



**SAGE Computing Services**

Customised Oracle Training Workshops and Consulting

# ***A Path to the Future for Dinosaur Nerds***

-

***A Jdeveloper ADF mind map for Forms developers***

***Penny Cookson***

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# **SAGE Computing Services**

Customised Oracle Training Workshops and Consulting

***Penny Cookson***

***Managing Director and Principal Consultant***

***Working with Oracle products since 1987***

***Oracle Magazine Educator of the Year 2004***



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*penny@sagecomputing.com.au*



Oracle Forms Builder - C:\TRAIN\forms\fm10g\Bookings.fmb

File Edit View Layout Program Debug Tools Window Help

Object Navigator

- Forms
  - BOOKINGS
    - Triggers
    - Alerts
    - Attached Libraries
    - Data Blocks
      - EVENTS
        - Triggers
        - Items
          - DURATION
          - ORG\_NAME
          - EVENT\_NO
          - ORG\_ID
          - DESCRIPTION
          - CONTACT\_NAME
          - START\_DATE
          - END\_DATE
          - NUM\_ATTENDEES
          - COMMENTS

BOOKINGS: CNV\_EVENTS (EVENTS)

Canvas: CNV\_EVENTS Block: EVENTS

Tahoma 8 B I U

Events

Event No EVENT\_NO Organisation ORG\_ID ORG\_N

Description DESCRIPTION

Contact Name CONTACT\_NAME

Start Date START\_DATE End Date END\_DATE Days TI

Attendees NUM\_ATTEND Comments COMMENTS

Bookings

Booking No	Resource	Description	Charge	Made By
BOOKING_NO	RESOURC	RESOURCE_DESC	MADE_BY	MADE_BY
BOOKING_NO	RESOURC	RESOURCE_DESC	MADE_BY	MADE_BY
BOOKING_NO	RESOURC	RESOURCE_DESC	MADE_BY	MADE_BY
BOOKING_NO	RESOURC	RESOURCE_DESC	MADE_BY	MADE_BY
BOOKING_NO	RESOURC	RESOURCE_DESC	MADE_BY	MADE_BY

COMMENTS

Property Palette

mc: EVENT\_NO

General

- Enabled Yes
- Justification Start
- Implementation Class
- Multi-Line No
- Wrap Style Word
- Case Restriction Mixed
- Conceal Data No
- Keep Cursor Position No
- Automatic Skip No
- Popup Menu <Null>

Navigation

- Keyboard Navigable Yes
- Previous Navigation Item <Null>
- Next Navigation Item <Null>

Data

- Data Type Number
- Data Length Semantics Null
- Maximum Length 8
- Initial Value
- Required Yes
- Format Mask
- Lowest Allowed Value
- Highest Allowed Value
- Copy Value from Item

Mod: BOOKINGS File: C:\TRAIN\forms\fm10g\Bookings.fmb





Oracle Application Express - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://tryapexnow.com/apex/f?p=4500:1000:2371901082523277::NO::

Oracle Application Express

Welcome PENNY@SAGECOMPUTING.COM.AU (Logout) Feedback

Home Application Builder SQL Workshop Team Development Administration Search Workspace

Help

Welcome to Oracle Application Express 4.0 Early Adopter Phase III (EA3) hosted on Amazon EC2. Please use the Feedback link in the top right hand corner of each page to provide comments. Go [here](#) to review Early Adopter Feedback. See the [New Features Application](#) for working examples of many new features. Review the [New Feature Descriptions](#), including whether released in EA1 or EA2.

Workspace SAGE\_COOKSON Learn more ...

Application Builder SQL Workshop Team Development Administration

News |

Top Applications

Timesheet - Advanced	1
----------------------	---

Top Users

penny	123
nobody	2

Team Development

Show: All

Release: 0

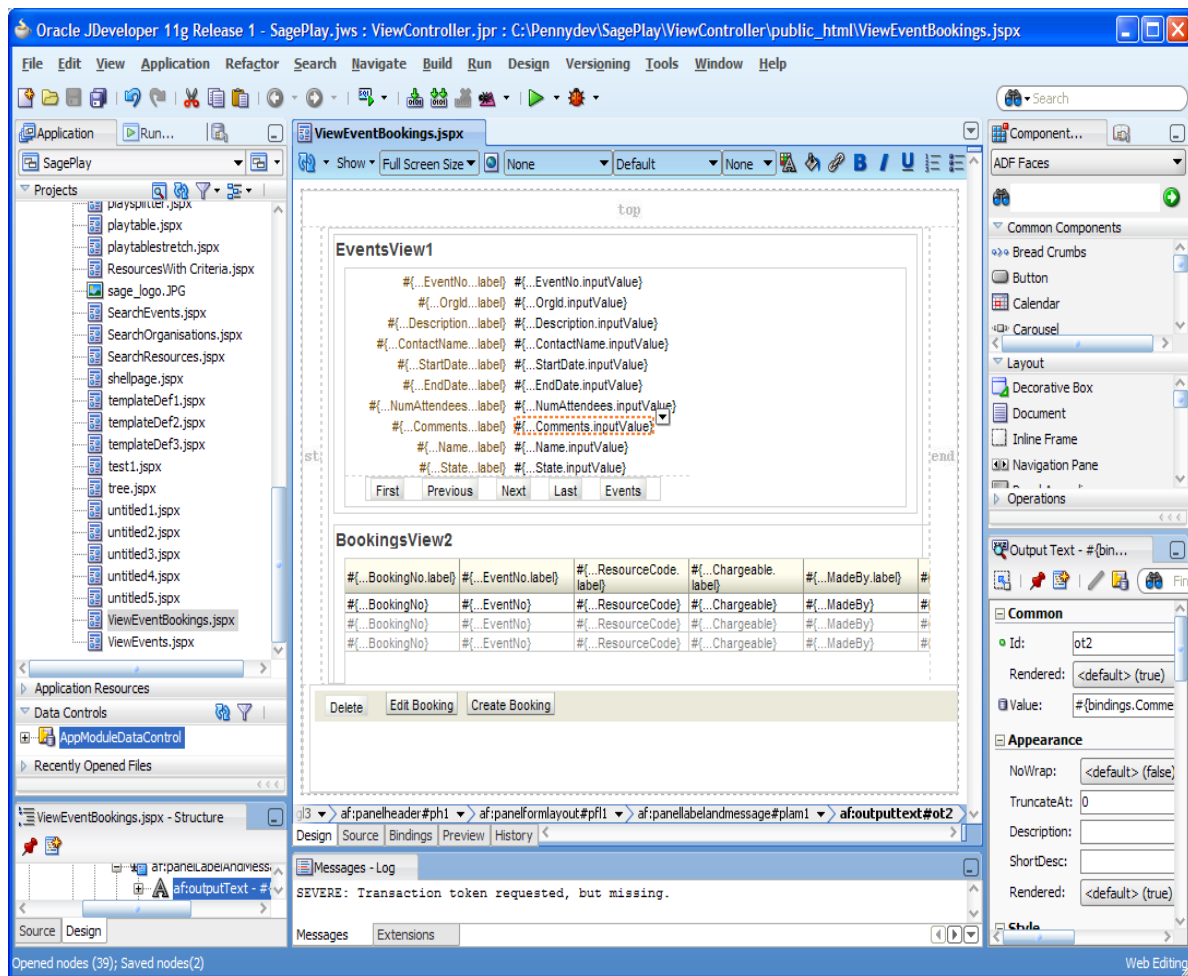
Features 0

Available Updates

System is up-to-date

Done

# So What Should we be Doing?





**Some of the Biggest New Projects  
will be Forms Modernisation  
and its not so different**





# **An Approach**

**Install (and unfortunately pay for)  
WebLogic Server**

**Migrate your Forms/Reports to 11g**

**Start adding new functionality/  
add ons in Jdeveloper ADF**

**Aim for Forms and ADF to co-exist**



Oracle Forms Builder - C:\TRAIN\forms\fm10g\Bookings.fmb

File Edit View Layout Program Debug Tools Window Help

Object Navigator

BOOKINGS: CNV\_EVENTS (EVENTS)

