



Common Stuff-ups and How to Avoid Them

SAGE Computing Services
Customised Oracle Training Workshops
and Consulting
www.sagecomputing.com.au

Penny Cookson – Managing Director

Attitude – the 4 steps

- **My name is Penny Cookson and I have made lots of mistakes**
- **Some of them I have made more than once**
- **I promise to learn from them and never to do it again**
- **This is a group thing – I figure you have all made mistakes and I can learn from them too**

Disclaimer – Please note that I have never made a mistake while working at YOUR site

Project Methodology

Methodologies that require too much documentation are just an excuse for consultants charging too much

Prototyping methodologies allow us to build the wrong system much faster (Dai Clegg?)

Project Methodology

**Agile Methodology is usually an excuse
for not having one**

*We started off trying to set up a small anarchist community, but
people wouldn't obey the rules. (Alan Bennet)*



Project Methodology

I know it goes live next week, but we just need a few minor changes in scope



Project Standards

**A one hundred page document is no use
to anyone**

**Use a small set of examples and make
them available on-line**



Project Management

Determine requirements

Decide when the project must be finished

Find out the budget / number of resources

**Make up a project plan that makes it look
as though we can do it**

*Get your facts first, then you can distort them as much as you please
(Mark Twain)*



Project Management

The project must be finished on 1st November.

Why?

Because we told the minister/CEO/another important person it would be

*The art of leadership is saying no, not yes. It is very easy to say yes
(Tony Blair)*

Project Costs



**If we have a fixed price contract we will
get what we want**

**Lets get a few cheap resources, they can
learn on the job**

*All you need in life is ignorance and confidence , then success is sure
(Mark Twain)*

Project Estimates

The data migration will be simple

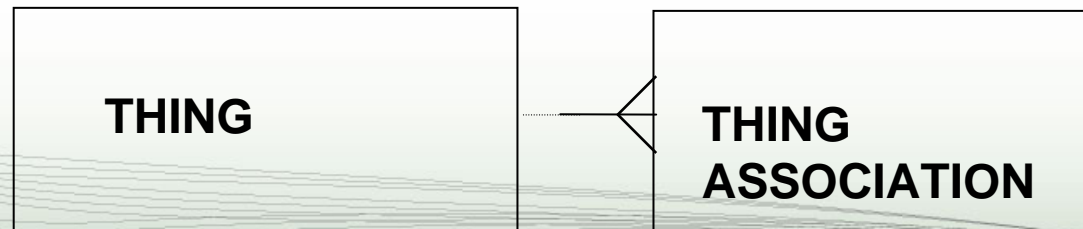
*If to do were as easy as to know what were good to do, chapels had
been churches and poor men's cottages princes palaces.
I can easier teach twenty what were good to be done, than be one of
the twenty to follow mine own teaching
(Shakespeare)*

Design



Design is about decisions. Write down why you made the decisions

Never try to implement really clever design ideas, the support people will hate you



Common Sense is not so common. (Voltaire)

