

# Izrada mobilnih aplikacija u Oracle APEX-u

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# Sadržaj

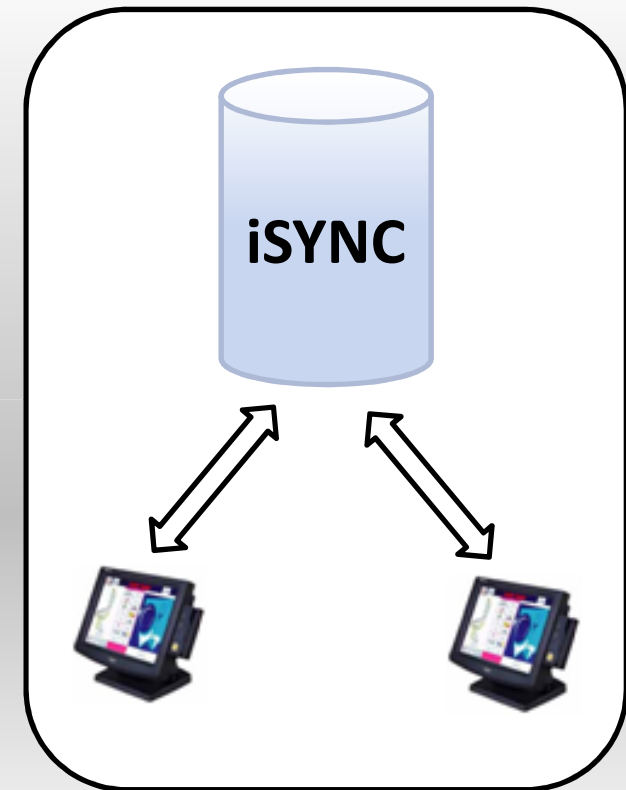
- iSYNC manager
- jQuery
- mobilni iSYNC manager u APEX-u 4.1
- APEX 4.2
- Elementi mobilnog sučelja u APEX-u
- Mobilni iSYNC manager u APEX-u 4.2



# iSYNC manager



- Sustav za centralizirano upravljanje i nadgledanje procesa sinkronizacije centralnog sustava i kasa u maloprodajnoj mreži
- centralni sustav – 11 g
  - iSYNC manager aplikacija – APEX 4.1
- POS uređaji – SQL Server Express
  - frontend u .NET-u
- iNovine, Opresa, Puljanka, Pipo, Glas Istre
  - oko 1000 kasa



# iSYNC manager



- u tijeku implementacija u Tisku
  - oko 1200 kasa
  - supstitucija za Oracle Lite (Mobile Server)

**iSYNC manager iNovine**

Home iSync In iSync Out Klijenti Administracija

Home

**iSync Manager Home**

iSync Out iSync In Klijenti Administracija Kontrola PM

ERROR QUEUE	LSD DOKUMENTI	BROJ DOKUMENATA	CHECK DOKUMENTI	OUT OF SYNC	KONTROLA PM
37	89	3791	257747	10	1

**iSYNC OUT rezultati zadnjih obrada**

DATUM	BROJ	ID	TRAJANJE	TIP	STATUS	BROJ REDAKA	RAZLIKA	PM
16.10.2012 19:00:02	012882	18472	2	INCR	0	22	0	-
16.10.2012 18:30:01	012881	18471	2	INCR	0	38	0	-
16.10.2012 18:00:01	012880	18470	2	INCR	0	6	0	-
16.10.2012 17:30:01	012879	18469	2	INCR	0	247	0	-
16.10.2012 17:00:01	012878	18468	6	INCR	0	2536	126	-