Canvas: CNV\_EVENTS Block: EVENTS

Tahoma 8 B I U

0 16 32 48 64 80 96 112 128 144 160 176 192 208 224 240 256 272 288 304 320 336 352

16 TODAY Events

32 Event No [EVENT\_NO] Organisation [ORG\_ID] [ORG\_N

48 Description [DESCRIPTION]

64 Contact Name [CONTACT\_NAME]

80 Start Date [START\_DATE] End Date [END\_DATE] Days [TI

96 Attendees [NUM\_ATTENDI] Comments [COMMENTS]

112

128

144

160

176

192

208 Booking Charge Made

224 BOOKING\_NO RESOURCE RESOURCE\_DESC [MADE\_BY]

240 BOOKING\_NO RESOURCE RESOURCE\_DESC [MADE\_BY]

256 BOOKING\_NO RESOURCE RESOURCE\_DESC [MADE\_BY]

272 BOOKING\_NO RESOURCE RESOURCE\_DESC [MADE\_BY]

288 BOOKING\_NO RESOURCE RESOURCE\_DESC [MADE\_BY]

304

320 COMMENTS

336

352

Property Palette

m: EVENT\_NO

General

Functional

Enabled Yes

Justification Start

Implementation Class

Multi-Line No

Wrap Style Word

Case Restriction Mixed

Conceal Data No

Navigation

Keyboard Navigable Yes

Previous Navigation Item <Null>

Next Navigation Item <Null>

Data

Data Type Number

Data Length Semantics Null

Maximum Length 8

Initial Value

Required Yes

Format Mask

Lowest Allowed Value

Highest Allowed Value

Copy Value from Item

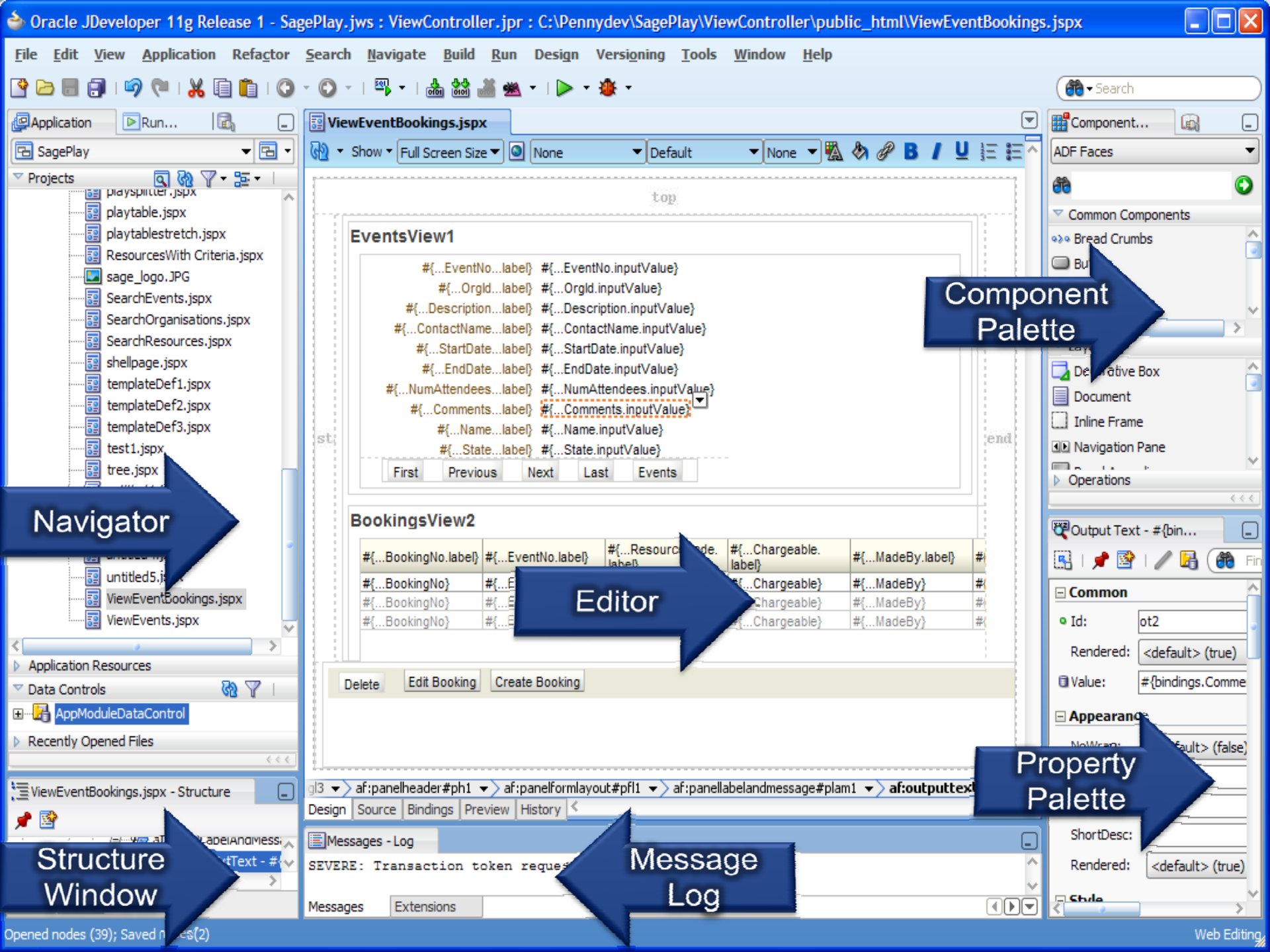
Navigator

Editor

Property Palette

Mod: BOOKINGS File: C:\TRAIN\forms\fm10g\Bookings.fmb

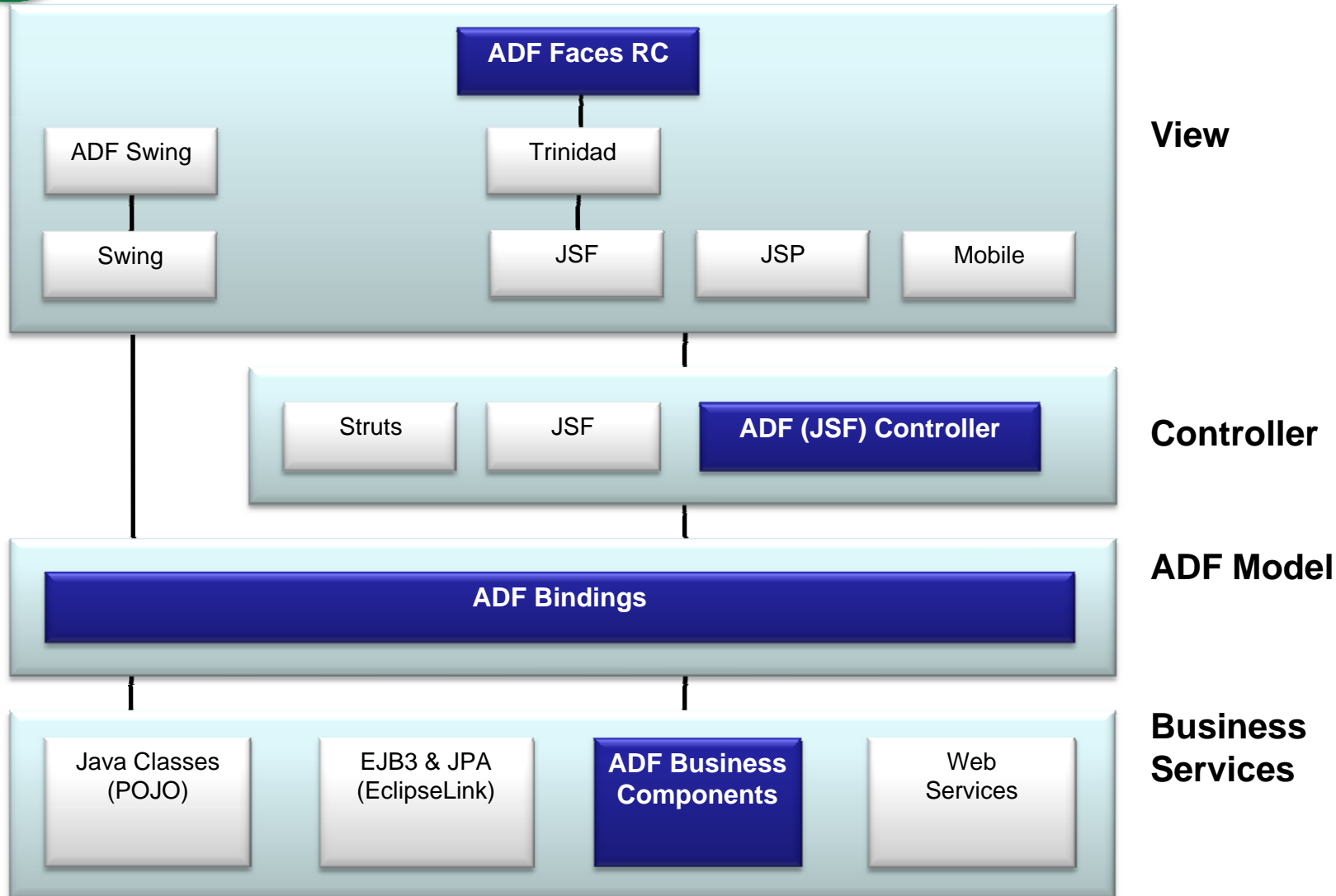




**Productivity with choice**

**Too much \*\*\*\*\* choice**

# Technologies



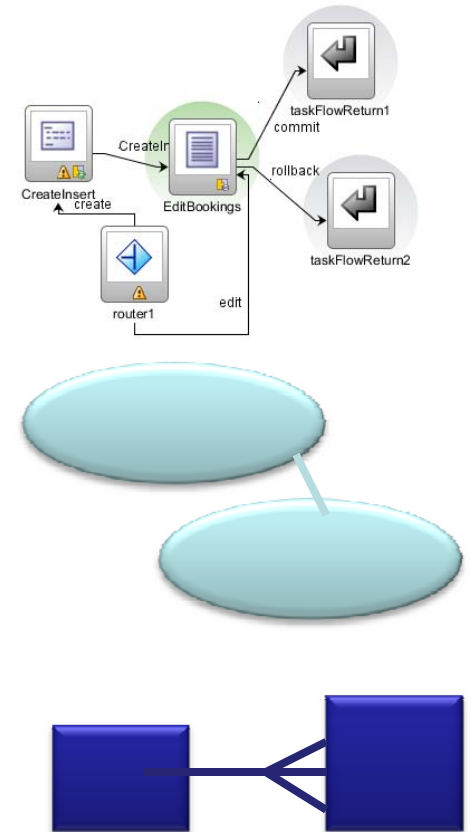
# Approach

- Build the Pages
- Build the Page Flow
- Build the Business Components
- Design and build the Database

EventsView1				
<input type="checkbox"/> Events	<input type="checkbox"/> Labels	<input type="checkbox"/> Events inputValue		
<input type="checkbox"/> Origin	<input type="checkbox"/> Labels	<input type="checkbox"/> Origin inputValue		
<input type="checkbox"/> Description	<input type="checkbox"/> Labels	<input type="checkbox"/> Description inputValue		