Data Models

If you have a bad data model you are unlikely to have a successful project

Don't make compromises

Data Models



ACCOUNT_CODES

Id	Name	Cost centre	Job	Fund	Account
1	Some account	AAA	156	Y	SUP

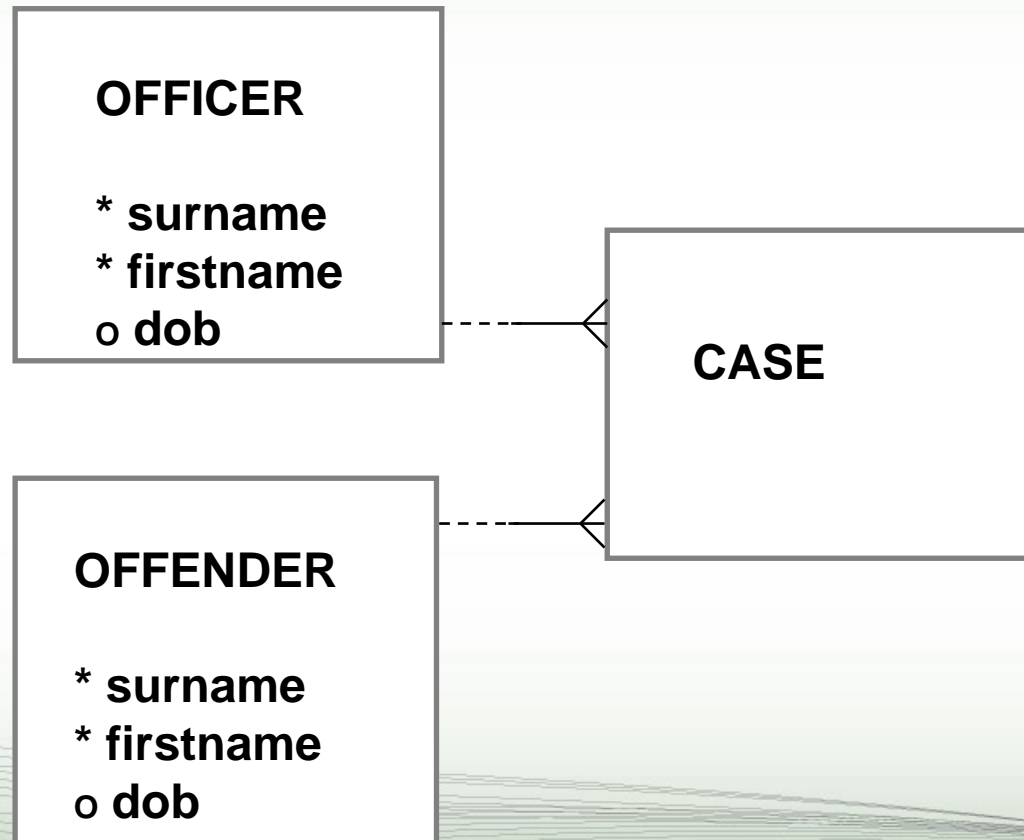
Data Models



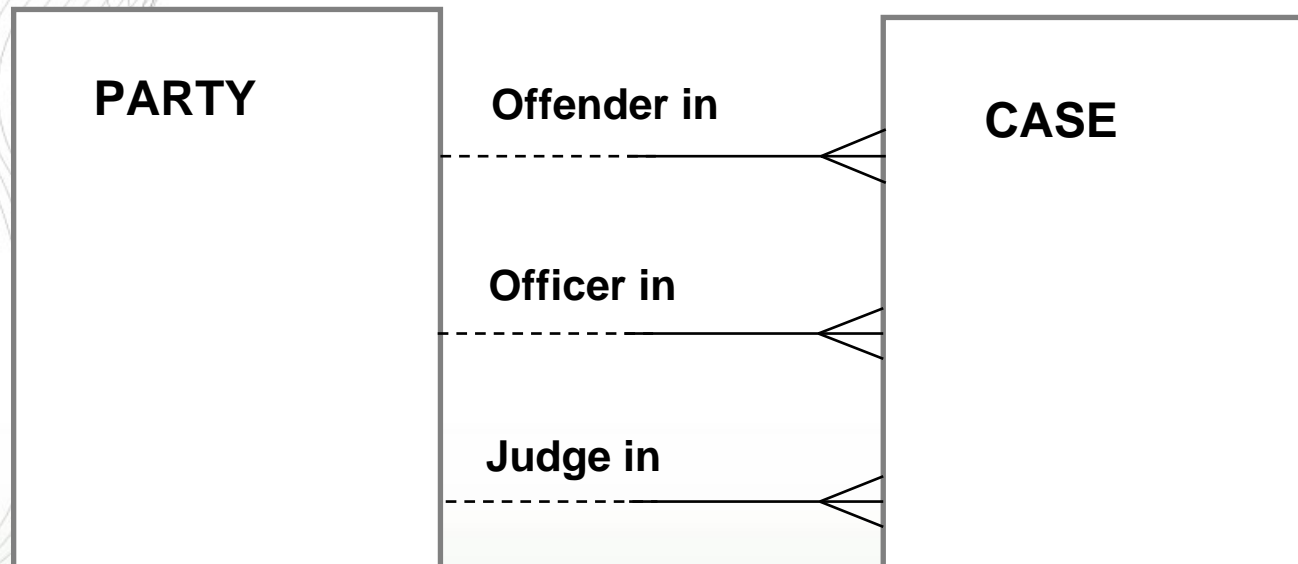
ACCOUNT_CODES

Id	Name	Cost centre	Job	Fund	Account_Div
1	Some account	AAA	156	Y	SUP_A

Data Models

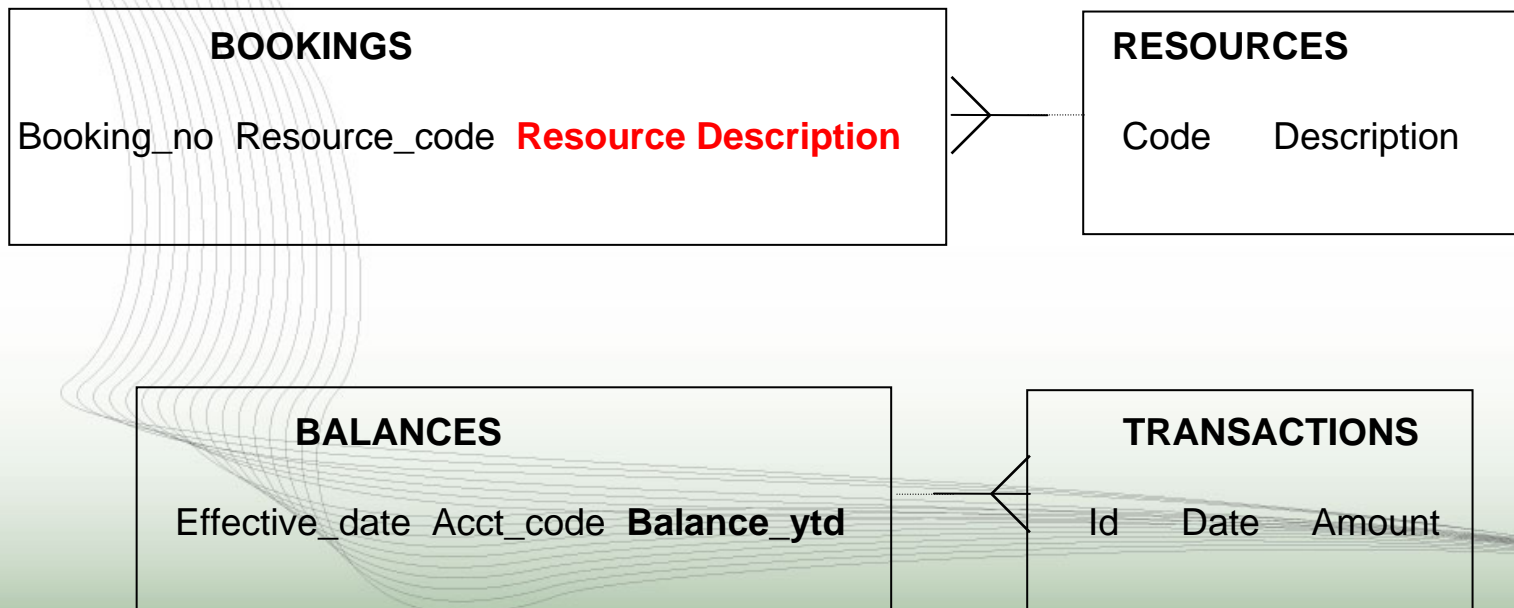


Data Models



Data Models

Only have derived data for performance reasons and manage it carefully



Data Models



PARTIES

Id	Surname	Firstname	dob	Address	Job
1	Jones	Harry	01/04/1957	1 Hay St, Subi	Teacher
2	Smith	Fred	16/03/1979	5 Green St	Plumber
256	Jones	Harry	01/04/1957	1 Hay St, Subi	Teacher

Documentation

We will do the documentation later

**The date on the doco is 01/06/2002 and
the last application release was
3/7/2007, but its probably still OK**

Development



We don't have a formal version control system

Fred makes his changes in notepad and saves his scripts

Harry uses Toad/SQL Developer

Outer Joins

```
SELECT r.code, r.description, b.booking_no, b.status
FROM   resources r, bookings b
WHERE  r.code = b.resource_code (+)
ORDER BY r.code, b.booking_no
```

CODE	DESCRIPTION	BOOKING_NO	S
BRLG	Large board Room	1314	C
BRSM	Small board Room		
CONF	Conference Centre	1311	C
FLPC	Flip chart		
LNCH	Buffet Lunch	1312	R
PC1	Desktop PC	1313	P
TAP1	Tape recorder 29553002		
VCR1	Video recorder No 02378	1291	P
VCR1	Video recorder No 02378	1310	C
VCR2	Video recorder No 08152		

10 rows selected.

Outer Joins

```
SELECT r.code, r.description, b.booking_no, b.status
FROM   resources r, bookings b
WHERE  r.code = b.resource_code (+)
AND    b.status = 'C'
ORDER BY r.code, b.booking_no
```

CODE	DESCRIPTION	BOOKING_NO	S
-----	-----	-----	-
BRLG	Large board Room	1314	C
CONF	Conference Centre	1311	C
VCR1	Video recorder No 02378	1310	C

3 rows selected..

Outer Joins

```
SELECT r.code, r.description, b.booking_no, b.status
FROM   resources r, bookings b
WHERE  r.code = b.resource_code (+)
AND    b.status (+) = 'C'
ORDER BY r.code, b.booking_no
```

CODE	DESCRIPTION	BOOKING_NO	S
----	-----	-----	-
BRLG	Large board Room	1314	C
BRSM	Small board Room		
CONF	Conference Centre	1311	C
FLPC	Flip chart		
LNCH	Buffet Lunch		
PC1	Desktop PC		
TAP1	Tape recorder 29553002		
VCR1	Video recorder No 02378	1310	C
VCR2	Video recorder No 08152		

9 rows selected.