**iSYNC IN rezultati zadnjih obrada**

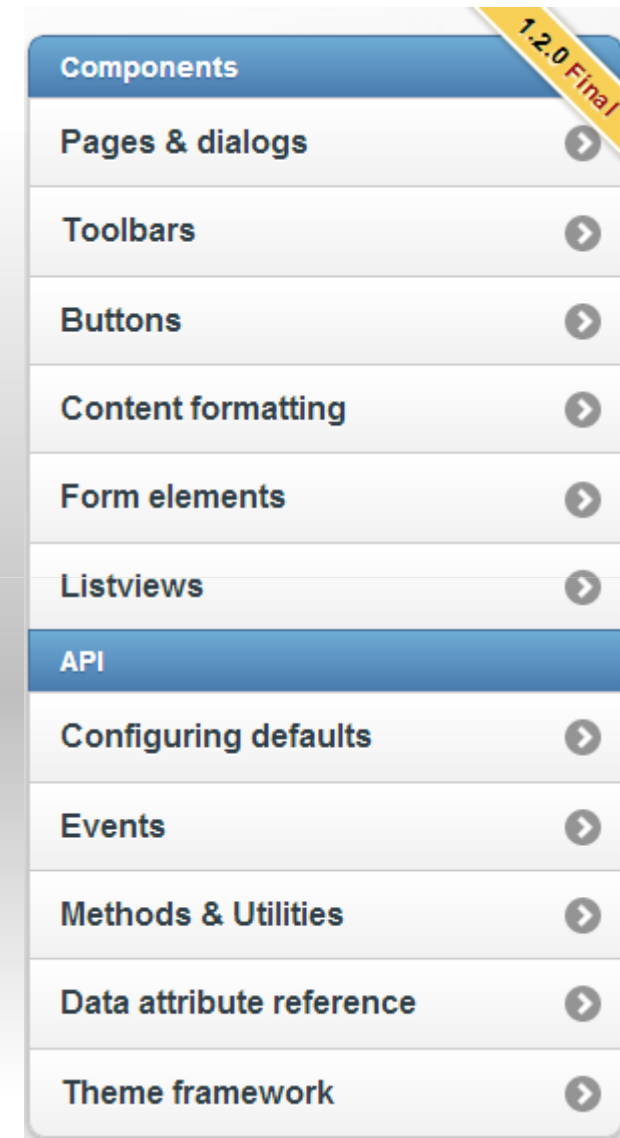
DATUM	BROJ	ID	TRAJANJE	STATUS	BROJ REDAKA	BROJ REDAKA CTL	RAZLIKA	BROJ ZIPOVA
16.10.2012 19:25:01	053966	67470	26	0	1867	1867	0	123
16.10.2012 19:19:02	053965	67469	41	0	11166	11166	0	202
16.10.2012 19:13:02	053964	67468	18	0	1270	1270	0	82
16.10.2012 19:07:01	053963	67467	58	0	45431	45431	0	241
16.10.2012 19:01:01	053962	67466	46	1	16508	16508	0	163

Verzija 4.1



# jQuery

- JavaScript library
- zajedničko sučelje za različite platforme mobilnih uređaja
- Ajax navigacija za animirane tranzicije među stranicama, toolbar-ovi, dijalozi, listview-ovi, gumbi, collapsibles, ...



The image shows a navigation menu for jQuery mobile 1.2.0 Final. The menu is a vertical list of items, each with a right-pointing arrow. The items are: Components, Pages & dialogs, Toolbars, Buttons, Content formatting, Form elements, Listviews, API, Configuring defaults, Events, Methods & Utilities, Data attribute reference, and Theme framework. The 'API' item is highlighted with a blue background. A yellow banner in the top right corner of the menu reads '1.2.0 Final'.

Components	➤
Pages & dialogs	➤
Toolbars	➤
Buttons	➤
Content formatting	➤
Form elements	➤
Listviews	➤
API	➤
Configuring defaults	➤
Events	➤
Methods & Utilities	➤
Data attribute reference	➤
Theme framework	➤

# mobilni iSYNC manager u APEX-u 4.1



- korištenje jQueryja modifikacijom postojećih i stvaranjem vlastitih predložaka
- Page Template

header

```
<!DOCTYPE html>
<html lang="&BROWSER_LANGUAGE." xmlns="http://www.w3.org/1999/xhtml"
xmlns:htmldb="http://htmldb.oracle.com" xmlns:apex="http://apex.oracle.com">
<head>
<title>#TITLE#</title>
<link rel="icon" href="#IMAGE_PREFIX#favicon.ico" type="image/x-icon">
<link rel="shortcut icon" href="#IMAGE_PREFIX#favicon.ico" type="image/x-icon">
#HEAD#
<link rel="stylesheet" href="http://code.jquery.com/mobile/1.0a4.1/jquery.mobile-1.0a4.1.min.css"
/>
<script type="text/javascript" src="http://code.jquery.com/jquery-1.5.2.min.js"></script>
<script type="text/javascript" src="http://code.jquery.com/mobile/1.0a4.1/jquery.mobile-
1.0a4.1.min.js"></script>
</head>
<body #ONLOAD#>
<div data-role="page">
#FORM_OPEN#
```



