

D2K / Forms

Lab Book

Document Revision History

Date	Revision No.	Author	Summary of Changes
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Getting Started

Overview

This lab book is a guided tour for learning EAS oracle application. It comprises 'To Do' assignments. Follow the steps provided and work out the 'To Do' assignments.

Setup Checklist for EAS Oracle Application

Here is what is expected on your machine in order for the lab to work.

Minimum System Requirements

- Intel Pentium 90 or higher (P166 recommended)
- Microsoft Windows 95, 98, or NT 4.0, 2k, XP.
- Memory: 32MB of RAM (64MB or more recommended)
- Internet Explorer 6.0 or higher

Instructions

- For all coding standards refer Appendix A. All lab assignments should refer coding standards.
- Create a directory by your name in drive <drive>. In this directory, create a subdirectory <eas orapps>_assgn. For each lab exercise create a directory as lab <lab number>.

Problem Statement / Case Study

Table descriptions and data considered in this lab book:

EMP Table

SQL>DESC EMP

Name	Null?	Type
EMPNO	NOT NULL	NUMBER(4)
ENAME		VARCHAR2(10)
JOB		VARCHAR2(50)
MGR		NUMBER(4)
HIREDATE		DATE
SAL		NUMBER(7,2)
COMM		NUMBER(7,2)
DEPTNO		NUMBER(2)

SQL>SELECT * FROM EMP

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	CLERK	7902	17-DEC-80	800		20
7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
7521	WARD	SALESMAN	7698	22-FEB-81	1250	500	30
7566	JONES	MANAGER	7839	02-APR-81	2975		20
7654	MARTIN	SALESMAN	7698	28-SEP-81	1250	1400	30
7698	BLAKE	MANAGER	7839	01-MAY-81	2850		30
7782	CLARK	MANAGER	7839	09-JUN-81	2450		10
7788	SCOTT	ANALYST	7566	09-DEC-82	3000		20
7839	KING	PRESIDENT		17-NOV-81	5000		10
7844	TURNER	SALESMAN	7698	08-SEP-81	1500	0	30
7876	ADAMS	CLERK	7788	12-JAN-83	1100		20
7900	JAMES	CLERK	7698	03-DEC-81	950		30

7902	FORD	ANALYST	7566	03-DEC-81	3000		20
7934	MILLER	CLERK	7782	23-JAN-82	1300		10

14 rows selected.

DEPT Table

SQL>DESC DEPT

Name	Null?	Type
DEPTNO		NUMBER(2)
DNAME		VARCHAR2(14)
LOC		VARCHAR2(13)

SQL>SELECT * FROM DEPT

DEPTNO	DNAME	LOC
10	ACCOUNTING	NEW YORK
20	RESEARCH	DALLAS
30	SALES	CHICAGO
40	OPERATIONS	BOSTON

SALGRADE Table

SQL>DESC SALGRADE

Name	Null?	Type
GRADE		NUMBER
LOSAL		NUMBER
HISAL		NUMBER

SQL>SELECT * FROM SALGRADE

GRADE	LOSAL	HISAL
1	700	1200
2	1201	1400
3	1401	2000
4	2001	3000
5	3001	9999

BONUS Table

SQL>DESC BONUS

Name	Null?	Type
ENAME		VARCHAR2(10)
JOB		VARCHAR2(9)
SAL		NUMBER
COMM		NUMBER

SQL>SELECT * FROM BONUS

no rows selected

Lab 1. Wizard base form creation

Goals	<ul style="list-style-type: none"> Create a form using wizard.
Time	2.5 hr

1.1: Create a form

The steps in this lab will walk you through the wizard for creating form.

You will have to do the following tasks:

1. Create a using wizard
2. Saving the form
3. Executing the form

Solution:

Step 1: Data block and Layout wizard:

Open form 6i Application, by selecting **Start → Programs → Oracle Forms 6i – OraHome → Form Builder**.

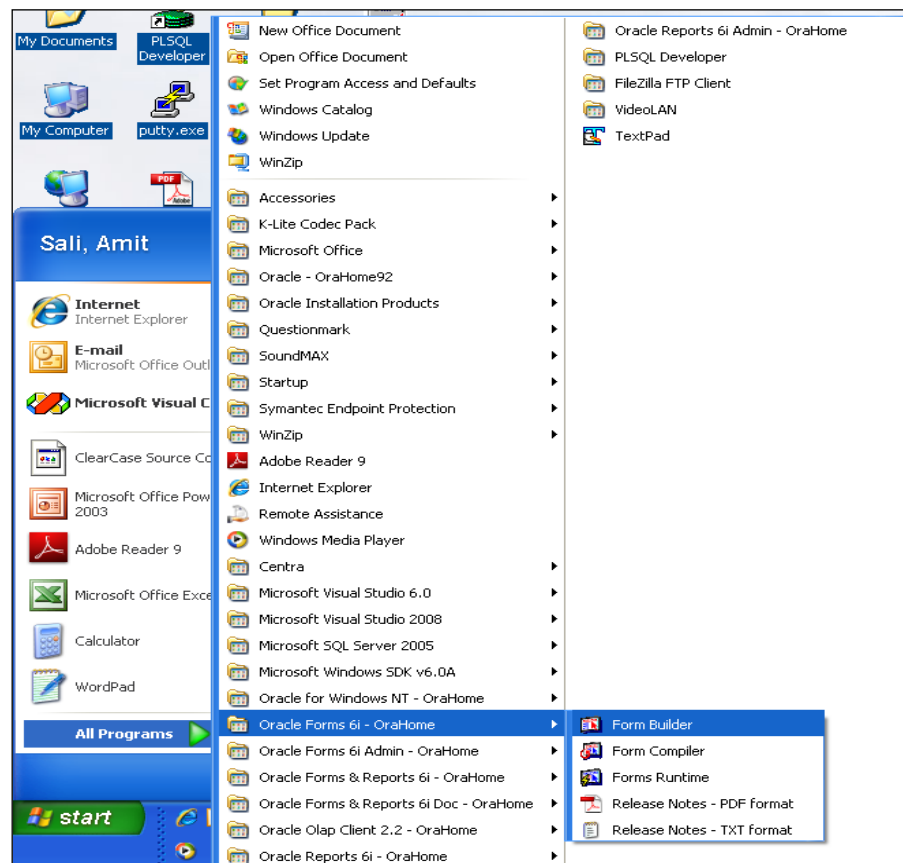


Figure 1: All Programs menu

Step 2: Select Data block wizard and press OK.