Outer Joins

```
SELECT r.code, r.description, b.booking_no, b.status
FROM   resources r, bookings b
WHERE  r.code = b.resource_code (+)
AND    NVL(b.status, 'C') = 'C'
ORDER BY r.code, b.booking_no
```

CODE	DESCRIPTION	BOOKING_NO	S
----	-----	-----	-
BRLG	Large board Room	1314	C
BRSM	Small board Room		
CONF	Conference Centre	1311	C
FLPC	Flip chart		
TAP1	Tape recorder 29553002		
VCR1	Video recorder No 02378	1310	C
VCR2	Video recorder No 08152		
7 rows selected.			

Outer Joins

```
SELECT r.code, r.description, b.booking_no, b.status
FROM   resources r, bookings b
WHERE  r.code = b.resource_code (+)
AND   b.status (+) IN ('C','P')
ORDER BY r.code, b.booking_no
```

ERROR at line 4:

```
ORA-01719: outer join operator (+) not allowed in operand of
OR or IN
```

Outer Joins

```
SELECT r.code, r.description, b.booking_no, b.status
FROM   resources r
       LEFT OUTER JOIN bookings b ON
       r.code = b.resource_code
WHERE  b.status IN ('C','P')
ORDER BY r.code, b.booking_no
```

CODE	DESCRIPTION	BOOKING_NO	S
----	-----	-----	-
BRLG	Large board Room	1314	C
CONF	Conference Centre	1311	C
PC1	Desktop PC	1313	P
VCR1	Video recorder No 02378	1291	P
VCR1	Video recorder No 02378	1310	C

5 rows selected.

Outer Joins

```
SELECT r.code, r.description, b.booking_no, b.status
FROM   resources r
       LEFT OUTER JOIN bookings b ON
       r.code = b.resource_code AND b.status IN ('C','P')
ORDER BY r.code, b.booking_no
```

CODE	DESCRIPTION	BOOKING_NO	S
----	-----	-----	-
BRLG	Large board Room	1314	C
BRSM	Small board Room		
CONF	Conference Centre	1311	C
FLPC	Flip chart		
LNCH	Buffet Lunch		
PC1	Desktop PC	1313	P
TAP1	Tape recorder 29553002		
VCR1	Video recorder No 02378	1291	P
VCR1	Video recorder No 02378	1310	C
VCR2	Video recorder No 08152		

10 rows selected.

Nulls

```
SELECT org_id, name, state  
FROM organisations  
WHERE state != 'WA'
```

ORG_ID	NAME	STA
2264	Australian Medical Systems	VIC
3210	Conservation Society	NSW
3214	Forests Division	NSW
3216	Rivers Division	NSW
3842	Institute of Business Services	NSW
3843	Marketing Services	NSW
3844	Financial Services	NSW

7 rows selected.

Nulls

```
SELECT org_id, name, state  
FROM organisations  
WHERE state = 'WA'
```

ORG_ID	NAME	STA
1000	Sage Professional Services	WA
1010	Consulting Services	WA
4394	Newface cosmetics	WA

3 rows selected.

Nulls

```
SELECT count(org_id)  
FROM organisations
```

```
COUNT (ORG_ID)
```

```
-----
```

```
12
```

Nulls

```
SELECT org_id, name, state
FROM organisations
WHERE NVL(state,'Z') != 'WA'
```

ORG_ID	NAME	STA
1030	Database Administration	
1040	Systems Development	
2264	Australian Medical Systems	VIC
3210	Conservation Society	NSW
3214	Forests Division	NSW
3216	Rivers Division	NSW
3842	Institute of Business Services	NSW
3843	Marketing Services	NSW
3844	Financial Services	NSW

9 rows selected.

Nulls

```
SELECT org_id, name, state
FROM organisations
WHERE LNNVL(state = 'WA')
```

ORG_ID	NAME	STA
1030	Database Administration	
1040	Systems Development	
2264	Australian Medical Systems	VIC
3210	Conservation Society	NSW
3214	Forests Division	NSW
3216	Rivers Division	NSW
3842	Institute of Business Services	NSW
3843	Marketing Services	NSW
3844	Financial Services	NSW

9 rows selected.

UNION

```
SELECT org_id, name, state, abn  
FROM organisations  
UNION  
SELECT per_id, surname||', '||firstname name,  
state, to_char(dob,'dd/mm/yyyy')  
FROM people
```

Dates

```
SELECT COUNT(event_no)  
FROM events  
WHERE start_date BETWEEN '01-JAN-1995  
AND '31-DEC-1995'
```

```
COUNT ( EVENT_NO )
```

```
-----
```

```
3
```

Dates

```
SELECT COUNT(event_no)
FROM events
WHERE start_date >= '01-JAN-1995'
AND    start_date < '01-JAN-1996'
```

```
COUNT ( EVENT_NO )
```

```
-----
```

```
4
```

Thinking in Rows

```
h2.sql - Notepad
File Edit Format View Help

DECLARE

CURSOR c_bk IS
SELECT booking_no, cost FROM bookings_large FOR UPDATE NOWAIT;

CURSOR c_bk_new (p_booking_no booking_large_new.booking_no%TYPE) IS
SELECT cost FROM booking_large_new WHERE booking_no = p_booking_no;

v_cost booking_large_new.cost%TYPE;
v_new_cost booking_large_new.cost%TYPE;

BEGIN

FOR r_bk IN c_bk LOOP
OPEN c_bk_new (r_bk.booking_no);
FETCH c_bk_new INTO v_cost;
CLOSE c_bk_new;

IF r_bk.cost = v_cost THEN
DELETE FROM bookings_large
WHERE current of c_bk;
ELSIF r_bk.cost >= v_cost THEN
v_new_cost := r_bk.cost*1.1;
ELSE
v_new_cost := v_cost;
END IF;

UPDATE bookings_large SET cost = v_new_cost WHERE current of c_bk;

END LOOP;
|
END;
```


Thinking in Rows

h1.sql - Notepad

File Edit Format View Help

```
DELETE
FROM bookings_large b
WHERE EXISTS
(SELECT null
FROM booking_large_new n
WHERE b.booking_no = n.booking_no
AND b.cost = n.cost)
/

UPDATE bookings_large b
SET cost = (SELECT decode(greatest(n.cost, b.cost), b.cost, b.cost*1.1, n.cost)
            FROM booking_large_new n
            WHERE n.booking_no = b.booking_no)
/
```

Thinking in Rows

tracea.lis - WordPad

File Edit View Insert Format Help

OVERALL TOTALS FOR ALL NON-RECURSIVE STATEMENTS

call	count	cpu	elapsed	disk	query	current	rows
Parse	3	0.35	0.37	0	0	0	0
Execute	3	0.81	1.47	4	20362	60309	11265
Fetch	0	0.00	0.00	0	0	0	0
total	6	1.17	1.84	4	20362	60309	11265