# mobilni iSYNC manager u APEX-u 4.1



body

```
<div data-role="header" data-backbtn="false">
<h1>#TITLE# - Glas Istre</h1>
#NAVIGATION_BAR#
</div><!-- /header -->
<div id="messages">#SUCCESS_MESSAGE##NOTIFICATION_MESSAGE##GLOBAL_NOTIFICATION#</div>
<div data-role="content">
<ul data-role="listview">
#REGION_POSITION_01#
#REGION_POSITION_02#
#REGION_POSITION_03#
#REGION_POSITION_04#
#REGION_POSITION_05#
#REGION_POSITION_06#
#REGION_POSITION_07#
</ul>
#BOX_BODY#
</div><!-- /content -->
```

footer

```
<div data-role="footer">
<h4>#REGION_POSITION_08#</h4>
</div><!-- /footer -->
#FORM_CLOSE#
</div>
</body>
</html>
```



# mobilni iSYNC manager u APEX-u 4.1



- Region Template
- List Template
  - navigacija
- poseban Report Template za svaku stranicu:

```
<li>  
<a href="#LINK#" rel="external">  
<p><h3>OBRADA: #BROJ_OBRADE# TIP: #TIP_OBRADE#</h3></p>  
<p><strong>DATUM: #DATUM_OBRADE#</strong></p>  
<p><strong>RAZLIKA: #RAZLIKA#</strong></p>  
</a>  
</li>
```

Logout	Rezultati (ukupno) - Glas Istre
<b>Rezultati (ukupno)</b>	
OBRADA: 013201 TIP: INCR DATUM: 16-10-2012 13:05:01 RAZLIKA: 264	➔
OBRADA: 013200 TIP: INCR DATUM: 16-10-2012 12:35:01 RAZLIKA: 1122	➔
OBRADA: 013199 TIP: INCR DATUM: 16-10-2012 12:05:01 RAZLIKA: 10	➔
OBRADA: 013198 TIP: INCR DATUM: 16-10-2012 11:35:01 RAZLIKA: 0	➔
OBRADA: 013197 TIP: INCR DATUM: 16-10-2012 11:05:01 RAZLIKA: 4	➔
OBRADA: 013196 TIP: INCR DATUM: 16-10-2012 10:35:01 RAZLIKA: 300	➔





# APEX 4.2



- Apex 4.2
  - EA na <https://apexea.oracle.com>
  - pre-production release na <https://apex.oracle.com>
  - **12.10.2012** izašao Apex 4.2.0.00.27
- integriran jQuery
- sučelja (User Interface):
  - Desktop
  - jQuery Mobile Smartphone