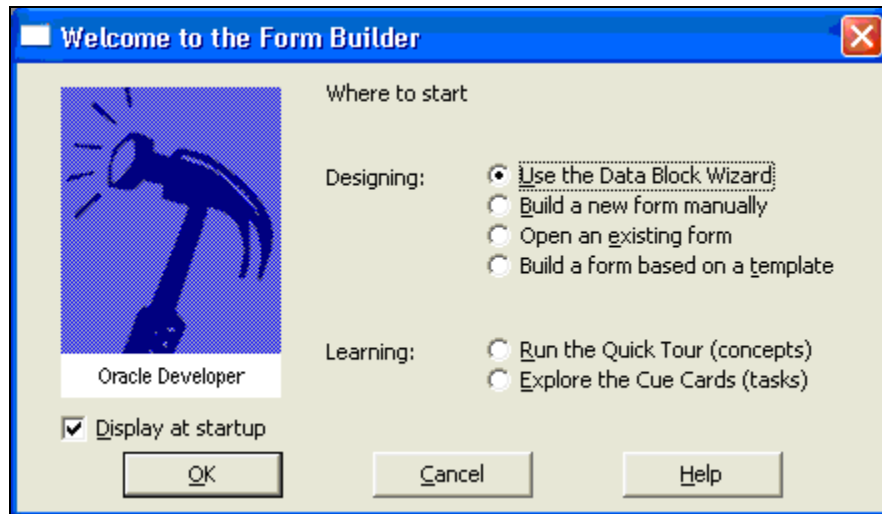


Figure 2: Start of data block wizard

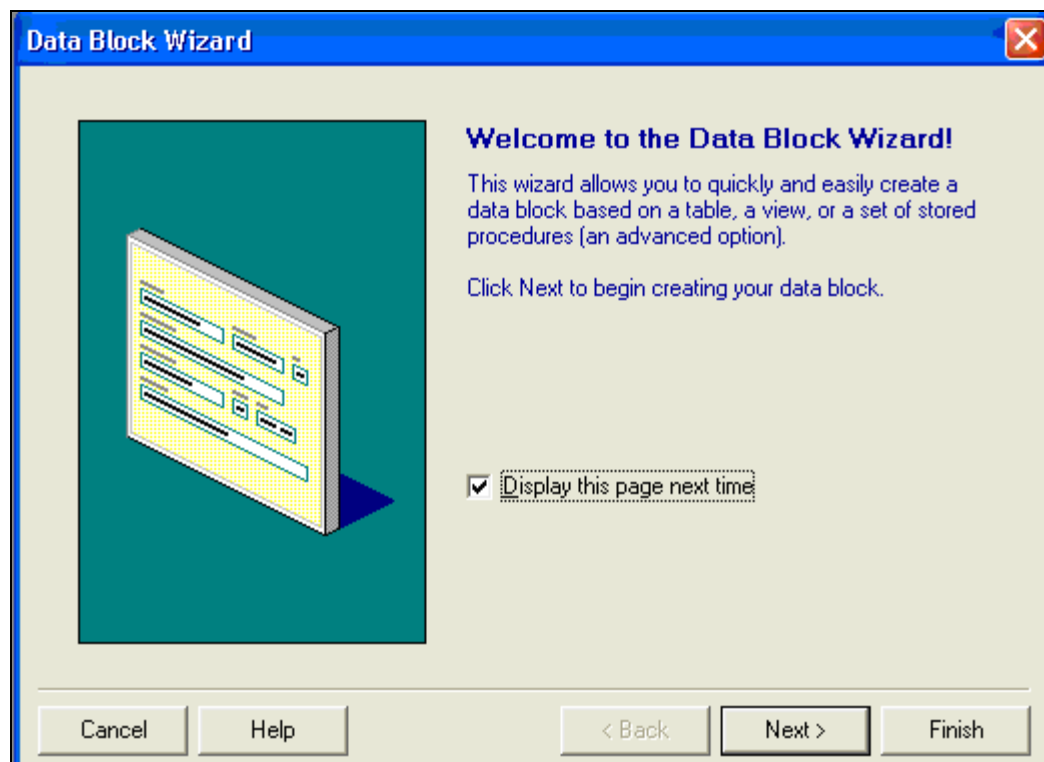


Figure 3: Data block wizard

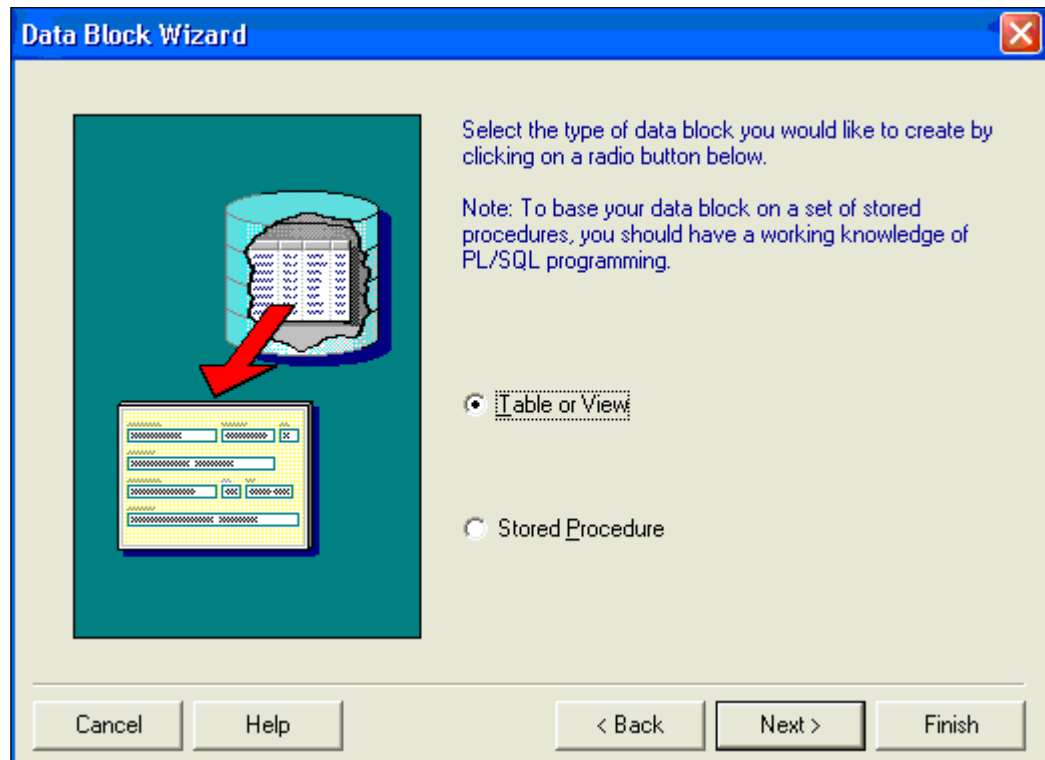


Figure 4: Data block wizard

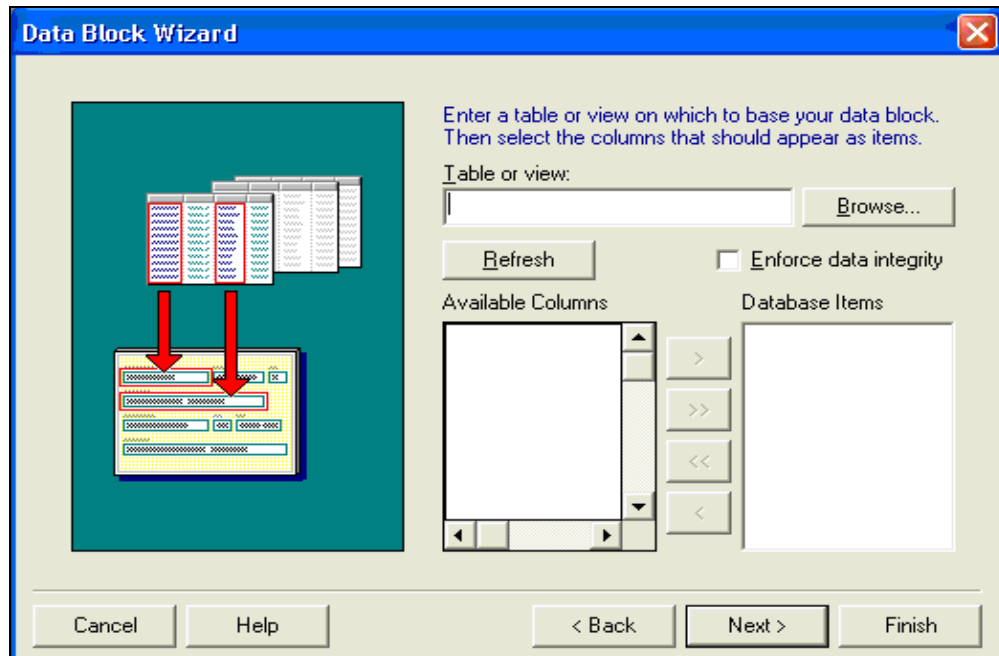


Figure 5: Data block wizard

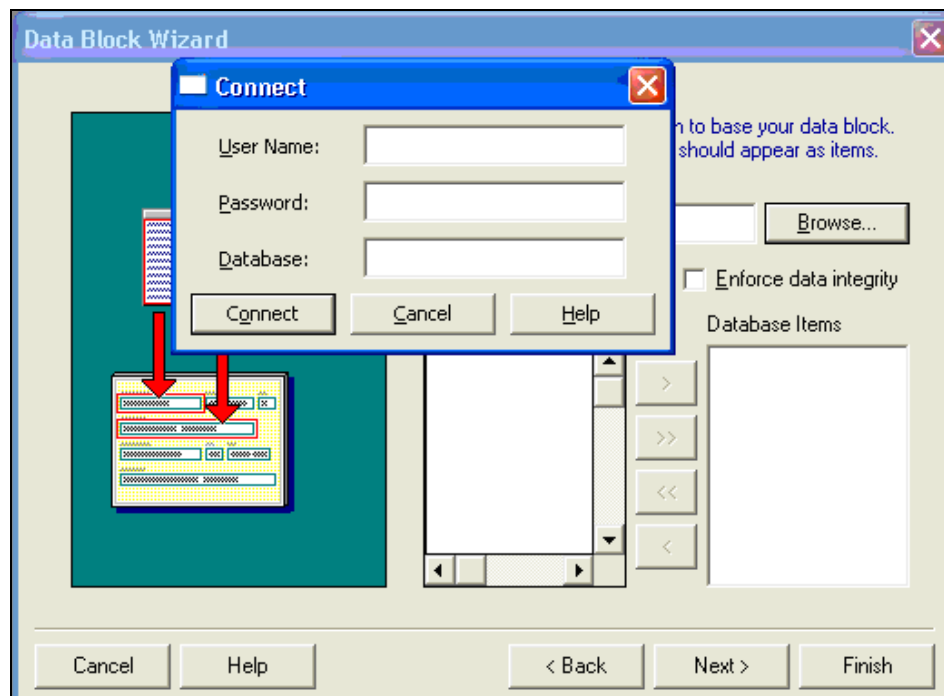