Misses in library cache during parse: 3

Elapsed times include waiting on following events:

Event waited on	Times Waited	Max. Wait	Total Waited
SQL*Net message from client	5	59.19	78.44
db file sequential read	4	0.06	0.09
SQL*Net message to client	4	0.00	0.00
log file switch completion	4	0.18	0.32
log buffer space	1	0.13	0.13

OVERALL TOTALS FOR ALL RECURSIVE STATEMENTS

call	count	cpu	elapsed	disk	query	current	rows
Parse	27	0.01	0.00	0	0	0	0
Execute	73	0.21	0.21	0	34	8	8
Fetch	199	0.00	0.01	0	290	0	140
total	299	0.23	0.23	0	324	8	148

For Help, press F1

Thinking in Rows

```

*****

OVERALL TOTALS FOR ALL NON-RECURSIVE STATEMENTS

call      count      cpu      elapsed      disk      query      current      rows
-----
Parse      2          0.20        0.23         0          0           0           0
Execute    3          3.32        3.49         0         464        115356         2
Fetch      0          0.00        0.00         0          0           0           0
-----
total      5          3.53        3.73         0         464        115356         2

Misses in library cache during parse: 1
Misses in library cache during execute: 1

Elapsed times include waiting on following events:
  Event waited on                      Times    Max. Wait    Total Waited
  -----
  SQL*Net message to client              6         0.00         0.00
  SQL*Net message from client             6        35.01        84.05
  log file sync                           2         0.03         0.03

OVERALL TOTALS FOR ALL RECURSIVE STATEMENTS

call      count      cpu      elapsed      disk      query      current      rows
-----
Parse      11          0.00        0.00         0          0           0           0
Execute   23800          4.96        5.18         0        12600        71144       11264
Fetch     22558          0.62        0.63         0       45084          0       22551
-----
total     46369          5.59        5.82         0       57684        71144       33815
  
```



Thinking in Rows

**Consider rewriting cursors as
BULK collects
and row processing as bulk processing
using FORALL**

Excessive Function Use

SELECT

par_id,

par_util.get_dob(par_id),

par_util.get_addres(par_id),

par_util.get_job(par_id)

FROM parties



Hard coded VARCHAR

```
DECLARE
```

```
  v_name  VARCHAR2(30);
```

```
  v_code  VARCHAR2(4);
```

```
BEGIN
```



Don't Use (unless you have a good reason)

- **authid current_user**
- **Update table Set row**
- **Dynamic sql**
- **Literals**

```
v_sql := 'select code, description from resources  
where daily_rate = '||v_rate;
```

```
v_sql := 'select code, description from resources  
where daily_rate = v_rate';
```
- **Brand new versions of Oracle**

Forms



TODAY

Events

Event No

EVENT_NO

Organisation

ORG_ID

ORG_NAME

Description

DESCRIPTION

Contact Name

CONTACT_NAME

☐ Order By Date
☐ Order By Org Id

Start Date

START_DATE

End Date

END_DATE

Days

TION

Attendees

NUM_ATTENDI

Comments

COMMENTS

Bookings

Booking No	Resource	Description	Charge	Made By	Qty	Cost	Status
BOOKING_NO	RESOURC	RESOURCE_DESC	<input checked="" type="checkbox"/>	MADE_BY	QUANTITY	COST	STA
BOOKING_NO	RESOURC	RESOURCE_DESC	<input checked="" type="checkbox"/>	MADE_BY	QUANTITY	COST	STA
BOOKING_NO	RESOURC	RESOURCE_DESC	<input checked="" type="checkbox"/>	MADE_BY	QUANTITY	COST	STA
BOOKING_NO	RESOURC	RESOURCE_DESC	<input checked="" type="checkbox"/>	MADE_BY	QUANTITY	COST	STA
BOOKING_NO	RESOURC	RESOURCE_DESC	<input checked="" type="checkbox"/>	MADE_BY	QUANTITY	COST	STA
BOOKING_NO	RESOURC	RESOURCE_DESC	<input checked="" type="checkbox"/>	MADE_BY	QUANTITY	COST	STA
BOOKING_NO	RESOURC	RESOURCE_DESC	<input checked="" type="checkbox"/>	MADE_BY	QUANTITY	COST	STA

Multi record
block with
look up
information





Object Navigator

BOOK

Find:

- Alerts
- Attached Libraries
- Data Blocks
 - EVENTS
 - Triggers
 - KEY-DELREC
 - PRE-QUERY
 - PRE-DELETE
 - ON-POPULATE-DETAILS
 - WHEN-VALIDATE-RECORD
 - Items
 - Relations
- BOOK
 - Triggers
 - ON-CHECK-DELETE-MASTER
 - POST-QUERY
 - PRE-INSERT
 - ON-POPULATE-DETAILS
 - KEY-UP
 - Items
 - BUT_LIST_RES
 - RESOURCE_DESC
 - BOOKING_NO
 - RESOURCE_CODE
 - ☒ CHARGEABLE
 - MADE_BY
 - QUANTITY
 - COST
 - STATUS
 - EVENT_NO
 - Relations
 - RES_BOOK
 - CONTROL

Property Palette

Data Block: BOOK

Query Data Source Type	Table
Query Data Source Name	BOOKINGS_LARGE
Query Data Source Columns	

Help

PL/SQL Editor

Name: POST-QUERY

Type: Trigger Object: BOOK (Data Block Level)

```
DECLARE
    alert_response    number;
BEGIN
    SELECT  description
    INTO    :book.resource_desc
    FROM    resources
    WHERE   code = :book.resource_code;
EXCEPTION
    WHEN NO_DATA_FOUND THEN
        SET_ALERT_PROPERTY('STOP_ALERT', ALERT_MESSAGE_TEXT,
            'Invalid Resource Code');
        alert_response := show_alert('STOP_ALERT');
        RAISE FORM_TRIGGER_FAILURE;
    WHEN OTHERS THEN
        MESSAGE(sqlerrm);
        RAISE FORM_TRIGGER_FAILURE;
END;
```

Modified Not Compiled



Object Navigator

BOOK Find:

- BOOKINGS
 - Triggers
 - ON-CLEAR-DETAILS
 - WHEN-NEW-FORM-INSTANCE
 - PRE-FORM
 - WHEN-TIMER-EXPIRED
 - WHEN-FORM-NAVIGATE
 - Alerts
 - Attached Libraries
 - Data Blocks
 - EVENTS
 - BOOK
 - Triggers
 - ON-CHECK-DELETE-MASTER
 - PRE-INSERT
 - ON-POPULATE-DETAILS
 - KEY-UP
 - Items
 - BUT_LIST_RES
 - RESOURCE_DESC
 - BOOKING_NO
 - RESOURCE_CODE
 - CHARGEABLE
 - MADE_BY
 - QUANTITY
 - COST
 - STATUS
 - EVENT_NO
 - Relations
 - RES_BOOK
 - CONTROL
 - Triggers
 - Items