# APEX 4.2

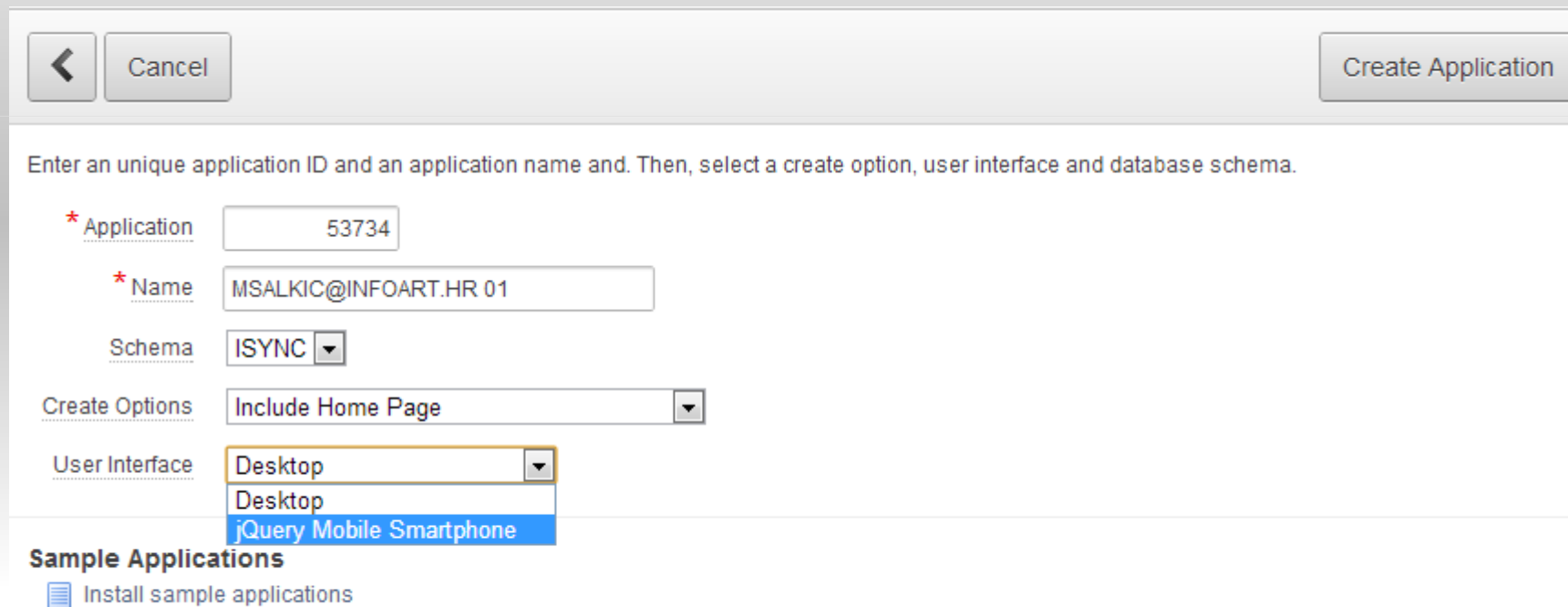


- teme:
  - tema 50 - jQuery Mobile Smartphone
  - sve postojeće teme postaju dio Desktop sučelja
- predložci (tema 50):
  - Region
    - Button Group
    - Collapsible
    - Header Toolbar
    - Footer Toolbar
  - List
    - ListView



# Elementi mobilnog sučelja u APEX-u

- **User Interface**
  - Desktop
  - jQuery Mobile Smartphone



Enter an unique application ID and an application name and. Then, select a create option, user interface and database schema.


\* Application

\* Name

Schema

Create Options

User Interface   
Desktop  
jQuery Mobile Smartphone

**Sample Applications**  
 Install sample applications

# Elementi mobilnog sučelja u APEX-u

- **User Interface**
  - više sučelja unutar iste aplikacije

User Interfaces								
Name	Type	Sequence	Auto Detect	Default	Home	Login	Theme	Global Page
<a href="#">jQuery Mobile Smartphone</a>	jQuery Mobile Smartphone	10	No	Yes	f?p=&APP_ID.:1:&SESSION.	f?p=&APP_ID.:LOGIN_JQM_SMARTPHONE:&SESSION.	jQuery Mobile Smartphone - 50*	0

1 - 1

Add New User Interface >

# Elementi mobilnog sučelja u APEX-u

- Reporti
- **Classic Report**
  - 3 stupca x 30 px
  - 533 x 320

Ename	Job	Sal
KING	PRESIDENT	5000
BLAKE	MANAGER	2850
CLARK	MANAGER	2450
JONES	MANAGER	2975
SCOTT	ANALYST	3000
FORD	ANALYST	3000
SMITH	CLERK	800
ALLEN	SALESMAN	1600
WARD	SALESMAN	1250

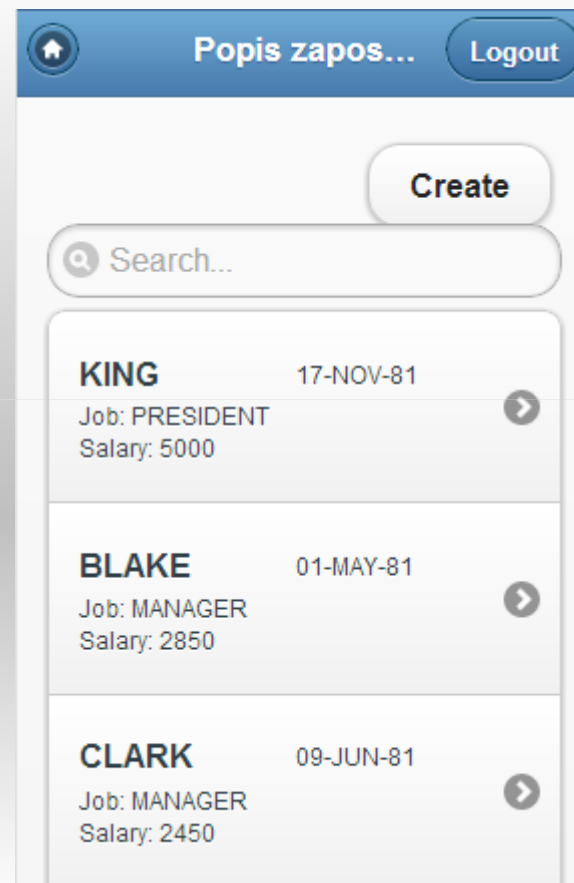
# Elementi mobilnog sučelja u APEX-u

- **Classic Report**
  - 4 stupca x 30 px
  - 533 x 320
  - “Responsive Design”
    - prilagođava se različitim uređajima i veličinama ekrana

Ename	Hiredate	Job	Sal
KING	17-NOV-81	PRESIDENT	5000
BLAKE	01-MAY-81	MANAGER	2850
CLARK	09-JUN-81	MANAGER	2450
JONES	02-APR-81	MANAGER	2975
SCOTT	09-DEC-82	ANALYST	3000
FORD	03-DEC-81	ANALYST	3000