<input type="checkbox"/> StartDates	<input type="checkbox"/> Labels	<input type="checkbox"/> StartDate inputValue		
<input type="checkbox"/> EndDates	<input type="checkbox"/> Labels	<input type="checkbox"/> EndDate inputValue		
<input type="checkbox"/> NumAttendees	<input type="checkbox"/> Labels	<input type="checkbox"/> NumAttendee inputValue		
<input type="checkbox"/> Comments	<input type="checkbox"/> Labels	<input type="checkbox"/> Comment inputValue		
<input type="checkbox"/> State	<input type="checkbox"/> Labels	<input type="checkbox"/> Name inputValue		
<input type="button" value="Find"/> <input type="button" value="Previous"/> <input type="button" value="Next"/> <input type="button" value="Last"/> <input type="button" value="Events"/>				

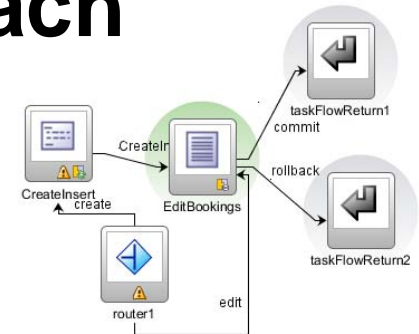
  

BookingsView2				
<input type="checkbox"/> Bookings label	<input type="checkbox"/> Events label	<input type="checkbox"/> ResourceCode label	<input type="checkbox"/> Chargeable label	<input type="checkbox"/> Maddy label
<input type="checkbox"/> Bookings	<input type="checkbox"/> Events	<input type="checkbox"/> ResourceCode	<input type="checkbox"/> Chargeable	<input type="checkbox"/> Maddy
<input type="checkbox"/> Bookings	<input type="checkbox"/> Events	<input type="checkbox"/> ResourceCode	<input type="checkbox"/> Chargeable	<input type="checkbox"/> Maddy
<input type="checkbox"/> Bookings	<input type="checkbox"/> Events	<input type="checkbox"/> ResourceCode	<input type="checkbox"/> Chargeable	<input type="checkbox"/> Maddy



# Alternative Approach

- Build the Page Flow



- Build the Pages

**EventsView1**

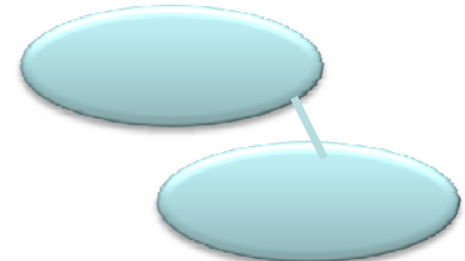
EventID	EventName	EventDate
EventDescription	EventLocation	EventStatus
EventStart	EventEnd	EventComments
EventNumAttendees	EventName	EventState

**BookingsView2**

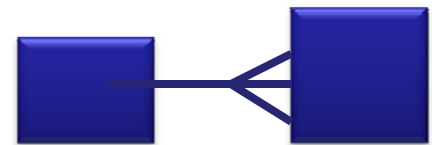
BookingID	EventID	ResourceCode	ChargeAmount	IsReady
Booking1	Event1	Resource1	Charge1	Ready1
Booking2	Event2	Resource2	Charge2	Ready2
Booking3	Event3	Resource3	Charge3	Ready3