Figure 6: Data block wizard, Database connectivity

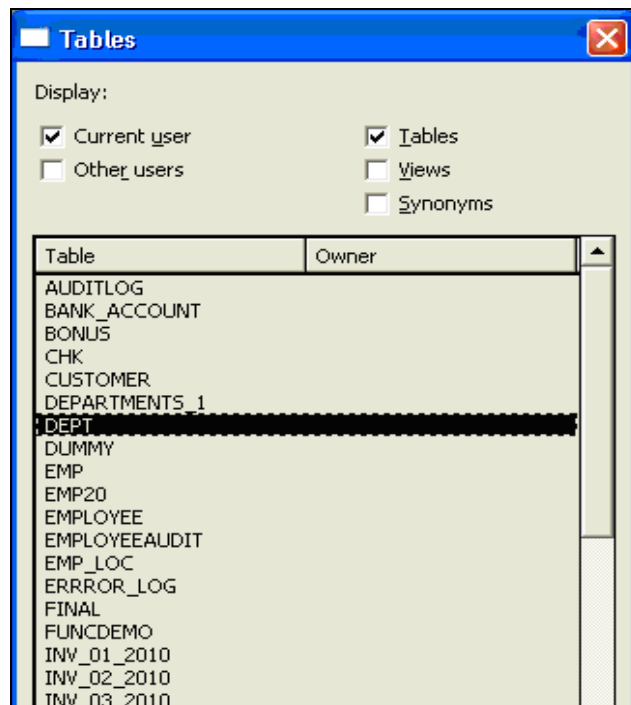


Figure 7: Data block wizard, Table selection

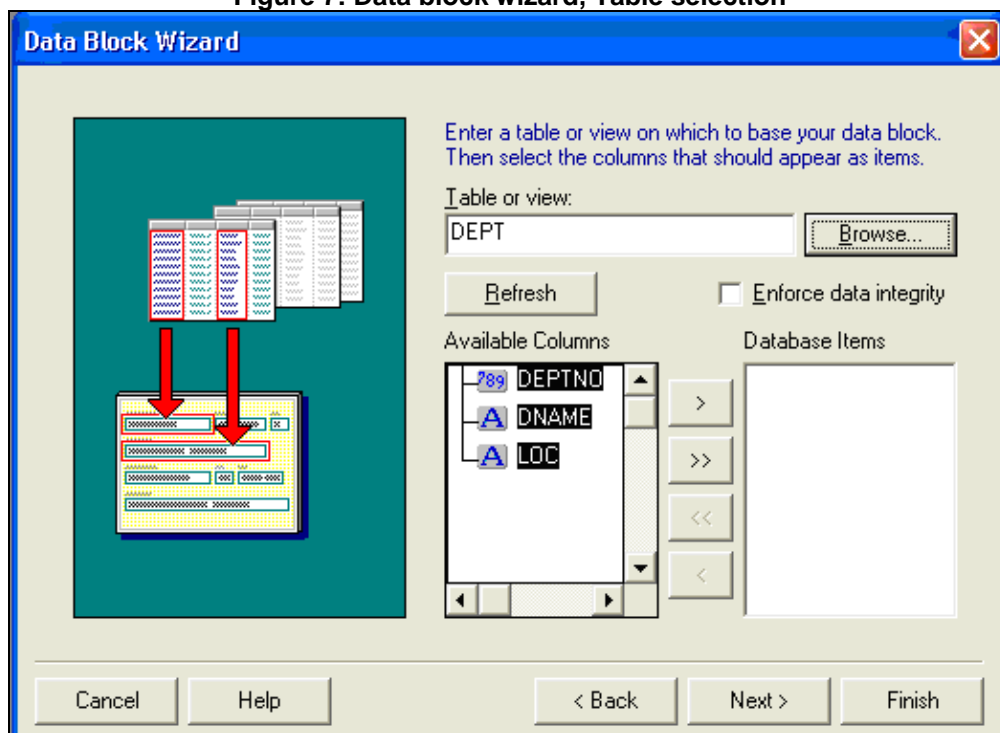


Figure 8: Data block wizard, column selection

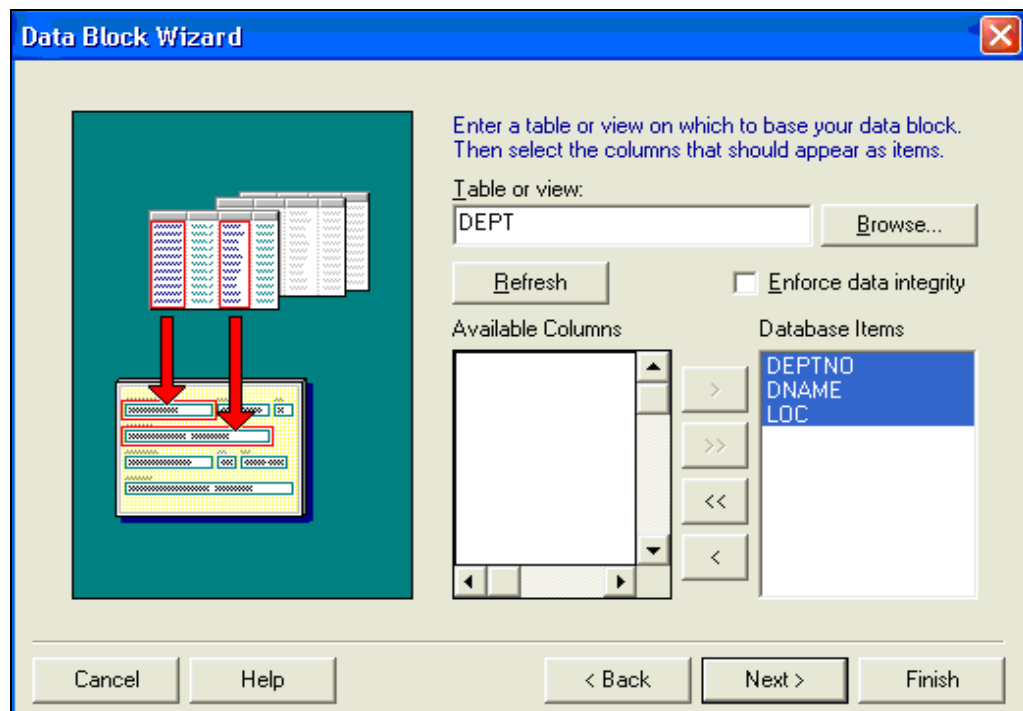


Figure 9: Data block wizard, column selection

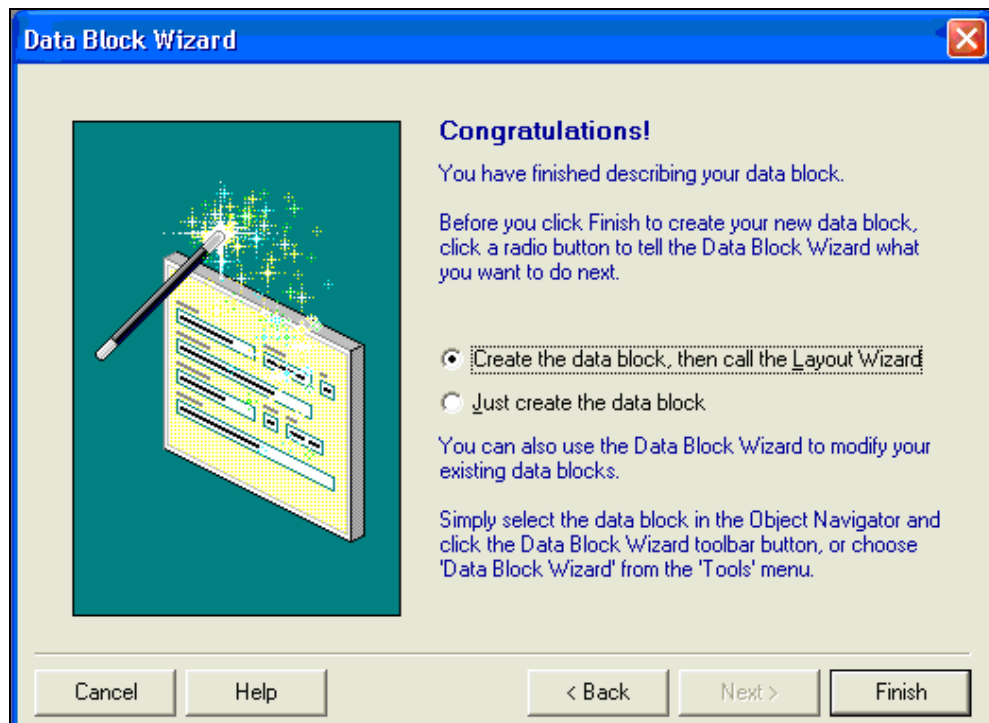