# Elementi mobilnog sučelja u APEX-u

- **Listview**
  - jQuery element
  - search bar
  - link na formu za ažuriranje



# Elementi mobilnog sučelja u APEX-u

- **Listview** – prvi pokušaj

**Settings**

**Features**

- Advanced Formatting
- Show Image
- Show List Divider
- Has Split Button
- Enable Search
- Is Nested List View
- Inset List

**Text Column**

**Supplemental Information Column**

**Counter Column**

**Link Target**

**Search Type**

**Search Column**

**Search Box Placeholder**

**Zaposlenici** [Logout](#)

🔍 Ime

<b>KING</b>	PRESI...
<b>BLAKE</b>	MANA...
<b>CLARK</b>	MANA...
<b>JONES</b>	MANA...
<b>SCOTT</b>	ANALY...
<b>FORD</b>	ANALY...
<b>SMITH</b>	CLERK
<b>ALLEN</b>	SALE...
<b>WARD</b>	SALE...
<b>MARTIN</b>	



# Elementi mobilnog sučelja u APEX-u

- **Listview** – “napredno” formatiranje
  - Text Formatting
  - Link Target
- Has Split Button
  - max 2 linka
- Show List Divider
  - grupiranje
- Counter Column

Settings

Advanced Formatting

Show Image

Show List Divider

Has Split Button

Enable Search

Is Nested List View

Inset List

Features

List Attributes

List Entry Attributes

\* Text Formatting

```
<h2>&ENAME.</h2>
<p class="ui-li-aside" style="width:70px;">&HIREDATE.</class>
<p>Job: &JOB.</p>
<p>Salary: &SAL.</p>
```

Supplemental Information Formatting

Counter Column

List Divider Formatting

Link Target

Search Type

Search Column

Search Box Placeholder

# Elementi mobilnog sučelja u APEX-u

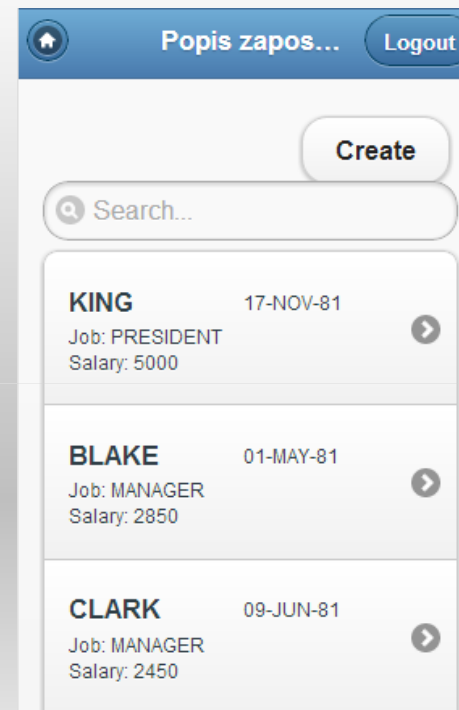
- **Listview** – “napredno” formatiranje
- sintaksa substitucije: **&VAR.**

```
<h2>&ENAME.</h2>
```

```
<p class="ui-li-aside" style="width:70px;">&HIREDATE.</class>
```

```
<p>Job: &JOB.</p>
```

```
<p>Salary: &SAL.</p>
```



# Elementi mobilnog sučelja u APEX-u

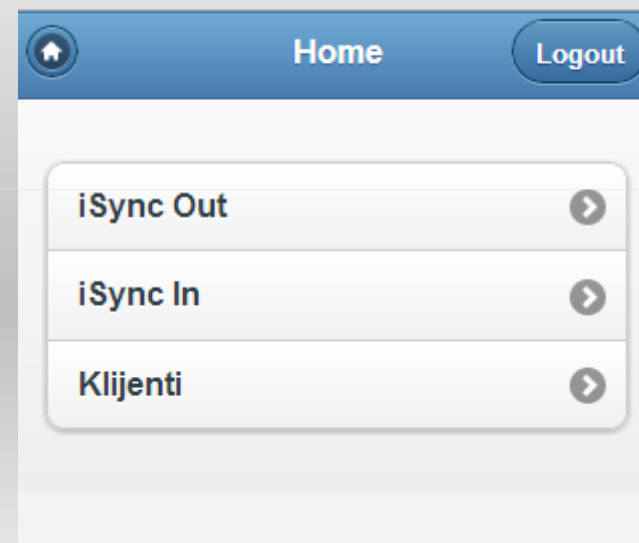
- Listview s formom za ažuriranje:
  - Form
  - Form on a Table with List View
- Zaključno o Listview-u:
  - osnovno formatiranje – max 2 kolone
  - napredno formatiranje – potrebno navesti sve kolone
    - cilj: ekonomični prikaz
  - ciljani linkovi se upisuju “ručno”
  - max 2 linka po retku