Property Palette

Find:

Data Block: BOOK

Query Data Source Type	FROM clause query
Query Data Source Name	ookings_large b, resources r where b.resource_code = r.code ...
Query Data Source Columns	
Query Data Source Arguments	

Property 6381 Hint

Query Data Source Name

```
SELECT r.description, b.booking_no, b.resource_code, b.chargeable,
b.made_by, b.quantity, b.cost, b.status, b.event_no
from bookings_large b, resources r
where b.resource_code = r.code
```

OK Cancel



Forms

trace1.lis - WordPad

File Edit View Insert Format Help

OVERALL TOTALS FOR ALL NON-RECURSIVE STATEMENTS

call	count	cpu	elapsed	disk	query	current	rows
Parse	5	0.00	0.00	0	0	0	0
Execute	24	0.17	0.15	0	0	0	0
Fetch	23	0.00	0.01	0	50	0	44
total	52	0.17	0.17	0	50	0	44

Misses in library cache during parse: 0

Elapsed times include waiting on following events:

Event waited on	Times Waited	Max. Wait	Total Waited
SQL*Net message to client	27	0.00	0.00
SQL*Net message from client	27	2.06	2.99
SQL*Net more data to client	1	0.00	0.00

For Help, press F1

Post Query trigger

From Clause Query

trace0.lis - WordPad

File Edit View Insert Format Help

OVERALL TOTALS FOR ALL NON-RECURSIVE STATEMENTS

call	count	cpu	elapsed	disk	query	current	rows
Parse	4	0.00	0.00	0	0	0	0
Execute	4	0.03	0.02	0	0	0	0
Fetch	3	0.00	0.00	0	12	0	24
total	11	0.03	0.02	0	12	0	24

Misses in library cache during parse: 1
Misses in library cache during execute: 1

Elapsed times include waiting on following events:

Event waited on	Times Waited	Max. Wait	Total Waited
SQL*Net message to client	6	0.00	0.00
SQL*Net message from client	6	1.68	2.48

For Help, press F1



Object Navigator

KEY-COMMIT Find:

- Forms
 - BOOKINGS
 - Triggers
 - ON-CLEAR-DETAILS
 - WHEN-NEW-FORM-INSTANCE
 - PRE-FORM
 - WHEN-TIMER-EXPIRED
 - WHEN-FORM-NAVIGATE
 - KEY-COMMIT**
 - Alerts
 - Attached Libraries
 - Data Blocks
 - EVENTS
 - BOOK
 - Triggers
 - ON-CHECK-DELETE-MASTER
 - PRE-INSERT
 - ON-POPULATE-DETAILS
 - KEY-UP
 - Items
 - BUT_LIST_RES
 - RESOURCE_DESC
 - BOOKING_NO
 - RESOURCE_CODE
 - ☒ CHARGEABLE
 - MADE_BY
 - QUANTITY
 - COST
 - STATUS
 - EVENT_NO
 - Relations
 - RES_BOOK
 - CONTROL

PL/SQL Editor

Name: KEY-COMMIT

Type: Trigger Object: (Form Level)

```

BEGIN
  -- do some really important validation here
  -- which won't get fired if the user makes a
  -- change and clicks on the Exit button
END;
    
```

Modified Not Compiled



Object Navigator

Find:

WHEN-BUTTON-PRESSED

- WHEN-TIMER-EXPIRED
- WHEN-FORM-NAVIGATE
- KEY-COMMIT
- Alerts
- Attached Libraries
- Data Blocks
 - EVENTS
 - BOOK
 - Triggers
 - ON-CHECK-DELETE-MASTER
 - PRE-INSERT
 - ON-POPULATE-DETAILS
 - KEY-UP
 - Items
 - BUT_LIST_RES
 - Triggers
 - WHEN-BUTTON-PRESSED
 - RESOURCE_DESC
 - BOOKING_NO
 - RESOURCE_CODE
 - CHARGEABLE
 - MADE_BY
 - QUANTITY
 - COST
 - STATUS
 - EVENT_NO
 - Relations
 - RES_BOOK
 - CONTROL
 - Triggers
 - Items
 - BUT_BOOK
 - RAD_ORDER_BY
 - TODAY

PL/SQL Editor

Name: WHEN-BUTTON-PRESSED

Type: Trigger Object: BOOK BUT_LIST_RES

```

go_item('BOOK.RESOURCE_CODE');
-- even if the navigation doesn't work
-- we will carry on and do the list of values
list_values;
    
```

Modified Not Compiled



Object Navigator

Canvas: CNV_EVENTS Find:

- Alerts
- Attached Libraries
- Data Blocks
 - EVENTS
 - Triggers
 - Items
 - EVENT_NO
 - ORG_ID
 - CONTACT_NAME
 - DESCRIPTION
 - START_DATE
 - END_DATE
 - NUM_ATTENDEES
 - COMMENTS
 - DURATION
 - ORG_NAME
 - Relations
 - BOOK
 - RES_BOOK
 - CONTROL
 - Triggers
 - Items
 - BUT_BOOK
 - RAD_ORDER_BY
 - Triggers
 - Radio Buttons
 - DATE_ORDER
 - ORG_ORDER
 - TODAY
 - Relations
- Canvases
 - CNV_RES_BOOK
 - CNV_EVENTS

BOOKINGS: CNV_EVENTS (EVENTS)

Canvas: CNV_EVENTS Block: EVENTS

Tahoma 8 **B** *I* U

0 16 32 48 64 80 96 112 128 144 160 176 192 208 224 240 256 272 288 304 320 336 352 368 384 400 416 432 448 464

TODAY

Events

Event No Organisation

Description

Contact Name

Start Date End Date Days

Attendees Comments

1x 65.25 183.75



Object Navigator

EVENTS_BOOKINGS Find: []

- Forms
 - BOOKINGS
 - BOOKINGS
 - TAB
 - Triggers
 - ON-CLEAR-DETAILS
 - Alerts
 - Attached Libraries
 - Data Blocks
 - ORGANISATIONS
 - EVENTS
 - Triggers
 - Items
 - Relations
 - EVENTS_BOOKINGS
 - BOOKINGS
 - RESOURCE_TYPES
 - Canvases
 - CANVAS2
 - Tab Pages
 - PAGE3
 - PAGE5
 - PAGE7
 - PAGE9
 - Editors
 - LOVs
 - Object Groups
 - Parameters
 - Popup Menus
 - Program Units
 - Property Classes
 - Record Groups
 - Reports
 - Visual Attributes
 - Windows

TAB: CANVAS2 (ORGANISATIONS)

Canvas: CANVAS2 Block: <Null>

MS Sans Serif 8 B I U

0 16 32 48 64 80 96 112 128 144 160 176 192 208 224 240 256 272 288 304 320 336 352 368 384 400