Create Edit Booking Create Booking

- Build the Business Components



- Design and build the Database





# **Demo – Business Components**



Forms stores properties  
in .fmb

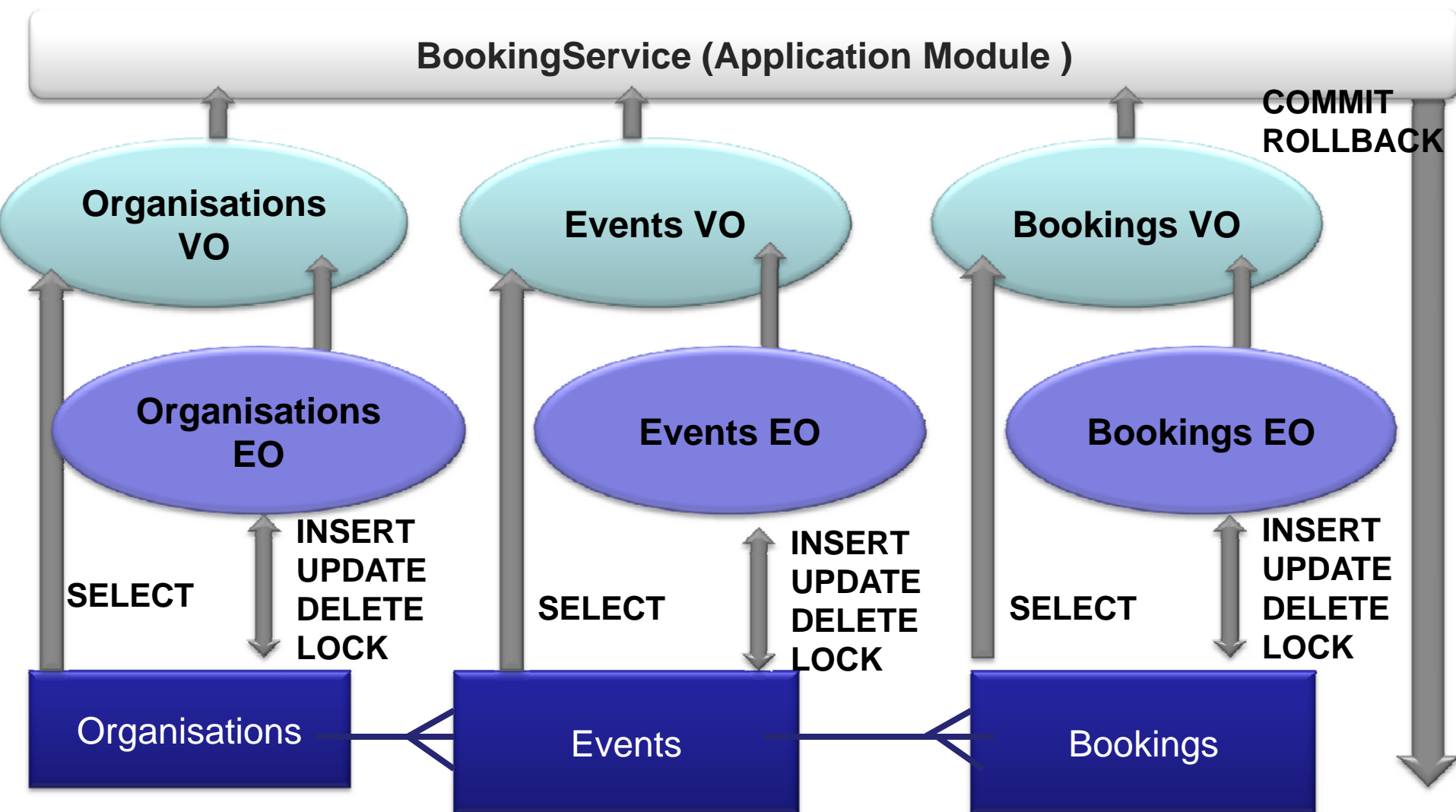
- Bookings.fmb
- Bookings\_test0.fmb
- Bookings\_test1.fmb
- Bookings\_test2.fmb
- Bookingsx.fmb
- EVENTS.fmb
- NEW\_FORM.fmb
- ORG1.fmb
- Orgns.fmb
- PROC\_FORM20\_1e.fmb
- RESOURCES.fmb
- TAB.fmb
- test2.fmb
- test.fmb