Figure 10: Data block wizard



Figure 11: Layout Wizard

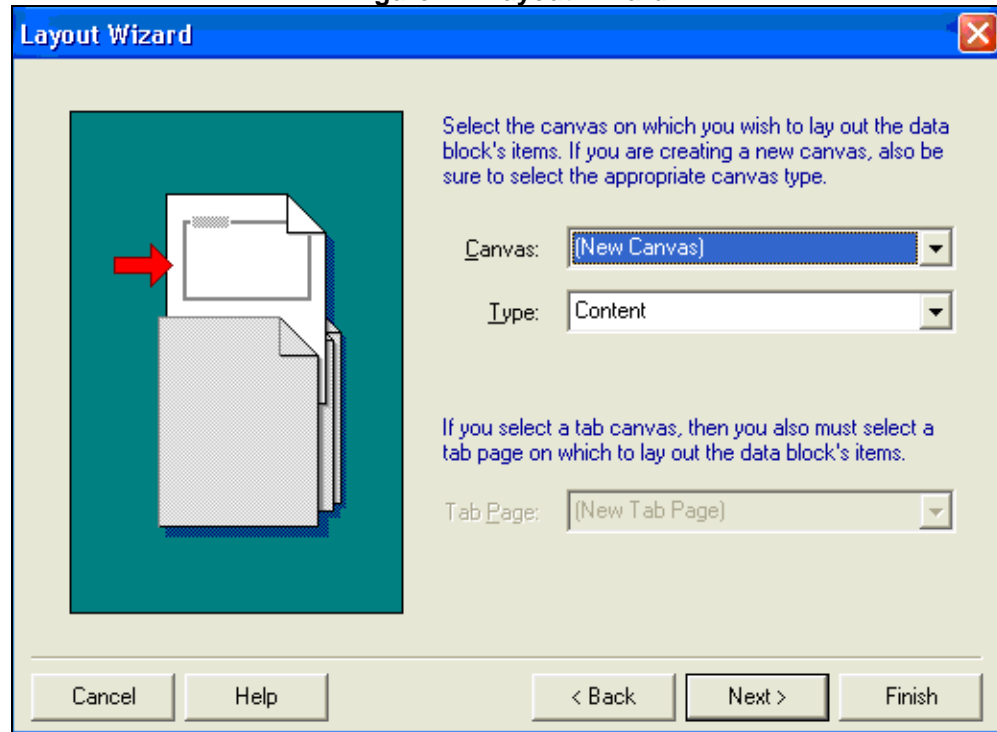


Figure 12: Layout Wizard, canvas type selection

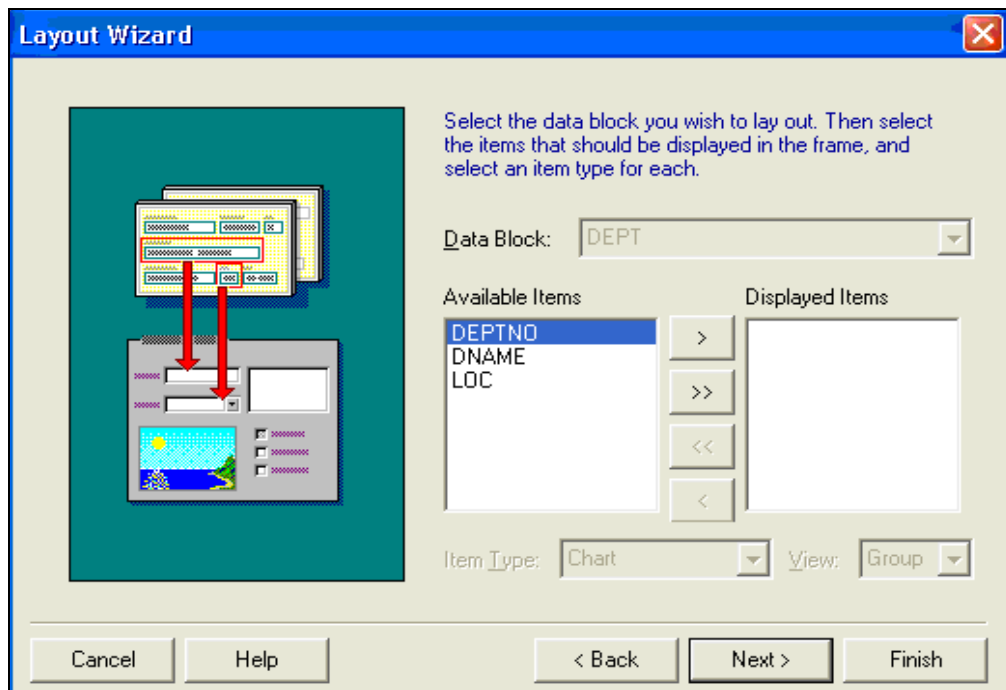


Figure 13: Layout Wizard, column selection

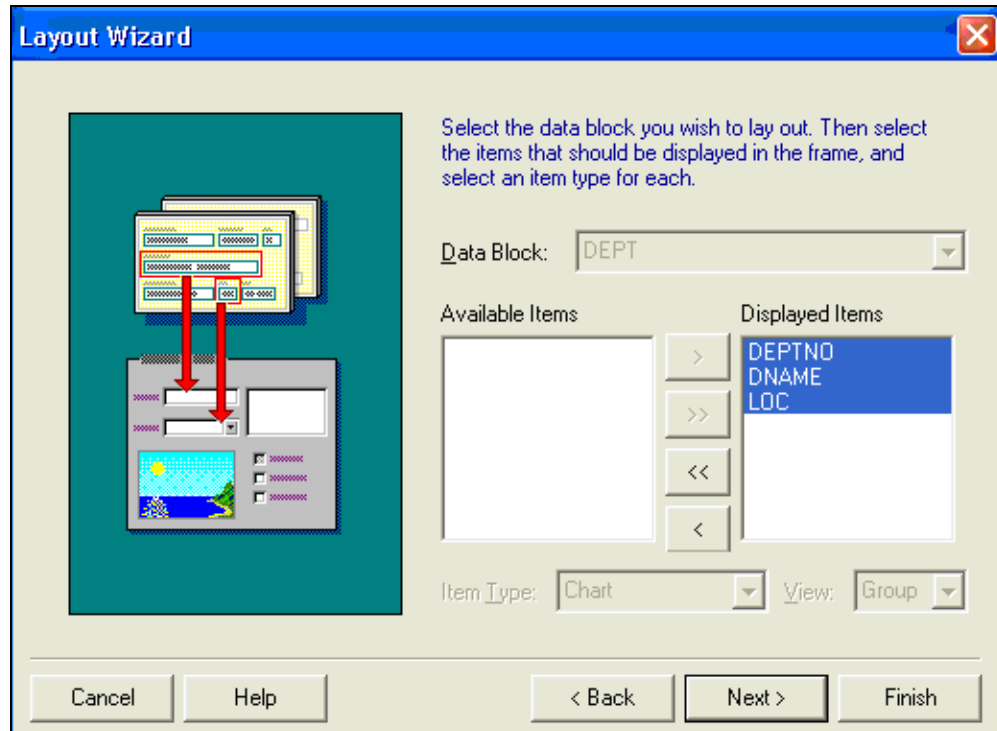
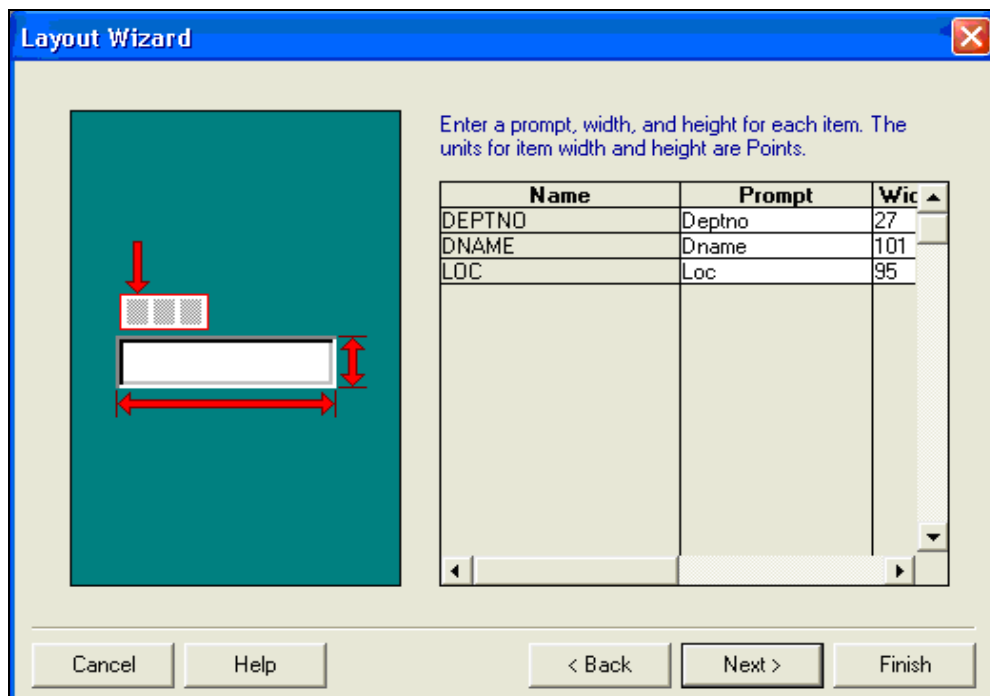