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

Organisations Events Bookings Resource Types

Org Id Parent Org Id Name

Address1 Internal Telephone

Address2

Address3

State Postcode

Property Palette

Relation: EVENTS_BOOKINGS

Functional	
Detail Data Block	BOOKINGS
Join Condition	BOOKINGS.EVENT_NO = EVENTS
Delete Record Behavior	Isolated
Prevent Masterless Operations	No
Coordination	
Deferred	No
Automatic Query	No
General	

Forms

TAB: CANVAS2 (ORGANISATIONS)

Canvas: **CANVAS2** Block: **ORGANISATIONS**

MS Sans Serif 8 **B I U**

Organisations | Events | Bookings | Resource Types

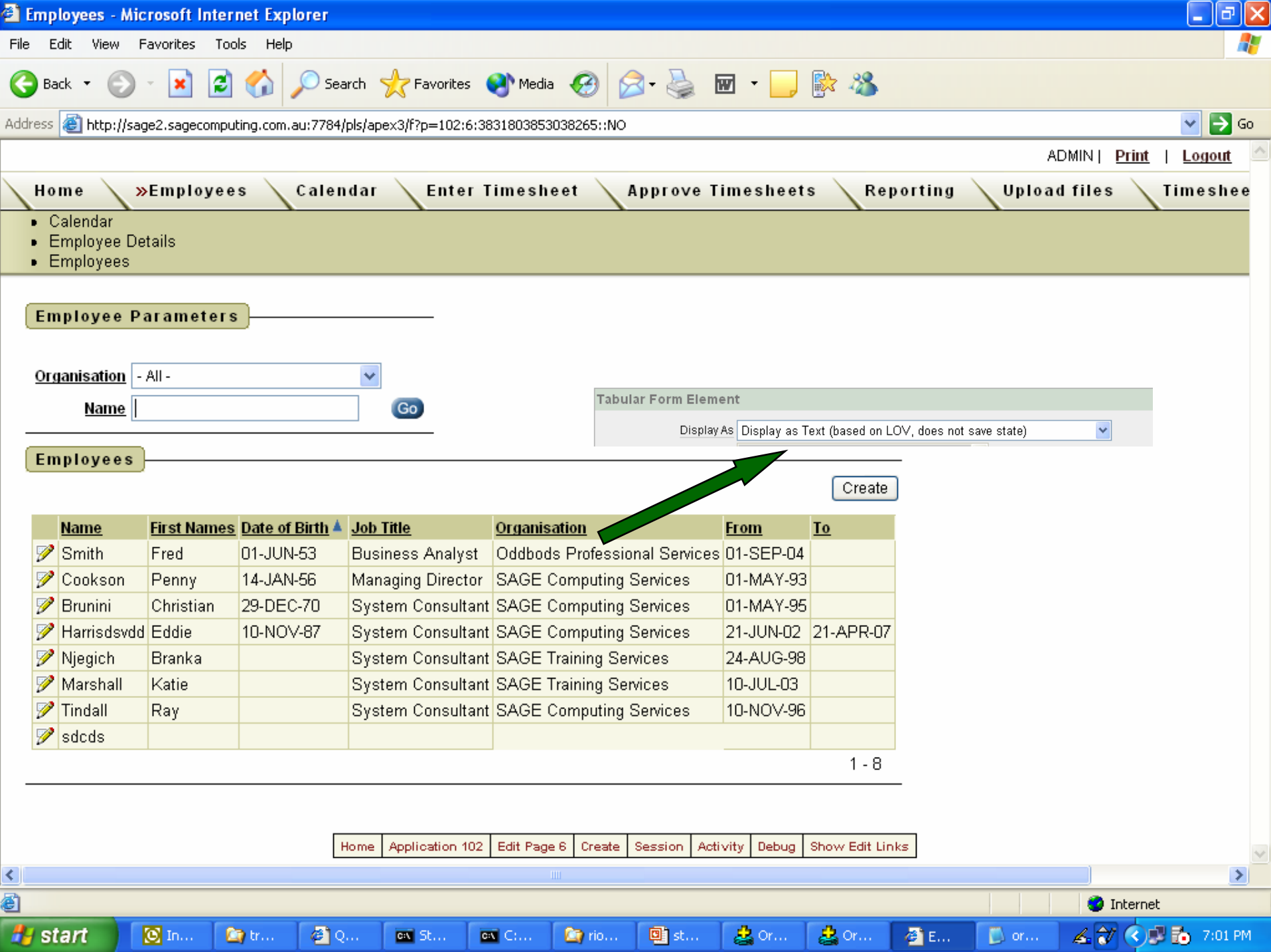
Org Id **ORG_I** Parent Org Id **PAREN** Name **NAME**

Address1 **ADDRESS1** Internal **IN** Telephone **TELEPH**

Address2 **ADDRESS2**

Address3 **ADDRESS3**

State **STA** Postcode **POSTC**





Apex



Session State Protection



Enabling Session State Protection can prevent hackers from tampering with URLs within your application. URL tampering can adversely affect program logic, session state contents, and information privacy.