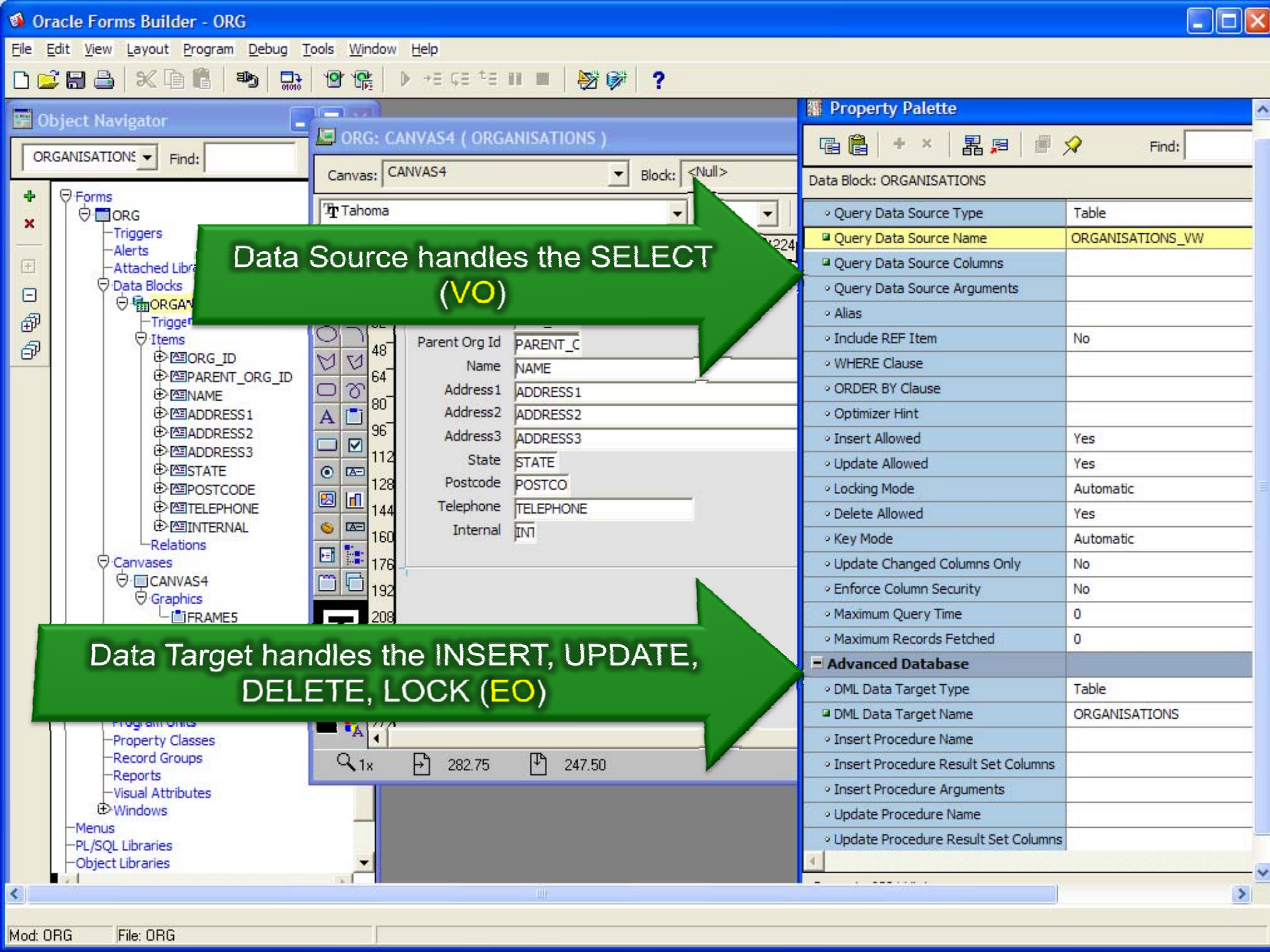
Jdev stores properties in  
XML files

Bookings.xml - WordPad

```
<?xml version="1.0" encoding="windows-1252" ?>
<!DOCTYPE Entity SYSTEM "jbo_03_01.dtd">
<!--
<Entity
  xmlns="http://xmlns.oracle.com/bc4j"
  Name="Bookings"
  Version="11.1.1.55.36"
  DBObjectType="table"
  DBObjectName="BOOKINGS"
  AliasName="Bookings"
  BindingStyle="OracleName"
  UseGlueCode="false"
  RowClass="model.BookingsImpl"
  DefClass="model.BookingsDefImpl"
  CollClass="model.BookingsCollImpl">
  <DesignTime>
    <Attr Name="_codeGenFlag2" Value="Init|Delete|Access|DML|Def|Coll"/>
    <AttrArray Name="publishEvents"/>
    <Attr Name="_isCodeGen" Value="true"/>
  </DesignTime>
  <Attribute
    Name="BookingNo"
    IsQueryable="false"
    IsNotNull="true"
    Precision="6"
    Scale="0"
    ColumnName="BOOKING_NO"
    SQLType="NUMERIC">
```

# How Does it Work– Model Layer

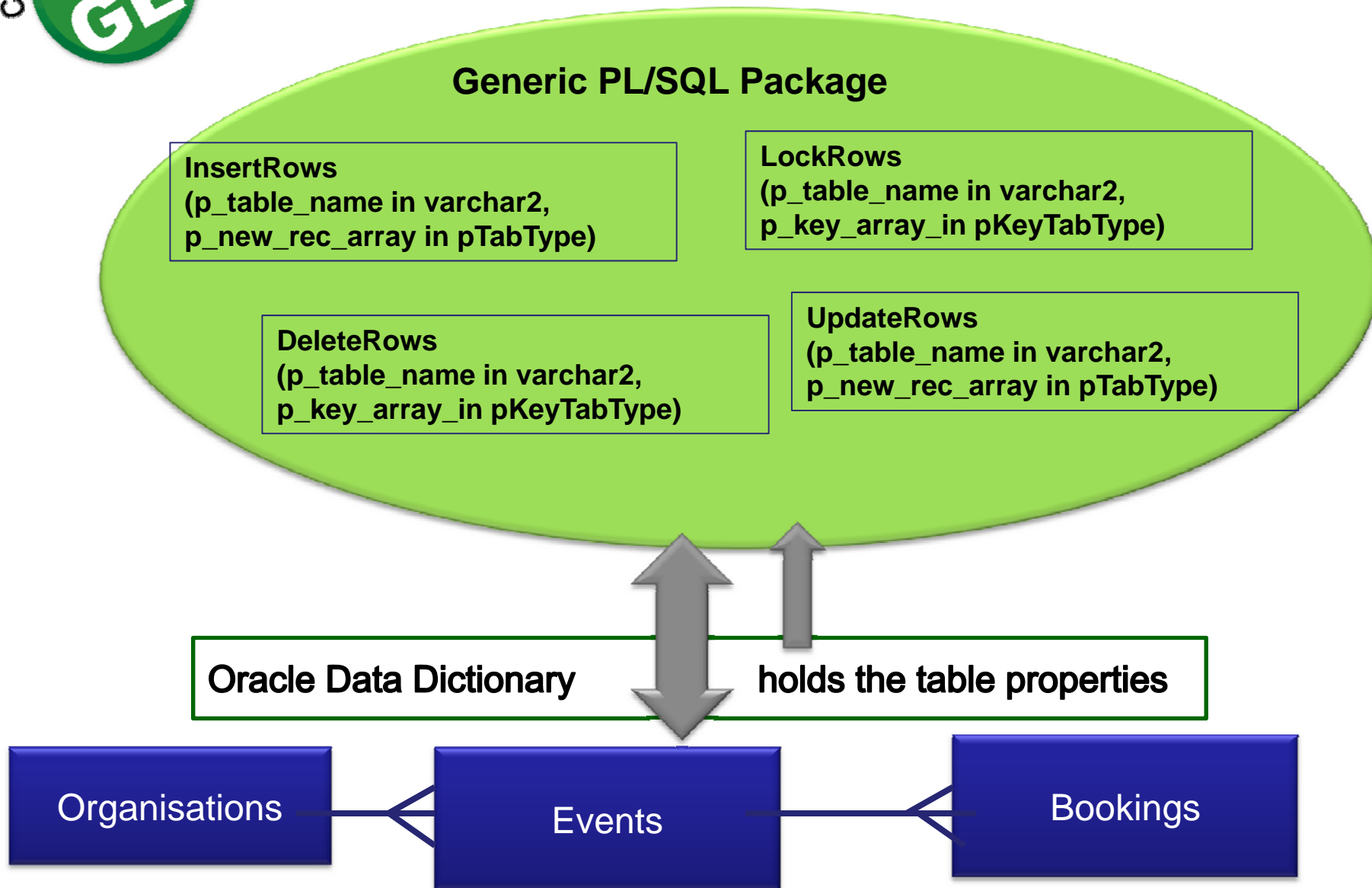




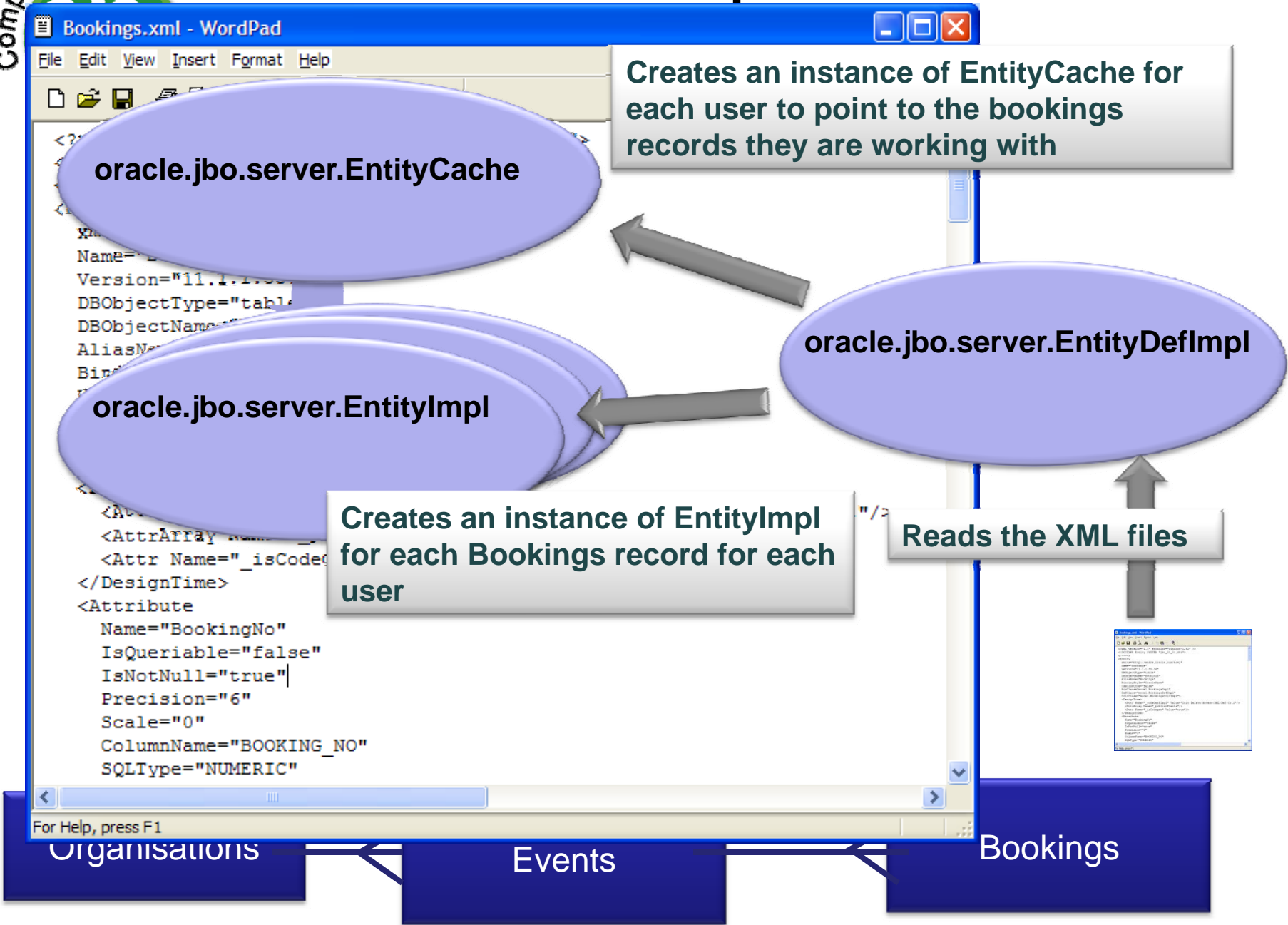
Data Source handles the SELECT  
(VO)