Figure 14: Layout Wizard, column selection

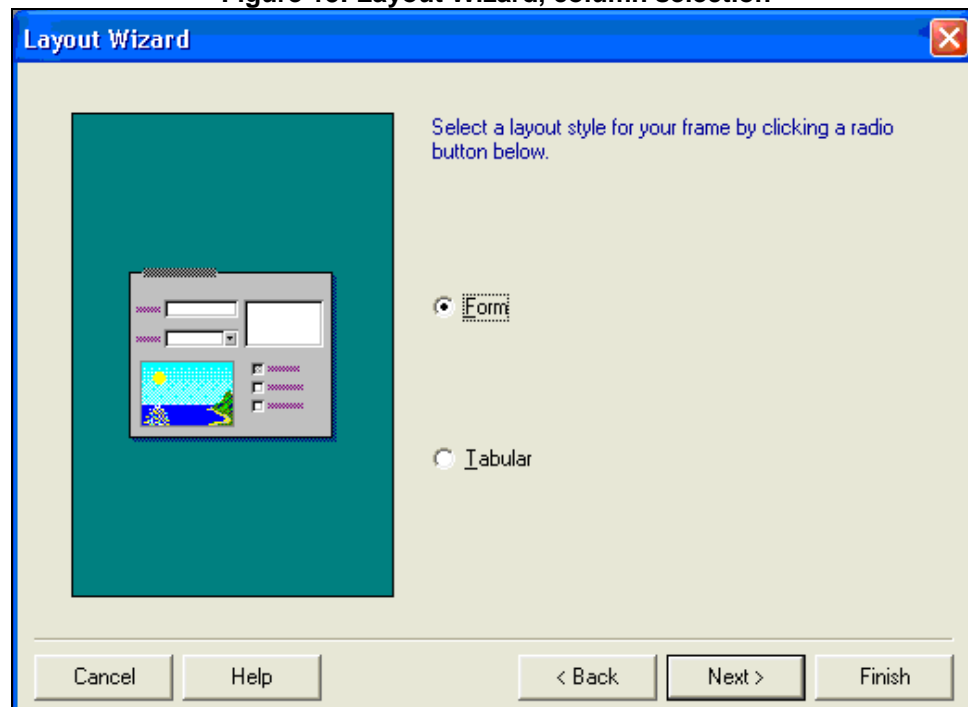


Enter a prompt, width, and height for each item. The units for item width and height are Points.

Name	Prompt	Wic
DEPTNO	Deptno	27
DNAME	Dname	101
LOC	Loc	95

Buttons: Cancel, Help, < Back, **Next >**, Finish

Figure 15: Layout Wizard, column selection



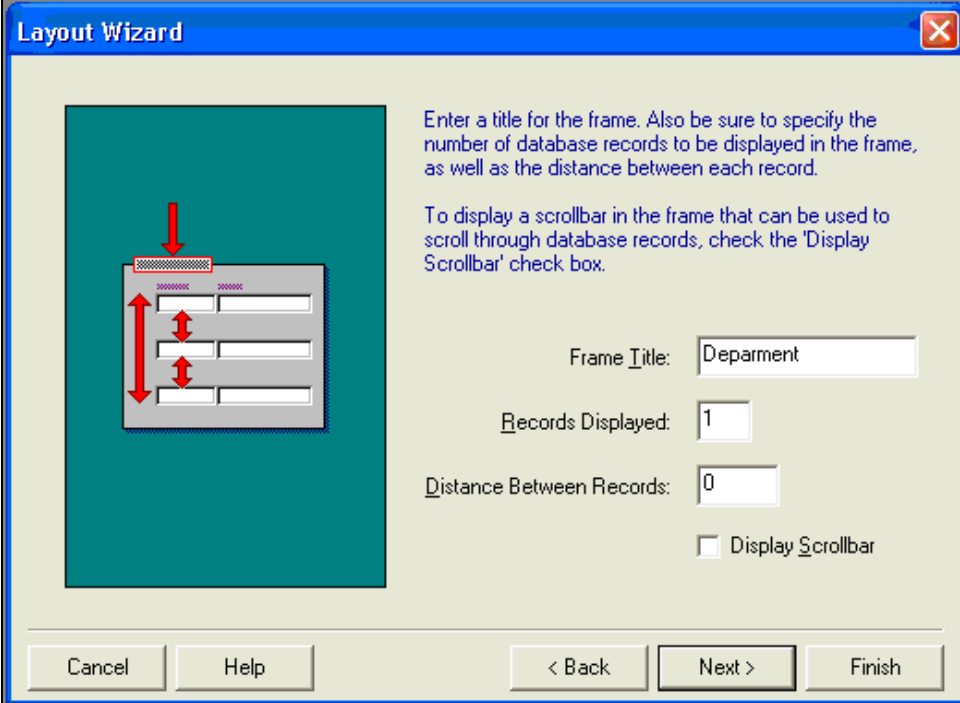
Select a layout style for your frame by clicking a radio button below.

☒ **Form**

☐ Tabular

Buttons: Cancel, Help, < Back, **Next >**, Finish

Figure 16: Layout Wizard, layout type selection



Layout Wizard

Enter a title for the frame. Also be sure to specify the number of database records to be displayed in the frame, as well as the distance between each record.

To display a scrollbar in the frame that can be used to scroll through database records, check the 'Display Scrollbar' check box.

Frame Title:

Records Displayed:

Distance Between Records:

