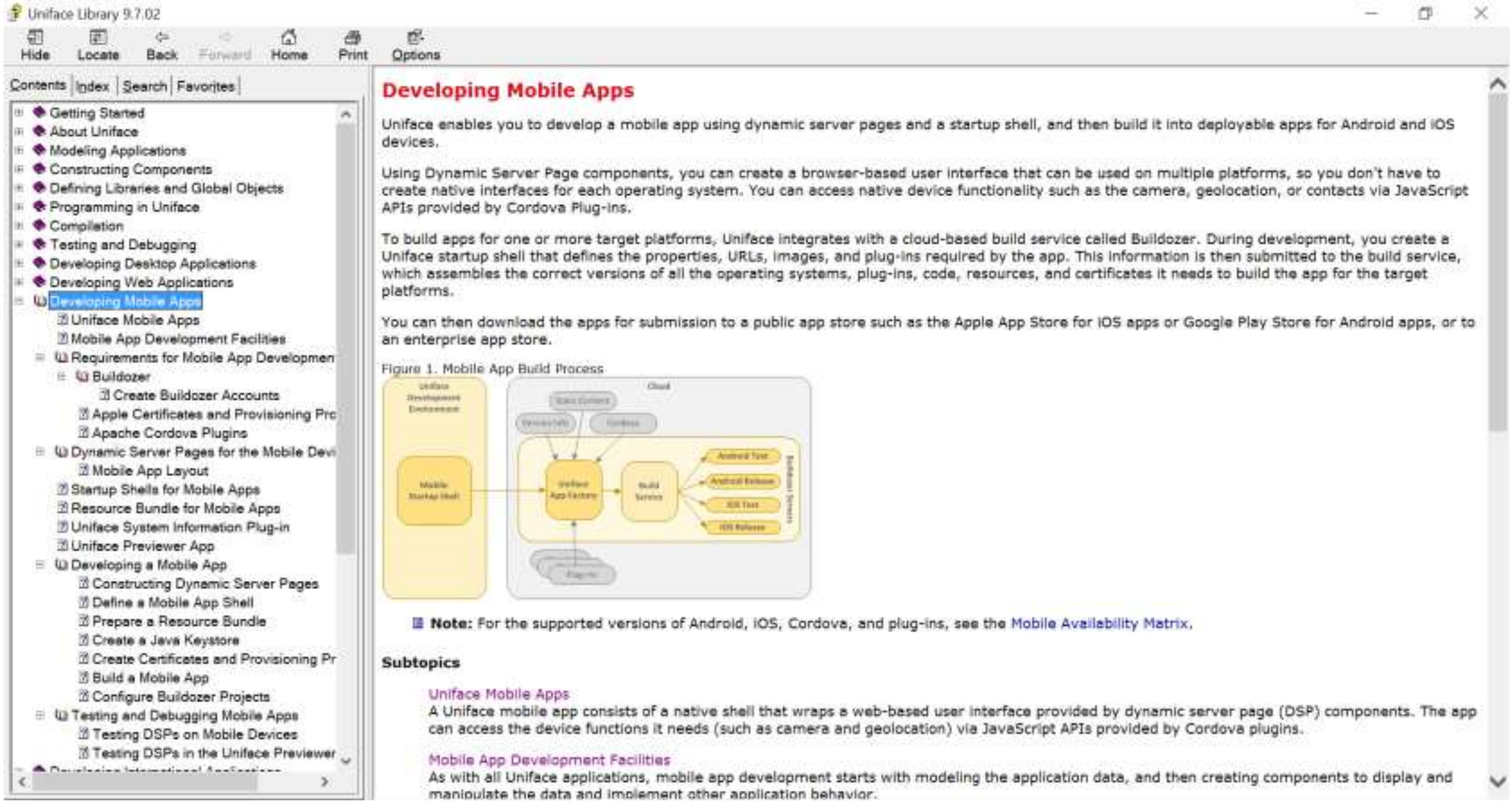
Developing a Mobile App

3. Program the application behavior
   - use Proc for server-side code.
   - use JavaScript for client-side code.
   - use the Uniface JavaScript API to address Uniface object.
   - use selected Apache Cordova APIs to address mobile device functionality.
4. Create a mobile startup shell to define the mobile app properties
5. Create a resource bundle
   - icons and splash screens that are required on your target platform

Developing a Mobile App

6. Build the mobile app by submitting the startup shell to the Buildozer service.
7. Download the generated apps for testing and publishing.

Detailed How-To in documentation



Developing Mobile Apps

Uniface enables you to develop a mobile app using dynamic server pages and a startup shell, and then build it into deployable apps for Android and iOS devices.

Using Dynamic Server Page components, you can create a browser-based user interface that can be used on multiple platforms, so you don't have to create native interfaces for each operating system. You can access native device functionality such as the camera, geolocation, or contacts via JavaScript APIs provided by Cordova Plug-ins.

To build apps for one or more target platforms, Uniface integrates with a cloud-based build service called Buildozer. During development, you create a Uniface startup shell that defines the properties, URLs, images, and plug-ins required by the app. This information is then submitted to the build service, which assembles the correct versions of all the operating systems, plug-ins, code, resources, and certificates it needs to build the app for the target platforms.

You can then download the apps for submission to a public app store such as the Apple App Store for iOS apps or Google Play Store for Android apps, or to an enterprise app store.

Figure 1. Mobile App Build Process

Note: For the supported versions of Android, iOS, Cordova, and plug-ins, see the Mobile Availability Matrix.

Subtopics

Uniface Mobile Apps
A Uniface mobile app consists of a native shell that wraps a web-based user interface provided by dynamic server page (DSP) components. The app can access the device functions it needs (such as camera and geolocation) via JavaScript APIs provided by Cordova plugins.

Mobile App Development Facilities
As with all Uniface applications, mobile app development starts with modeling the application data, and then creating components to display and manipulate the data and implement other application behavior.

Thank You!

Q&A

arjen.van.vliet@uniface.com

UNIFACE
User Events

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