# Mobilni iSYNC manager u APEX-u 4.2



- prilagodba Desktop verzije za mobilno okruženje
- navigacija: lista s linkovima

Sequence	Name	Parent Entry	Target
10	<a href="#">iSync Out</a>	-	f?p=&APP_ID::2:&SESSION::&DEBUG:::
20	<a href="#">iSync In</a>	-	f?p=&APP_ID::5:&SESSION::&DEBUG:::
30	<a href="#">Klijenti</a>	-	f?p=&APP_ID::19:&SESSION::&DEBUG:::
50	<a href="#">Rezultati</a>	iSync Out	f?p=&APP_ID::3:&SESSION::&DEBUG:::
60	<a href="#">Greške</a>	iSync Out	f?p=&APP_ID::6:&SESSION::&DEBUG:::
70	<a href="#">Log</a>	iSync Out	f?p=&APP_ID::8:&SESSION::&DEBUG:::
80	<a href="#">Administracija</a>	iSync Out	f?p=&APP_ID::9:&SESSION::&DEBUG:::
90	<a href="#">Rezultati</a>	iSync In	f?p=&APP_ID::7:&SESSION::&DEBUG:::
100	<a href="#">Greške</a>	iSync In	f?p=&APP_ID::6:&SESSION::&DEBUG:::
110	<a href="#">Log</a>	iSync In	f?p=&APP_ID::8:&SESSION::&DEBUG:::
120	<a href="#">Administracija</a>	iSync In	f?p=&APP_ID::10:&SESSION::&DEBUG:::



# Mobilni iSYNC manager u APEX-u 4.2



Rezultati - u...	Logout	Rezultati (out...	Logout	Rezultati (out...	Logout
<b>000027</b> Datum: 31.05.2012 15:31 Ojbroj: <span>➤</span> Status: 0 Tip: INCR Broj redaka: 21 Error redaka: 0 Razlika: 21		<b>000027</b> Datum: 31.05.2012 15:31 Ojbroj: <b>100001</b> Kasa: 01 Status: 0 Tip: INCR Broj redaka: 4 Error: 0 Razlika: 4	<span>➤</span>	<b>000027</b> Datum: 31.05.2012 15:31 Ojbroj: 100001 Broj kase: 01 Status: 0 Tip obrade: INCR Tablica: PODVRSTE_DOK Broj redaka: 1 Razlika: 1 Error redaka: 0 Insert redaka: 0 Update redaka: 0 Delete redaka: 0	
<b>000026</b> Datum: 31.05.2012 12:15 Ojbroj: <span>➤</span> Status: 0 Tip: INCR Broj redaka: 43 Error redaka: 0 Razlika: 43		<b>000027</b> Datum: 31.05.2012 15:31 Ojbroj: <b>100010</b> Kasa: 01 Status: 0 Tip: INCR Broj redaka: 4 Error: 0 Razlika: 4	<span>➤</span>		
<b>000025</b> Datum: 31.05.2012 11:14 Ojbroj: <span>➤</span> Status: 0 Tip: INCR Broj redaka: 160 Error redaka: 0 Razlika: 120		<b>000027</b> Datum: 31.05.2012 15:31 Ojbroj: <b>900680</b> Kasa: 01 Status: 0 Tip: INCR Broj redaka: 9 Error: 0 Razlika: 9	<span>➤</span>	<b>000027</b> Datum: 31.05.2012 15:31 Ojbroj: 100001 Broj kase: 01 Status: 0 Tip obrade: INCR Tablica: POS_INI_PARAM Broj redaka: 2 Razlika: 2	



# Mobilni iSYNC manager u APEX-u 4.2



Skripte	Skripte (report)	Skripte (klijenti)
<b>31</b> Opis: DBA test Naziv datoteke: f200_page_51.sql Datum unosa: 05.06.2012 00:00 Datum slanja: 31.07.2012 00:00 Status: 4 Vrsta: COM Tip: SKRIPTA Broj klijenta: 5 Broj err reporta: 0	<b>Broj reporta: 0001</b> Datum reporta: 17.10.2012 00:00 Opis: Uspjesno izrsena skripta!	<b>31</b> Ojbroj: 900680 Naziv: BUKOVAČA Broj kase: 02
<b>29</b> Opis: 43.-a izmjena Naziv datoteke: INCR.000043.sql Datum unosa: 16.05.2012 11:05 Datum slanja: 16.05.2012 15:41 Status: 4 Vrsta: COM Tip: Broj klijenta: 4 Broj err reporta: 0	<b>Broj reporta: 0008</b> Datum reporta: 17.10.2012 00:00 Opis: Uspjesno izrsena skripta!	Ojbroj: 100010 Naziv: Infoart test 1 Broj kase: 01
<b>28</b> Opis: 42.-a izmjena Naziv datoteke: INCR.000042.sql		Ojbroj: 100001 Naziv: heldDesk 1 Broj kase: 01
		Ojbroj: 900680 Naziv: BUKOVAČA Broj kase: 01