☐ Display Scrollbar

Cancel Help < Back Next > Finish

Figure 17: Layout Wizard

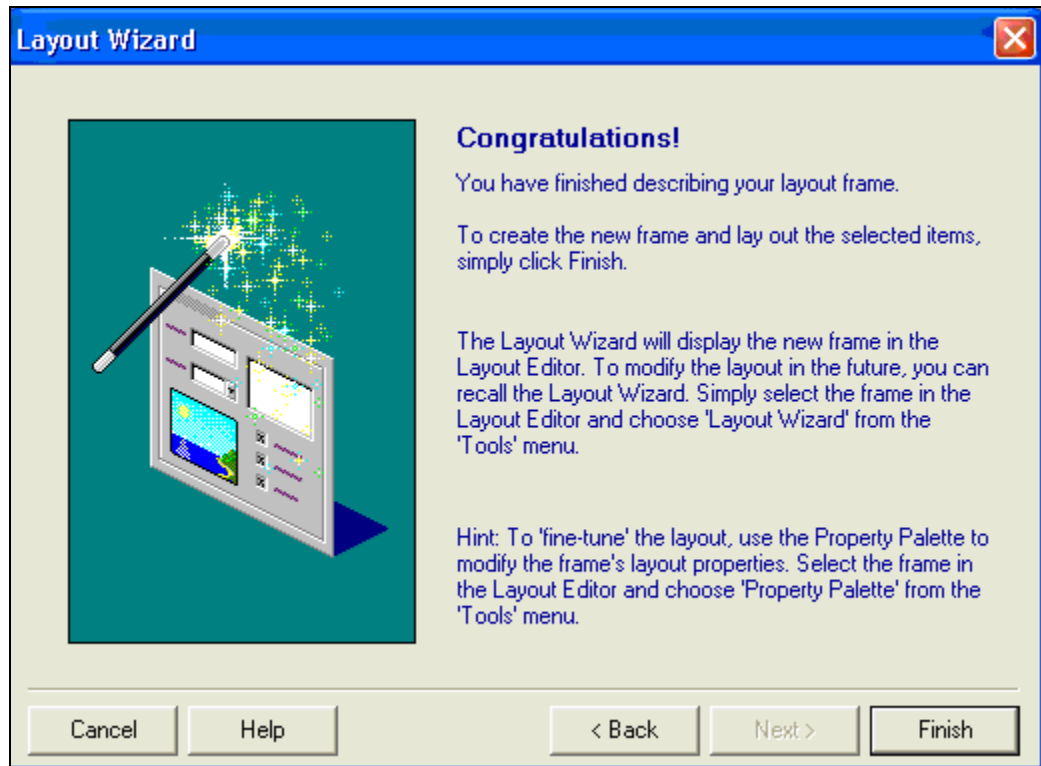


Figure 18: Layout Wizard

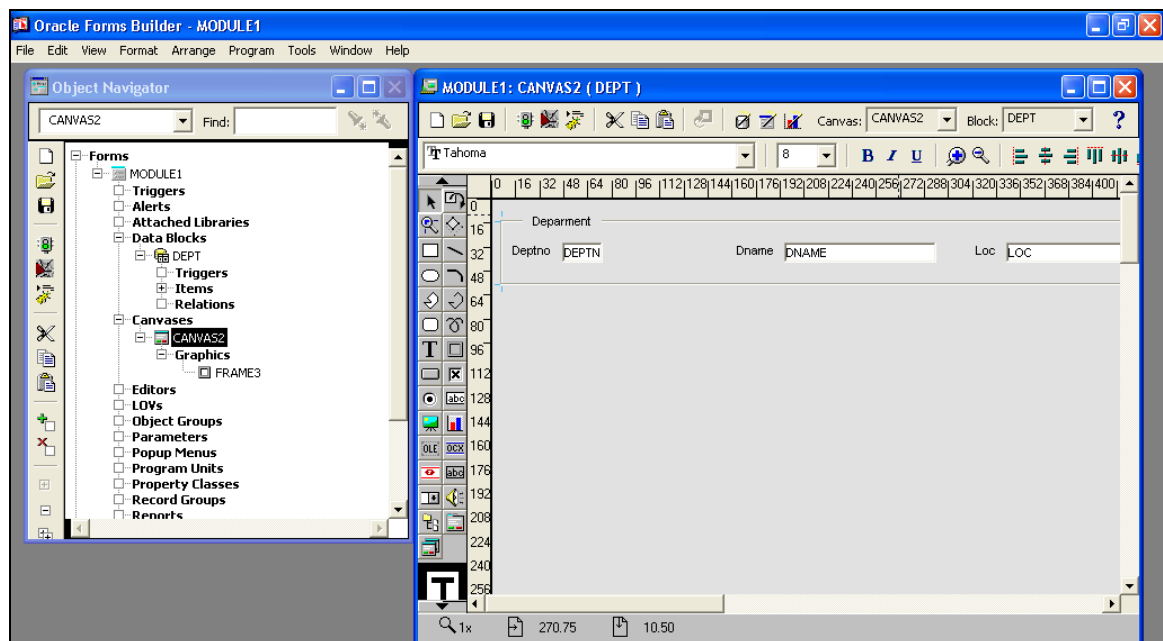


Figure 19: Form Builder Application

Step 2: Saving the form

by selecting **File → Save As**

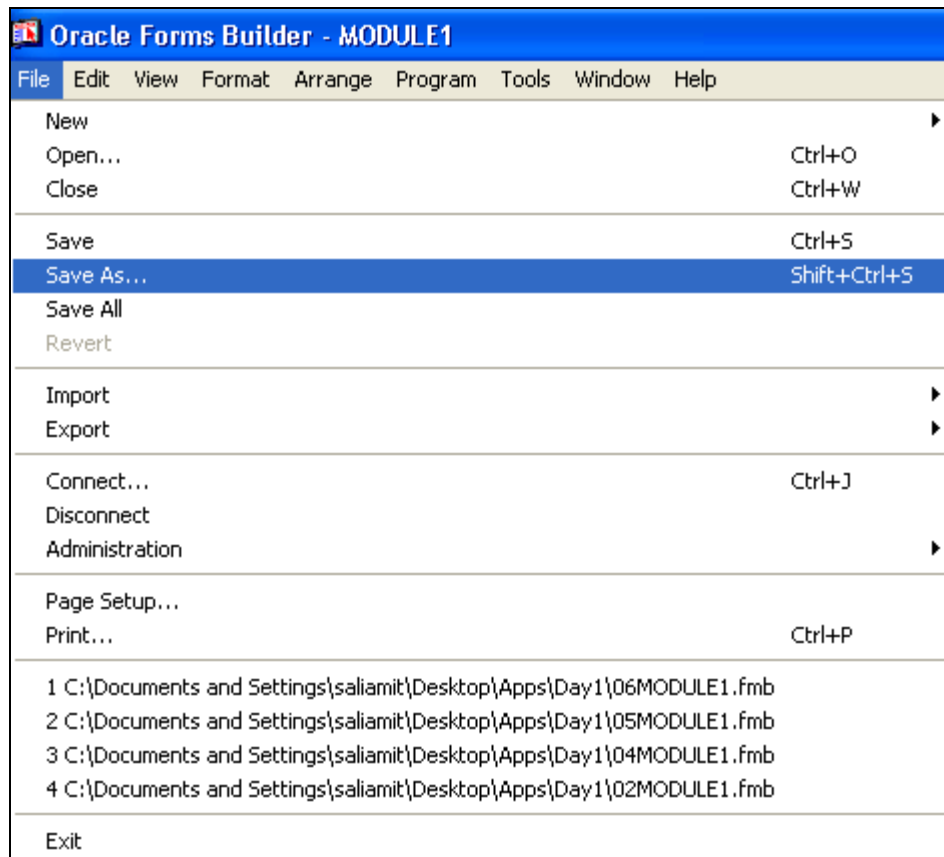


Figure 20: Saving Form

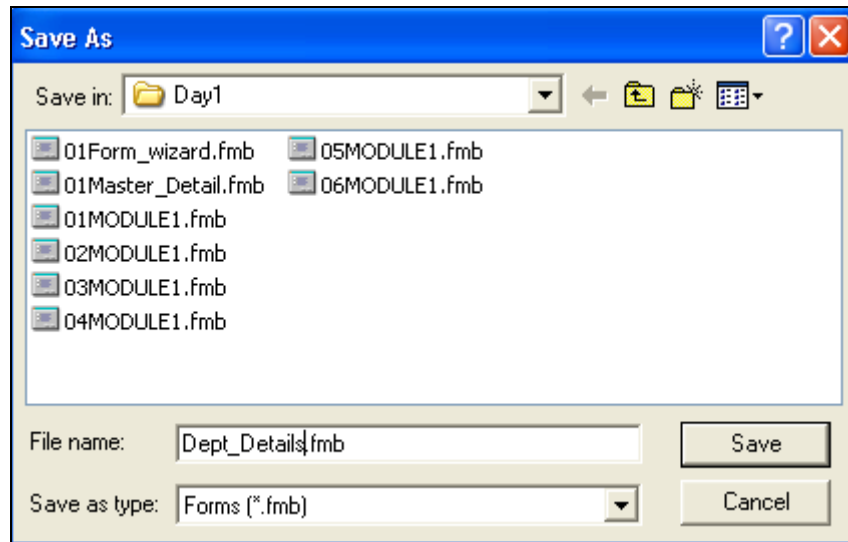


Figure 21: Saving Form

Step 3: Executing the form

By selecting clicking icon mention in screen shot

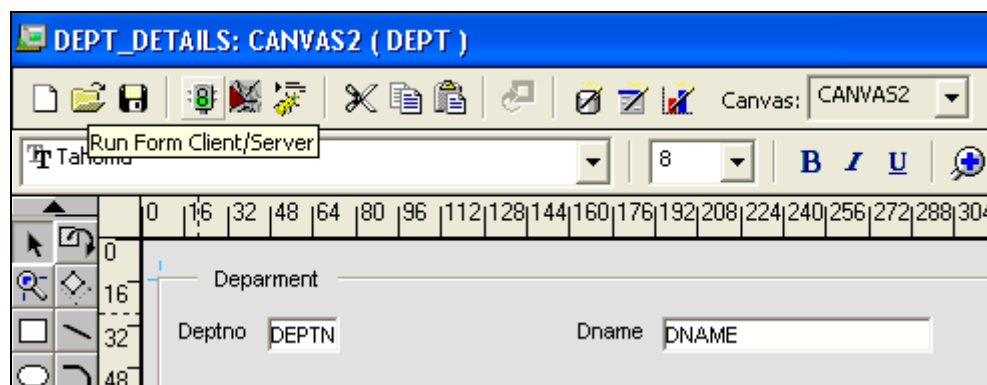


Figure 22: Executing form

Or

By selecting Program → Run Form→ Client Server

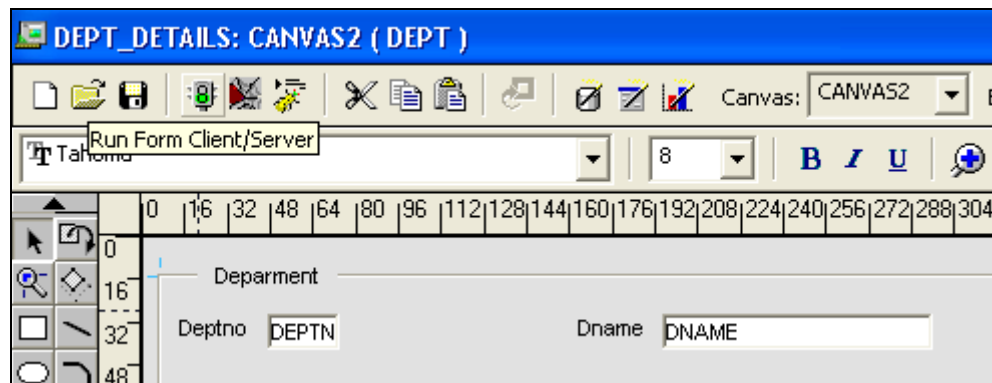


Figure 23: Executing form

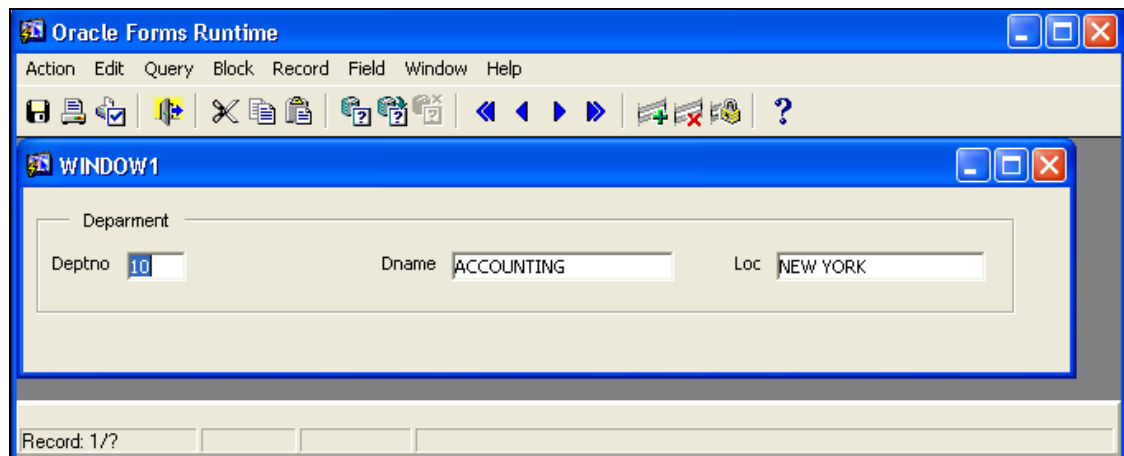


Figure 24: Executed form output

- 1.2. Create a form which displays all the items and records of salgrade table.(To-do)
- 1.3. Create a form which displays empno, sal, ename, deptno in emp table.(To-do)

Lab 2. Wizard base Master- Child Form creation

Goals	• Create a Master- Child form using wizard.
Time	2.5 hr

2.1: Create a form

The steps in this lab will walk you through the wizard for creating Master Child form.