Data Target handles the INSERT, UPDATE,  
DELETE, LOCK (EO)

# A Pure PL/SQL Approach



# ADF Business Components Java Classes





## **Why Do We Care?**

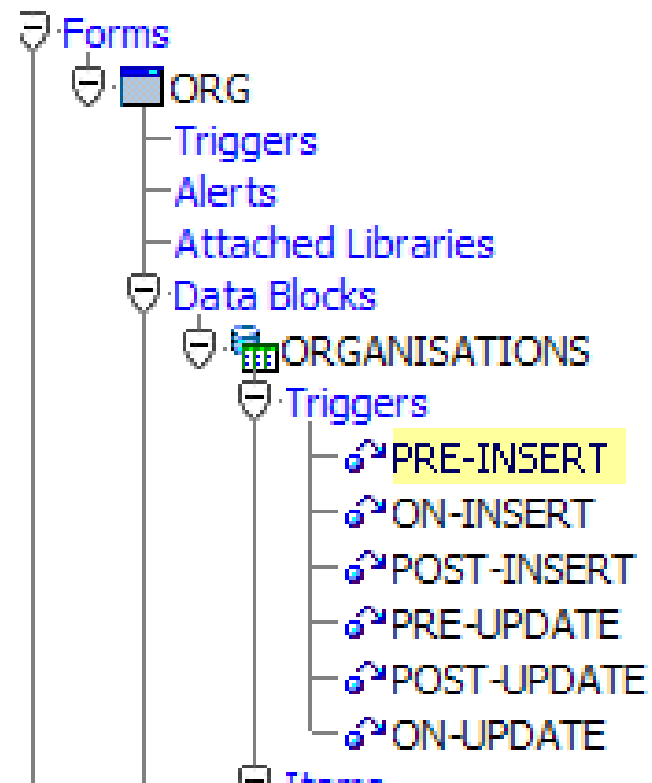
**Because we can Extend and  
Override them**



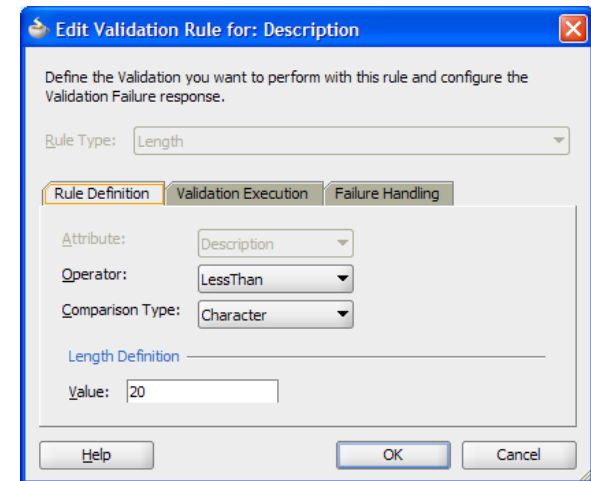
In Forms we can changes properties  
to implement business rules

Data	
◦ Data Type	Char
▣ Data Length Semantics	BYTE
▣ Maximum Length	4
◦ Initial Value	
◦ Required	No
◦ Format Mask	
▣ Lowest Allowed Value	2000
◦ Highest Allowed Value	6999

In Forms we can add code to specific  
events



In Jdev we can add declarative validation



In Jdev we can add Groovy scripting

DailyRateGst  
 Value Expression: DailyRate?.multiply(1.1);  
**cript Expression: model.Resources.DailyRateGst.TransientExpression[0].groovy**  
 1 DailyRate?.multiply(1.1);

In Jdev we can add code anywhere



**Demo Code in ADF BC**

**Demo ADF Faces Rich Client**

# How Does it Work – View

#{...OrgId...label}	#{...OrgId.inputValue}
#{...ParentOrgId...label}	#{...ParentOrgId.inputValue}
#{...Name...label}	#{...Name.inputValue}
#{...Address1...label}	#{...Address1.inputValue}
#{...Address2...label}	#{...Address2.inputValue}
#{...Address3...label}	#{...Address3.inputValue}
#{...State...label}	#{...State.inputValue}
#{...Postcode...label}	#{...Postcode.inputValue}
#{...Telephone...label}	#{...Telephone.inputValue}
#{...Email...label}	#{...Email.inputValue}
#{...Internal...label}	#{...Internal.inputValue} ▾
#{...PhoneNumber...label}	#{...PhoneNumber.inputValue}

First Previous Next Last Submit

```

1 <?xml version='1.0' encoding='windows-1252'?>
2 <jsp:root xmlns:jsp="http://java.sun.com/JSP/Page" version="2.1"
3   xmlns:f="http://java.sun.com/jsf/core"
4   xmlns:h="http://java.sun.com/jsf/html"
5   xmlns:af="http://xmlns.oracle.com/af/faces/rich">
6   <jsp:directive.page contentType="text/html; charset=windows-1252"/>
7   <f:view>
8     <af:document id="dl">
9       <af:messages id="m1"/>
10      <af:form id="f1">
11        <af:pageTemplate viewId="/templates/sageTemplate.jspx" id="pt1">
12          <f:attribute name="deleteButton" value="#(bindings.Delete)"/>
13          <f:attribute name="deleteButtonDisabled" value="#{false}"/>
14          <f:facet name="content">
15            <af:panelFormLayout id="pfl1">
16              <af:inputText value="#(bindings.OrgId.inputValue)"
17                label="#(bindings.OrgId.hints.label)"
18                required="#(bindings.OrgId.hints.mandatory)"
19                columns="#(bindings.OrgId.hints.displayWidth)"
20                maxLength="#(bindings.OrgId.hints.precision)"
21                shortDesc="#(bindings.OrgId.hints.tooltip)"
22                id="it4">
23                <f:validator binding="#(bindings.OrgId.validator)"/>
24                <af:convertNumber groupingUsed="false"
25                  pattern="#(bindings.OrgId.format)"/>
26              </af:inputText>
27              <af:inputText value="#(bindings.ParentOrgId.inputValue)"
28                label="#(bindings.ParentOrgId.hints.label)"
29                required="#(bindings.ParentOrgId.hints.mandatory)"
  