List Divider

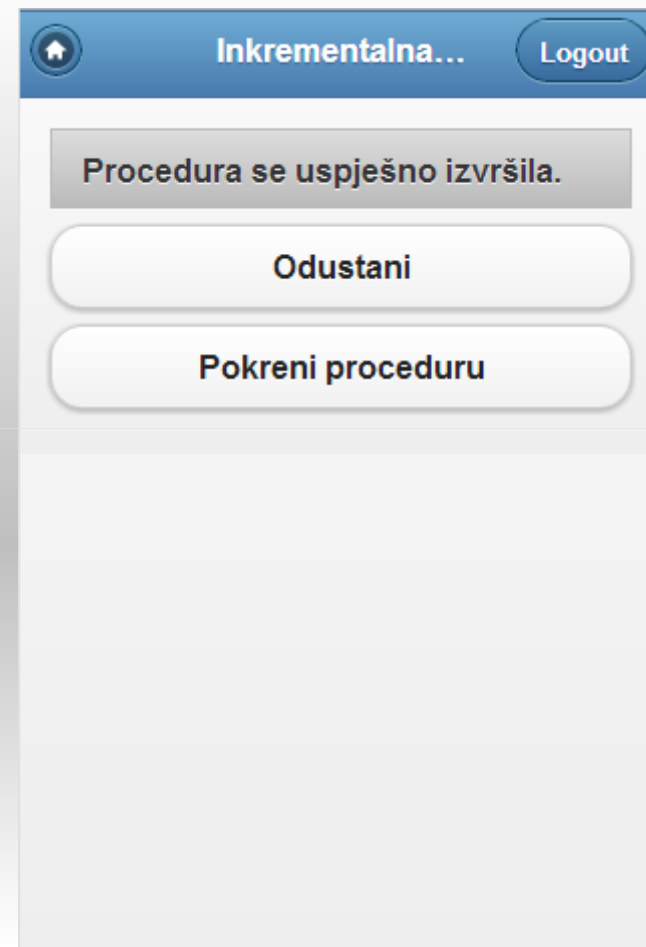
Split Button

Counter Column



# Mobilni iSYNC manager u APEX-u 4.2

- pokretanje procedura



# Mobilni iSYNC manager u APEX-u 4.2



- DML forma:
  - gumbi
  - yes/no

A screenshot of the iSYNC manager mobile application interface. The interface is displayed on a light gray background. At the top, there is a blue header bar with a home icon on the left, the text "SO\_KLIJENTI..." in the center, and a "Logout" button on the right. Below the header, the form contains several sections: 1. "Posid" section with a text input field containing the value "2008". 2. "Sinkronizacija" section with a toggle switch labeled "Da" that is currently turned on. 3. "\*Testna Kasa" section with a toggle switch labeled "Ne" that is currently turned off. 4. "\*Offline Sync" section with a toggle switch labeled "Ne" that is currently turned off. At the bottom of the form, there are two buttons: "Odustani" and "Obriši".



# Mobilni iSYNC manager u APEX-u 4.2



- HTML5 elementi
  - date picker
  - item tipovi
    - number
    - text: email, url, phone

**Settings**

Value Required	No
Subtype	Text
Submit when Enter pressed	E-Mail
Disabled	Phone Number URL

**Form on EMP** Logout

Hiredate  
12/17/1980

Sal  
800

Comm

Deptno  
20

Cancel Delete

# Mobilni iSYNC manager u APEX-u 4.2



- number

```
<input type="text" id="P3_DEPTNO" name="p_t08"
class="number_field ui-input-text ui-body-c ui-
corner-all ui-shadow-inset" value="10" size="30"
maxlength="2" style="text-align:right">
```

- text: email

```
<input type="email" id="P3_COMM" name="p_t07"
class="text_field ui-input-text ui-body-c ui-
corner-all ui-shadow-inset" value="" size="30"
maxlength="7">
```