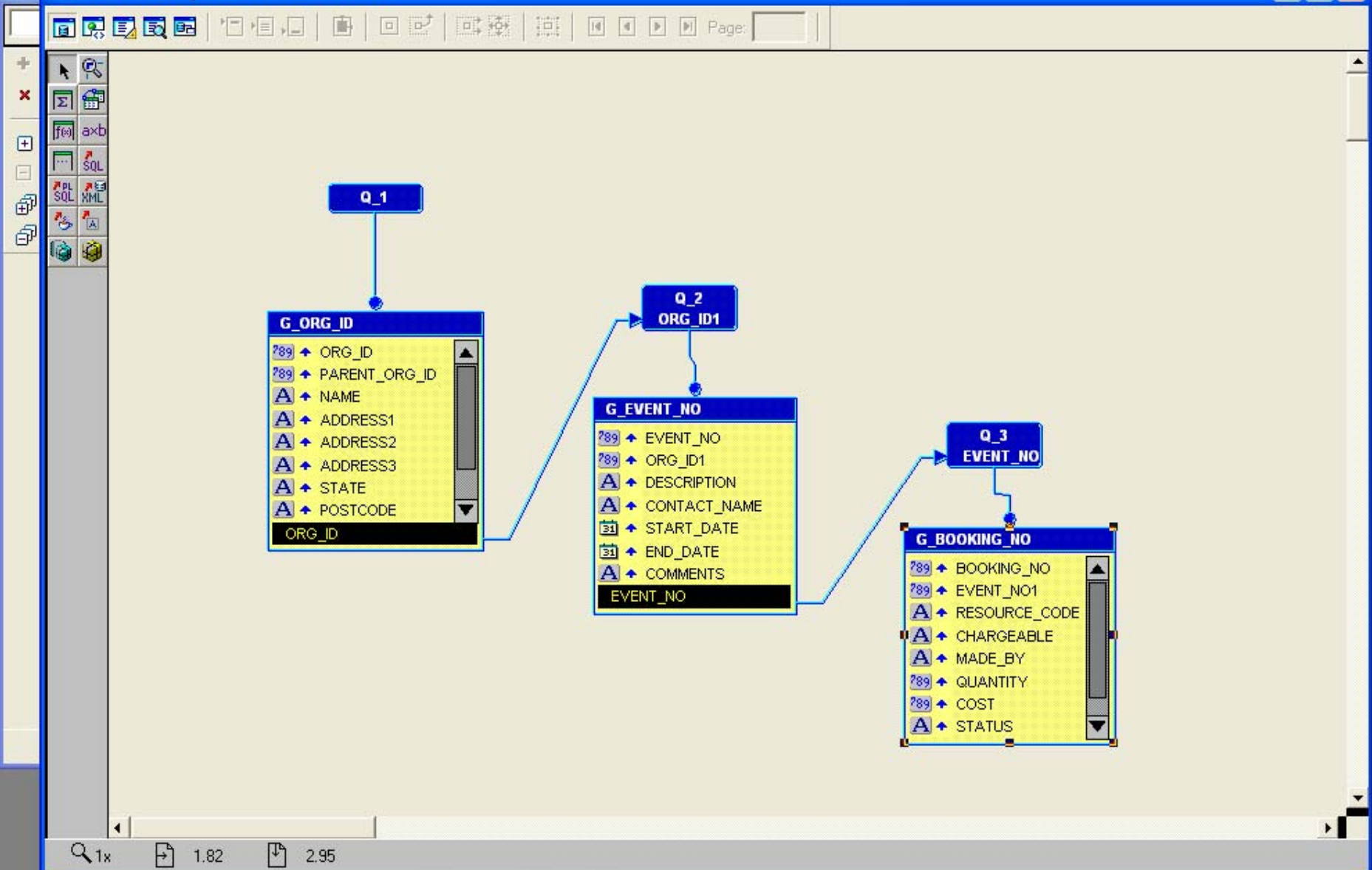
To enable Session State Protection for your application, select **Enabled** from the Session State Protection list. Enabling Session State Protection turns on session state protection controls defined at the page and item level. To configure Session State Protection, click **Manage Session State Protection**.

Session State Protection Disabled ▼

Manage Session State Protection



MODULE3: Report Editor - Data Model



Reports

- **Keep multiple versions**
- **Keep confine on and flex off**
- **A single report can have multiple layouts**
- **A single report can have multiple distributions**



I'll change these three parameters

I'm sure I'll remember what they were before

**I made a change earlier but it had nothing to do
with this problem**

**There is nothing in the alert log so it's not a
database problem**

DBMS_STATS

BEGIN

dbms_stats.gather_schema_stats('TRAIN');

END;

What are the default values for:

CASCADE

DEGREE

METHOD_OPT

NO_INVALIDATE

DBMS_STATS



```
procedure gather_schema_stats
(ownname varchar2,
 estimate_percent number default
  to_estimate_percent_type(get_param('ESTIMATE_PERCENT')),
 block_sample boolean default FALSE,
 method_opt varchar2 default get_param('METHOD_OPT'),
 degree number default to_degree_type(get_param('DEGREE')),
 granularity varchar2 default get_param('GRANULARITY'),
 cascade boolean default to_cascade_type(get_param('CASCADE')),
 statab varchar2 default null, statid varchar2 default null,
 options varchar2 default 'GATHER', statown varchar2 default null,
 no_invalidate boolean default
  to_no_invalidate_type(get_param('NO_INVALIDATE')),
 gather_temp boolean default FALSE,
 gather_fixed boolean default FALSE,
 stattype varchar2 default 'DATA',
 force boolean default FALSE);
```



DBMS_STATS



Version 10g:

```
dbms_stats.set_param('CASCADE','DBMS_STATS.AUTO_CASCADE');  
dbms_stats.set_param('ESTIMATE_PERCENT','5');  
dbms_stats.set_global_prefs('DEGREE','8');
```

Version 11g:

```
dbms_stats.set_global_prefs('CASCADE','DBMS_STATS.AUTO_CASCADE');  
dbms_stats.set_global_prefs('ESTIMATE_PERCENT','5');  
dbms_stats.set_global_prefs('DEGREE','8');
```

or

```
dbms_stats.set_schema_prefs  
dbms_stats.set_schema_prefs  
dbms_stats.set_schema_prefs
```

or

```
dbms_stats.set_table_prefs  
dbms_stats.set_table_prefs  
dbms_stats.set_table_prefs
```


Role Privileges

Using Oracle's built-in roles <10g rel2:

```
SELECT privilege  
FROM role_sys_privs  
WHERE role = 'CONNECT'
```

PRIVILEGE

**CREATE SESSION
CREATE CLUSTER
CREATE DATABASE LINK
CREATE SEQUENCE
ALTER SESSION
CREATE SYNONYM
CREATE TABLE
CREATE VIEW**



Role Privileges

Using Oracle's built-in roles $\geq 10g$ rel2:

```
SELECT privilege  
FROM role_sys_privs  
WHERE role = 'CONNECT'
```

PRIVILEGE

CREATE SESSION

Role Privileges

Using Oracle's built-in roles:

```
SELECT privilege  
FROM role_sys_privs  
WHERE role = 'RESOURCE'
```

```
CREATE SYNONYM?  
CREATE VIEW?  
CREATE DATABASE LINK?
```

```
PRIVILEGE  
-----  
CREATE SEQUENCE  
CREATE TRIGGER  
CREATE CLUSTER  
CREATE PROCEDURE  
CREATE TYPE  
CREATE OPERATOR  
CREATE TABLE  
CREATE INDEXTYPE
```



Role Privileges

Using Oracle's built-in roles:

```
CREATE USER test1  
IDENTIFIED BY test1;
```

```
GRANT connect,  
resource  
TO test1;
```

```
SELECT privilege  
FROM dba_sys_privs  
WHERE  
privilege like 'UNLIM%'  
AND grantee = 'TEST1'
```

```
PRIVILEGE
```

```
-----
```

```
UNLIMITED TABLESPACE
```



Explain Plan

**Explain needs exactly the same values
for:**

Values in V\$SES_OPTIMIZER_ENV

Statistics

Bind variables

Explain Plan

BEGIN

```
dbms_stats.gather_table_stats(ownname=> USER,  
tabname=>'BOOKINGS_LARGE',cascade=>TRUE,  
method_opt =>'FOR ALL COLUMNS SIZE AUTO');  
END;
```

```
SELECT column_name, histogram  
FROM user_tab_columns  
WHERE table_name =  
'BOOKINGS_LARGE'  
AND column_name =  
'RESOURCE_CODE'
```