```

**Binding Classes**

Handle the interaction between the page and the model

**Model**

# How Does it Work – View

`oracle.adf.model.binding.DCDataControl`

`oracle.adf.model.BindingContext`

`oracle.adf.model.binding.DCBindingContainer`

`oracle.adf.uicli.binding.JUIteratorBinding`

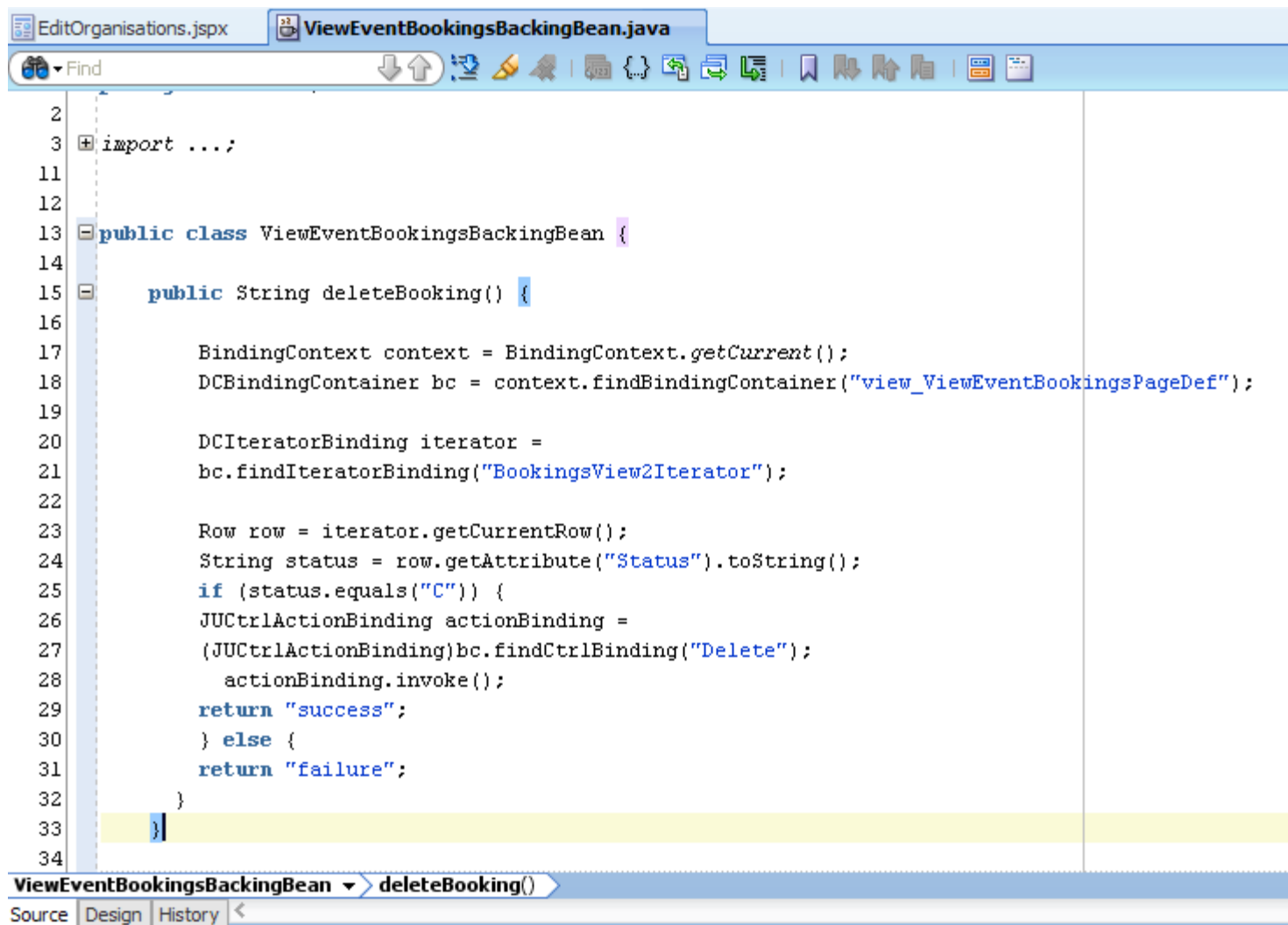
`oracle.jbo.uicli.binding.JUCtrlValueBinding`

`oracle.adfinternal.view.faces.model.  
binding.FacesCtrlActionBinding`

on between  
model

Model

# We can access the Binding classes to perform View/Controller level coding



```

2
3 import ...;
11
12
13 public class ViewEventBookingsBackingBean {
14
15     public String deleteBooking() {
16
17         BindingContext context = BindingContext.getCurrent();
18         DCBindingContainer bc = context.findBindingContainer("view_ViewEventBookingsPageDef");
19
20         DCIteratorBinding iterator =
21         bc.findIteratorBinding("BookingsView2Iterator");
22
23         Row row = iterator.getCurrentRow();
24         String status = row.getAttribute("Status").toString();
25         if (status.equals("C")) {
26             JUCtrlActionBinding actionBinding =
27             (JUCtrlActionBinding)bc.findCtrlBinding("Delete");
28             actionBinding.invoke();
29             return "success";
30         } else {
31             return "failure";
32         }
33     }
34

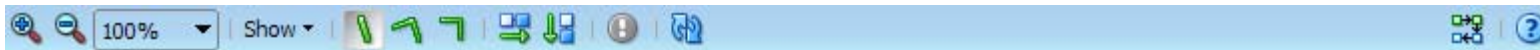
```

ViewEventBookingsBackingBean ▼ deleteBooking()