Form on EMP Logout

Hiredate  
12/17/1980

Sal  
800

Comm

Deptno  
20

Cancel Delete



# Mobilni iSYNC manager u APEX-u 4.2



- slider

Settings	
Value Required	No ▾
* Minimum Value	0
* Maximum Value	10000
Step Increment	100
Highlight Selected	No ▾

```
<input type="number" data-type="range" id="P3_SAL"
name="p_t06" class="slider ui-input-text ui-body-c
ui-corner-all ui-shadow-inset ui-slider-input"
value="5000" min="0" max="10000" step="100">
```

Form on EMP Logout

Hiredate  
12/17/1980 ▾

Sal  
800

Comm

Deptno  
20

Cancel Delete

# Mobilni iSYNC manager u APEX-u 4.2

- neekonomično: null vrijednosti
- JavaScript

```
<p>Kod: <span class="value">&KOD.</span></p>
<p>Poruka: <span class="value">&PORUKA.</span></p>
<p>Broj obrade: <span
class="value">&BROJ_OBRADE.</span></p>
<p>Ojbroj: <span class="value">&OJBROJ.</span></p>
<p>POSID: <span class="value">&POSID.</span></p>
<p>Tablica: <span class="value">&TABLICA.</span></p>
```



Log (out) Logout

**31.05.2012 00:00**  
Procedura: PR\_SO\_UPDATE\_SO\_KLIJENTI...  
Opis: Procedura za update tablice SO\_KLIJE...  
Vrsta: OK  
Broj obrade: 22

**31.05.2012 00:00**  
Procedura: PR\_SO\_GENERATE\_INIT  
Tablica: VRSTE\_CJENIKA\_MJESTA\_TROSKA  
Opis: Brisanje TAB datoteka kojima je dump...  
Vrsta: OK  
Broj obrade: 20  
Ojbroj: 100010

**31.05.2012 00:00**  
Procedura: PR\_SO\_PROC\_RESULT  
Tablica: PODVRSTE\_DOK  
Opis: Procedura za unos rezultata obrade (pr...  
Vrsta: OK  
Broj obrade: 22  
Ojbroj: 100010  
Broj kase: 01




# Mobilni iSYNC manager u APEX-u 4.2

- Region template
  - Plain (No Title) - clearRows

```
<div id="#REGION_STATIC_ID#">
#BODY#
#SUB_REGIONS#
#CLOSE#
#DELETE#
#CREATE#
#EDIT#
#CHANGE#
<script type="text/javascript">
    clearEmptyRows();
</script>
</div>
```



	Log (out)	Logout
<b>31.05.2012 00:00</b> Procedura: PR_SO_UPDATE_SO_KLIJENTI... Opis: Procedura za update tablice SO_KLIJE... Vrsta: OK Broj obrade: 22		
<b>31.05.2012 00:00</b> Procedura: PR_SO_GENERATE_INIT Tablica: VRSTE_CJENIKA_MJESTA_TROSKA Opis: Brisanje TAB datoteka kojima je dump... Vrsta: OK Broj obrade: 20 Ojbroj: 100010		
<b>31.05.2012 00:00</b> Procedura: PR_SO_PROC_RESULT Tablica: PODVRSTE_DOK Opis: Procedura za unos rezultata obrade (pr... Vrsta: OK Broj obrade: 22 Ojbroj: 100010 Broj kase: 01		

# Mobilni iSYNC manager u APEX-u 4.2



- predložak Page
  - izmjena

```
<!DOCTYPE html>
<html lang="&BROWSER_LANGUAGE.">
<head>
  <meta charset="utf-8" />
  <meta name="apple-mobile-web-app-capable"
content="yes">
  <meta name="viewport" content="width=device-width,
initial-scale=1">
  <title>#TITLE#</title>
  #APEX_CSS#
  #TEMPLATE_CSS#
  #APEX_JAVASCRIPT#
  #TEMPLATE_JAVASCRIPT#
  #APPLICATION_JAVASCRIPT#
  #HEAD#
<script type="text/javascript">
  function clearEmptyRows() {
    lista = $('.value');
    for (i = lista.length - 1; i >= 0; --i) {
      var item = lista[i];
      vrijednost = $(item).html();
      if (vrijednost == '') {
        $(item).parent().remove();
      }
    }
  }
</script>
</head>
<body #ONLOAD#>
```



# Zaključak

- migracija uspješna
- nije zaista “RAPID”
  - potrebno formatirati svaki report
  - navesti svaku kolonu
  - “ručno” upisati linkove
  - automatska forma na listview-u
- odabrati samo nužne podatke i nužne mogućnosti iz Desktop verzije

# PITANJA & ODGOVORI