You will have to do the following tasks:

1. Create a Master form using
2. Create a Child form using
3. Saving the form
4. Executing the form

Solution:

Step 1: Creating Master Form

Follow Set 1 of lab 1 to create master form.

Step 2: Creating Master Form

Follow Set 1 of lab 1 to create master form.

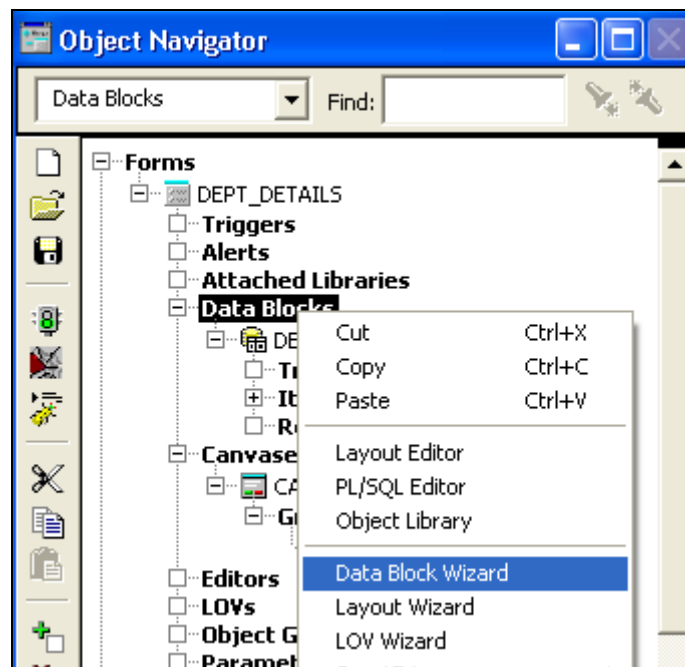


Figure 25: All Programs menu

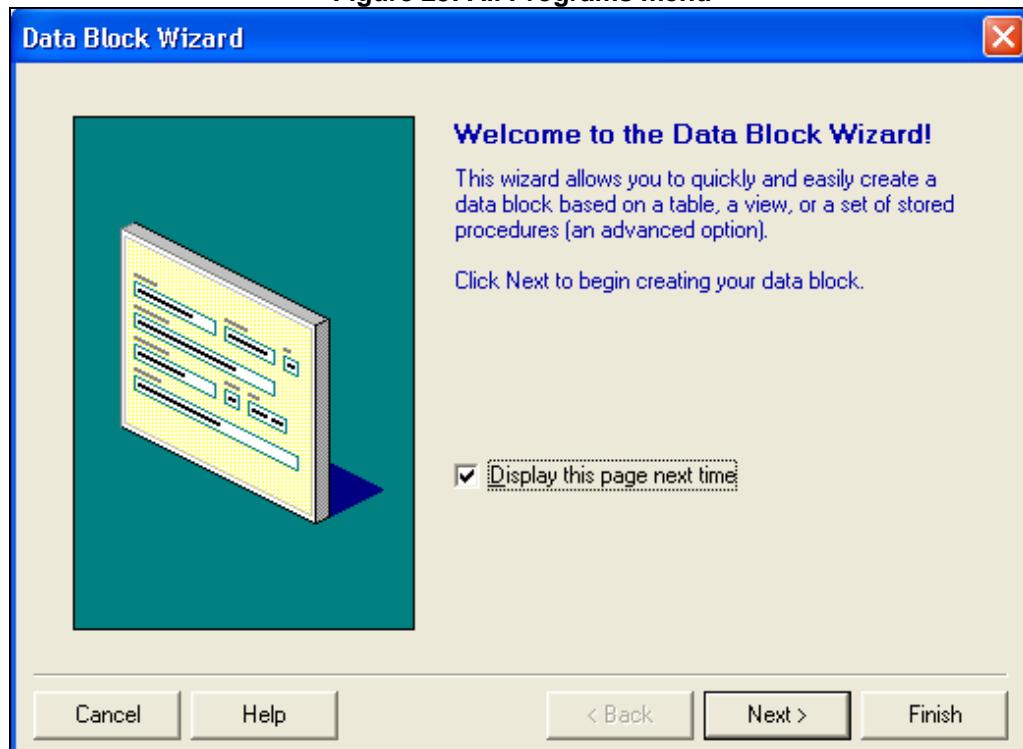


Figure 26: Data Block wizard

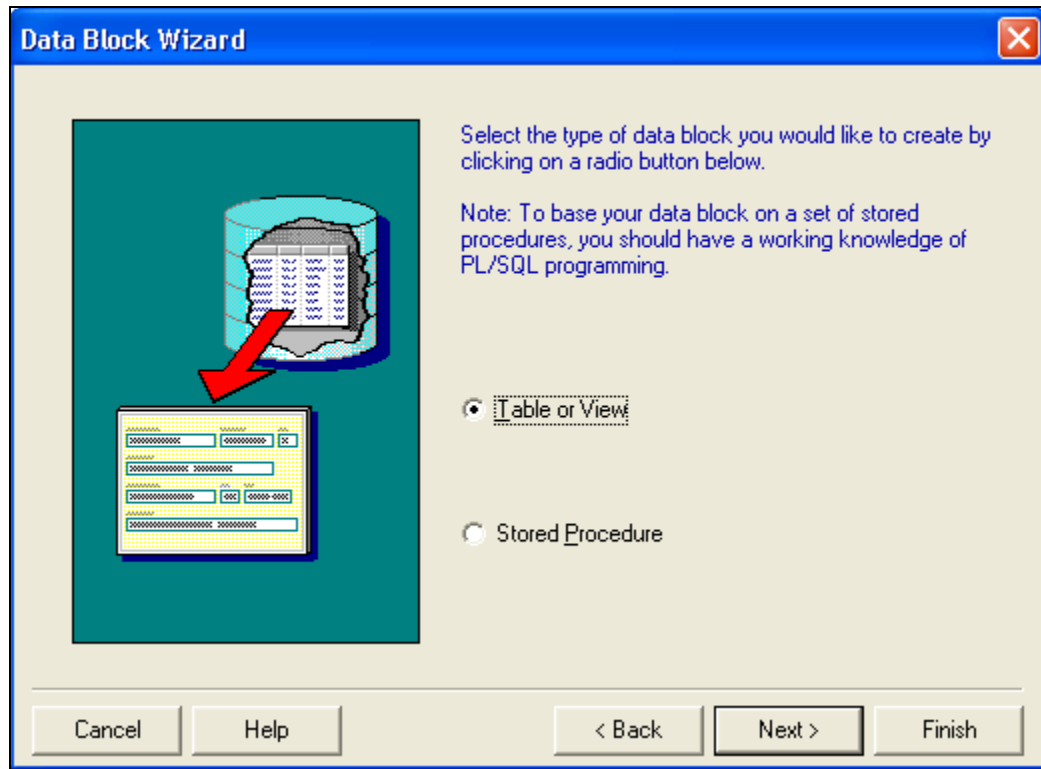


Figure 27: Data Block wizard

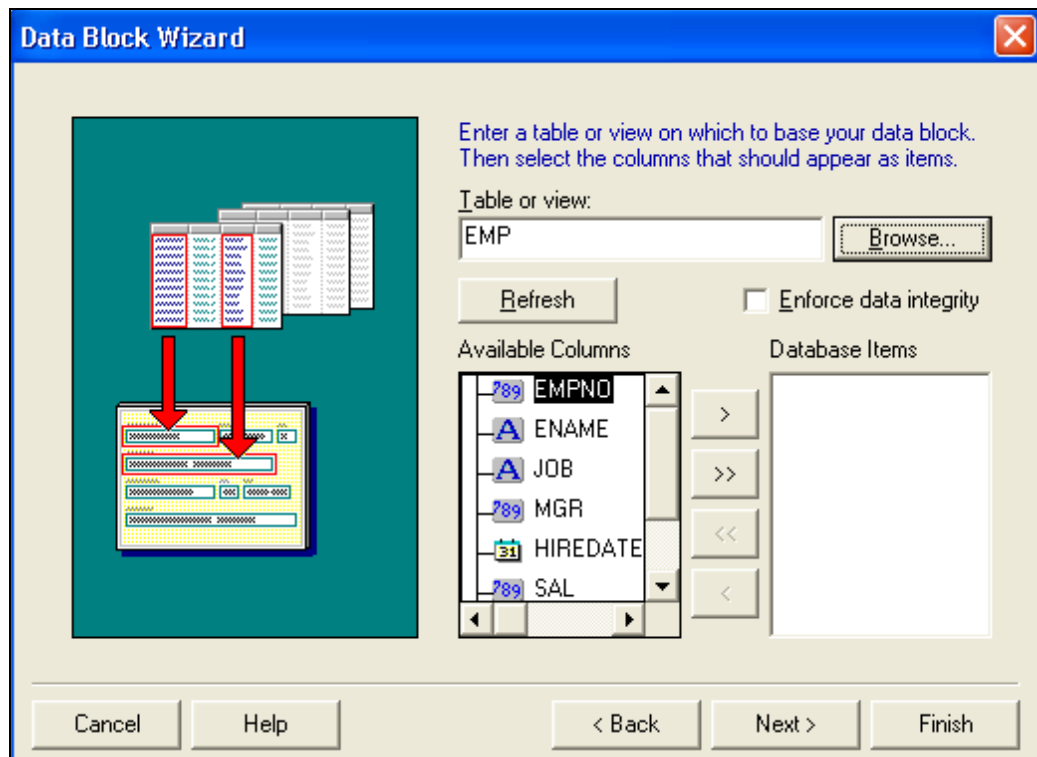