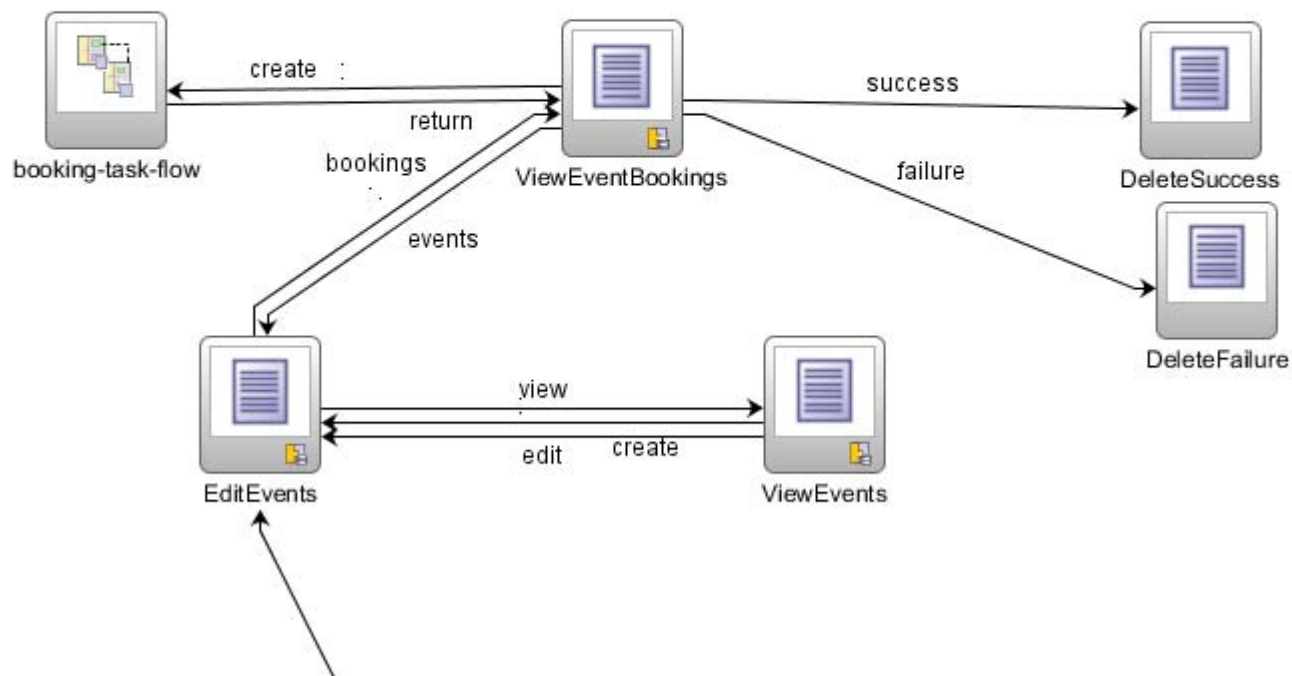
Source Design History <



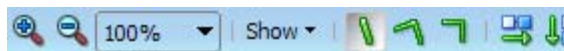
# Controller



Unbounded Task Flow



# Controller



Unbounded Task Flow

```

ViewEventBookingsBackingBean.java | booking-task-flow34.xml | booking2taskflow.xml | train
Find
1 <?xml version="1.0" encoding="windows-1252" ?>
2 <adfc-config xmlns="http://xmlns.oracle.com/adf/controller" version="1.2">
3   <view id="ViewEvents">
4     <page>/ViewEvents.jspx</page>
5   </view>
6   <view id="EditEvents">
7     <page>/EditEvents.jspx</page>
8   </view>
9   <view id="ViewEventBookings">
10    <page>/ViewEventBookings.jspx</page>
11  </view>
12  <view id="DeleteFailure">
13    <page>/DeleteFailure.jspx</page>
14  </view>
15  <view id="DeleteSuccess">
16    <page>/DeleteSuccess.jspx</page>
17  </view>
18  <view id="EditOrganisations">
19    <page>/EditOrganisations.jspx</page>
20  </view>
21  <view id="SearchOrganisations">
22    <page>/SearchOrganisations.jspx</page>
23  </view>
24  <view id="SearchResources">
25    <page>/SearchResources.jspx</page>
26  </view>
27  <view id="EditResources">
28    <page>/EditResources.jspx</page>
29  </view>
30  <task-flow-call id="booking-task-flow">
31    <task-flow-reference>
32      <document>/WEB-INF/booking-task-flow.xml</document>
33      <id>booking-task-flow</id>
34    </task-flow-reference>
  
```

Diagram Overview Source History



16/09/004 12:10:03

- ☒ Order By date
- ☐ Order By Org Id

Events

Event No 226

Organisation 3843 Marketing Services

Description Database Administration Service Review

Contact Name Barry Simpson

Start Date 19/APR/199: Duration 1

End Date 19/APR/199: Comments

Attendees 28

Total Cost \$0.00

Bookings

Check Resource

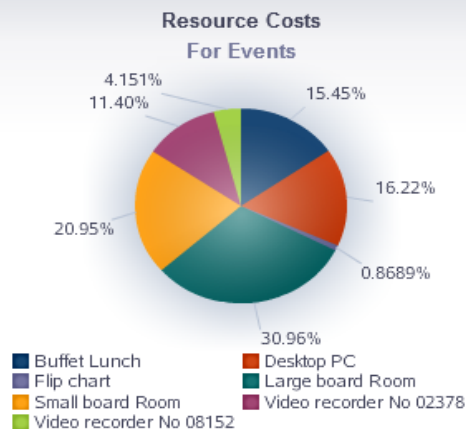
Booking No	Code		Chargeable	Made By	Qty	Cost	Status
1314	BRLG		<input checked="" type="checkbox"/>	USER6	1	\$0.00	C
			<input type="checkbox"/>				
			<input type="checkbox"/>				
			<input type="checkbox"/>				
			<input type="checkbox"/>				

OrgId	Name	State
1000	Sage Computing Services	WA
1010	Training Division	WA
1030	Self Study Program	
1040	Classroom Training	
2264	Australian Medical Systems	VIC
3210	Conservation Society	NSW
3214	Forests Division	NSW
3216	Rivers Division	NSW
4394	Newface cosmetics	WA
3842	Institute of Business Services	NSW
3843	Marketing Services	NSW
3844	Financial Services	NSW

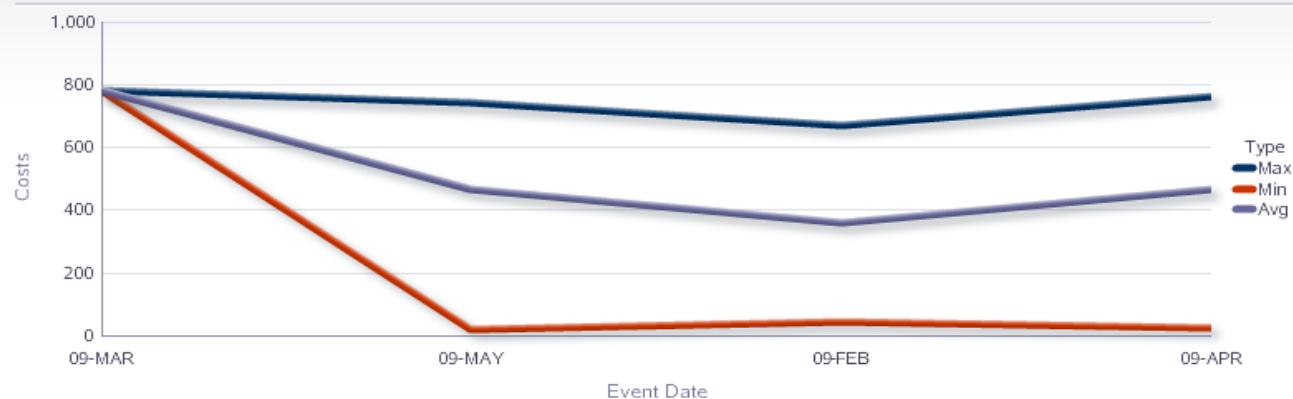
EventNo	StartDate	EndDate	NumAttend
108	5/02/2009	18/02/2009	34
153	31/03/2009	10/04/2009	32
176	20/04/2009	25/04/2009	33
187	10/05/2009	13/05/2009	23

Code	Description	DailyRate
VCR1	Video recorder No 02378	100
VCR2	Video recorder No 08152	120
BRLG	Large board Room	
BRSM	Small board Room	
CONF	Conference Centre	1000

Bookings
108 2009-02-05 07:55:20.0 2009-02-18 07:55:20.0
153 2009-03-31 07:55:20.0 2009-04-10 07:55:20.0
176 2009-04-20 07:55:20.0 2009-04-25 07:55:20.0
187 2009-05-10 07:55:20.0 2009-05-13 07:55:20.0



Costs by month



Task	View	All Tasks	Default
EventNo	Description	StartDate	EndDate
108	Monthly staff meeting	5/02/2009	18/02/2009
153	Monthly staff meeting	31/03/2009	10/04/2009
176	Monthly staff meeting	20/04/2009	25/04/2009
187	Monthly staff meeting	10/05/2009	13/05/2009

Apr 5, '09	Apr 12, '09	Apr 19, '09
W T F S S M T W T F S S M T W T F S S M T W T F S		



## **SAGE Computing Services**

Customised Oracle Training Workshops and Consulting

**Questions?**

**Next Sage Jdeveloper Training Workshop**  
**31st Jan – 4th Feb**

Presentations are available from our website:

*<http://www.sagecomputing.com.au>*

*[enquiries@sagecomputing.com.au](mailto:enquiries@sagecomputing.com.au)*

*[penny@sagecomputing.com.au](mailto:penny@sagecomputing.com.au)*