HISTOGRAM

FREQUENCY



Explain Plan

**EXPLAIN PLAN
FOR
SELECT *
FROM bookings_large
WHERE resource_code = 'PC1'**

Id	Operation	Name	Rows	Bytes	Cost (%CPU)	Time	

0	SELECT STATEMENT		240	8880	8 (0)	00:00:01	
1	TABLE ACCESS BY INDEX ROWID	BOOKINGS_LARGE	240	8880	8 (0)	00:00:01	
*	INDEX RANGE SCAN	BOOK_RES	240		1 (0)	00:00:01	



Explain Plan

**EXPLAIN PLAN
FOR
SELECT *
FROM bookings_large
WHERE resource_code = 'VCR1'**

Id	Operation	Name	Rows	Bytes	Cost (%CPU)	Time	

0	SELECT STATEMENT		6478	234K	17 (6)	00:00:01	
* 1	TABLE ACCESS FULL	BOOKINGS_LARGE	6478	234K	17 (6)	00:00:01	



Explain Plan



```
ALTER SYSTEM SET cursor_sharing = FORCE;  
--  
BEGIN  
  DBMS_MONITOR.SESSION_TRACE_ENABLE (  
    waits => TRUE, binds => TRUE);  
END;  
--  
SELECT *  
FROM bookings_large f  
WHERE f.resource_code = 'VCR1'  
--  
SELECT *  
FROM bookings_large f  
WHERE f.resource_code = 'PC1'
```



Trace



```
SELECT *
FROM bookings_large h
WHERE h.resource_code = : "SYS_B_0"
```

call	count	cpu	elapsed	disk	query	current	rows
Parse	2	0.00	0.00	0	0	0	0
Execute	2	0.03	0.02	0	0	0	0
Fetch	450	0.09	0.12	0	581	0	6718
total	454	0.12	0.15	0	581	0	6718

Misses in library cache during parse: 1

Optimizer mode: ALL_ROWS

Parsing user id: 65

Rows Row Source Operation

240 TABLE ACCESS FULL BOOKINGS_LARGE (cr=84 pr=0 pw=0 time=1530 us)



Explain Plan

**EXPLAIN PLAN
FOR
SELECT *
FROM bookings_large f
WHERE f.resource_code = 'VCR1'**

Id	Operation	Name	Rows	Bytes	Cost (%CPU)	Time	

0	SELECT STATEMENT		6478	234K	17 (6)	00:00:01	
* 1	TABLE ACCESS FULL	BOOKINGS_LARGE	6478	234K	17 (6)	00:00:01	

Explain Plan

```
EXPLAIN PLAN
FOR
SELECT *
FROM bookings_large f
WHERE f.resource_code = 'PC1'
```

Id	Operation	Name	Rows	Bytes	Cost (%CPU)	Time
0	SELECT STATEMENT		240	8880	8 (0)	00:00:01
1	TABLE ACCESS BY INDEX ROWID	BOOKINGS_LARGE	240	8880	8 (0)	00:00:01
* 2	INDEX RANGE SCAN	BOOK_RES	240		1 (0)	00:00:01



Explain Plan

```
SELECT s.sql_text, o.name, o.value  
FROM v$sql_optimizer_env o, v$sqlarea s  
WHERE name like 'cursor%'  
AND s.sql_id = o.sql_id  
AND s.sql_id = 'f2p3rnbu1z876'
```

SQL_TEXT

NAME

VALUE

```
-----  
EXPLAIN PLAN FOR SELECT * FROM bookings_large f WHERE f.resource_code = 'VCR1'  
cursor_sharing                                force
```



Explain Plan – 10053 trace

EXPLAIN PLAN FOR

SELECT *

FROM bookings_large m

WHERE m.resource_code = :B1

-----+-----						
Id	Operation	Name	Rows	Bytes	Cost	Time
-----+-----						
0	SELECT STATEMENT				17	
1	TABLE ACCESS FULL	BOOKINGS_LARGE	1252	45K	17	00:00:01
-----+-----						

SELECT *

FROM bookings_large w

WHERE w.resource_code = :B1

-----+-----						
Id	Operation	Name	Rows	Bytes	Cost	Time
-----+-----						
0	SELECT STATEMENT				8	
1	TABLE ACCESS BY INDEX ROWID	BOOKINGS_LARGE	240	8880	8	00:00:01
2	INDEX RANGE SCAN	BOOK_RES	240		1	00:00:01
-----+-----						

Predicate Information:

2 - access("W"."RESOURCE_CODE"=:B1)

Peeked Binds

value=PC1

SQLTXPLAIN Report: sqlt_s4109_oral0_sage2_main.html

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- [Tool Configuration](#)
- [SQL Statement](#)
- [Execution Plan](#)
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- [Object Dependency](#)
- [Tables](#)
- [Indexes](#)
- [Table Columns](#)
- [Index Columns](#)
- [Column Histograms](#)
- [Metadata](#)
- [Tablespaces](#)
- [DBMS_STATS Setup](#)
- [Initialization Parameters](#)
- [Optimizer Trace \(EVENT 10053\)](#)

Identification

Statement ID: 4109

Table Owner.Table Name	Index Owner.Index Name	Oper ID	Index Type	Uniqueness	Num Cols	Indexed Columns	Colu
TRAIN.BOOKINGS_LARGE	TRAIN.BOOKLG_COST		NORMAL	NONUNIQUE	1	COST	Colu
TRAIN.BOOKINGS_LARGE	TRAIN.BOOKLG_PK		NORMAL	UNIQUE	1	BOOKING_NO	Colu
TRAIN.BOOKINGS_LARGE	TRAIN.BOOK_RES	3	NORMAL	NONUNIQUE	1	RESOURCE_CODE	Colu

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Table Owner.Table Name	Index Owner.Index Name	Num Rows	Sample Size	Last Analyzed	Distinct Keys
TRAIN.BOOKINGS_LARGE	TRAIN.BOOKLG_COST	11264	11264	31-JUL-07 15:50:12	11264
TRAIN.BOOKINGS_LARGE	TRAIN.BOOKLG_PK	11264	11264	31-JUL-07 15:50:12	11264

SQLTXPLAIN Report:
sqlt_s4109_oral0_sage2_main.h

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- [Index Columns](#)
- [Column Histograms](#)



I don't need to take backups everything is mirrored

I'll take a backup but I'll miss this one data file

I have a great backup and recovery strategy but I've never tested it

I have a database problem, I'll just copy these backup files into place



I'll add a few extra indexes just in case

If the database is performing poorly I'll increase something

I think there is probably enough space for archive logs

I only need three redo logs



DBA



The application owner is HR/HR

The application owner is HR/HR_PROD

The application owner is HR/PENNY

Statistics



My application is performing really well

**Its Friday evening so lets mess all that up
by gathering statistics**

*Change is not made without inconvenience
(Samuel Johnson)*



Record what you do

Keep a log stuffdone_20070730

**Paste your code/comments/changes in it
as you go**



Thank You For Your Attention

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Its only those that do nothing that make no mistakes
(Joseph Conrad)