Figure 28: Data Block wizard

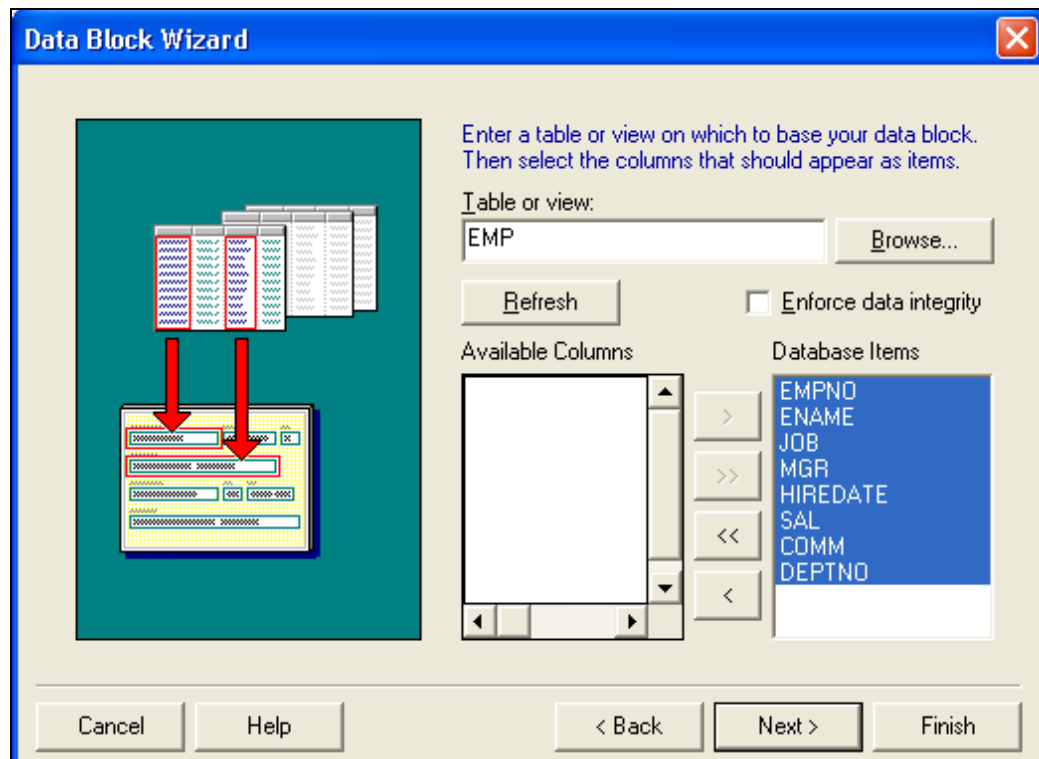


Figure 29: Data Block wizard

Click on Create relationship:

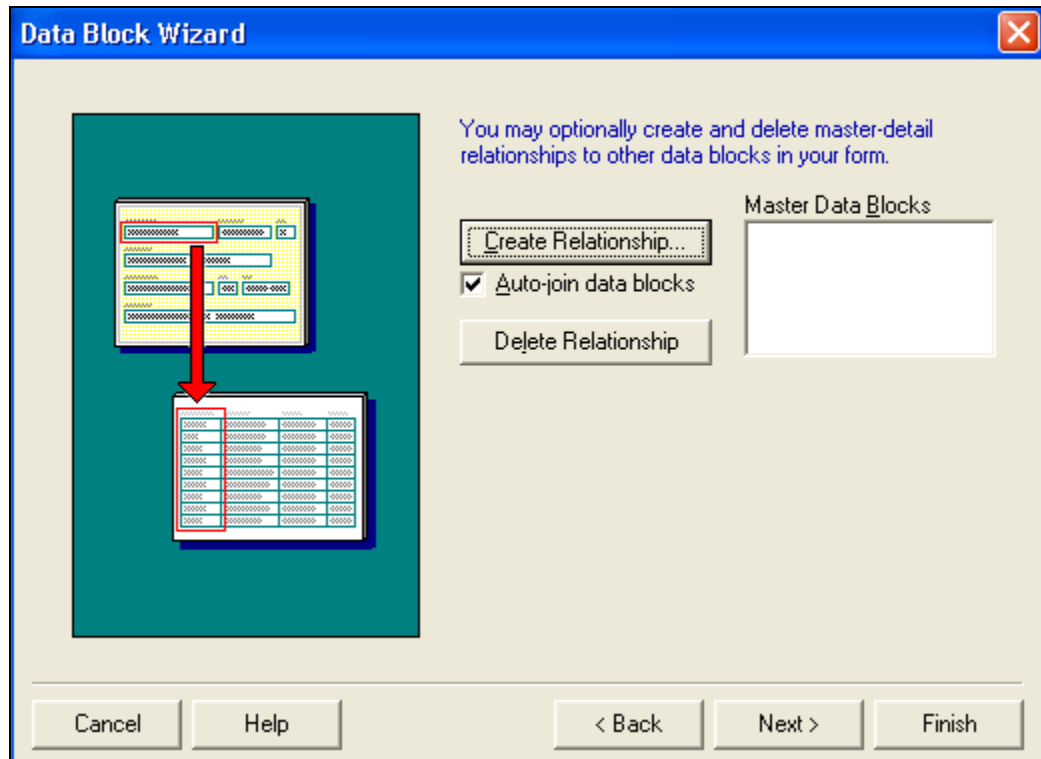


Figure 30: Data Block wizard, creating relationship between master Detail

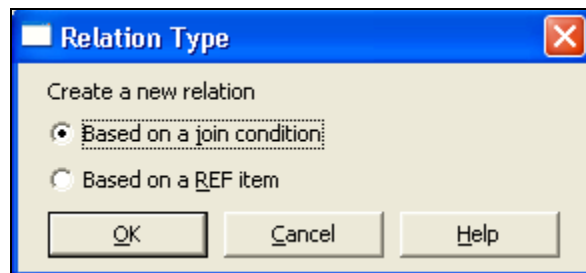


Figure 31: Data Block wizard, creating relationship between master Detail

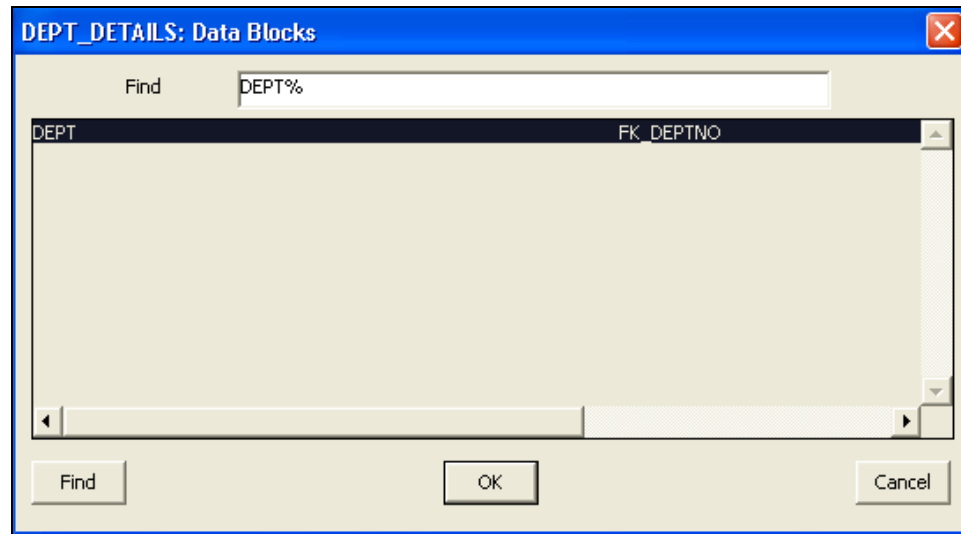


Figure 32: Data Block wizard, creating relationship between master Detail

So, we have created relationship between master block and child block using key Deptno.

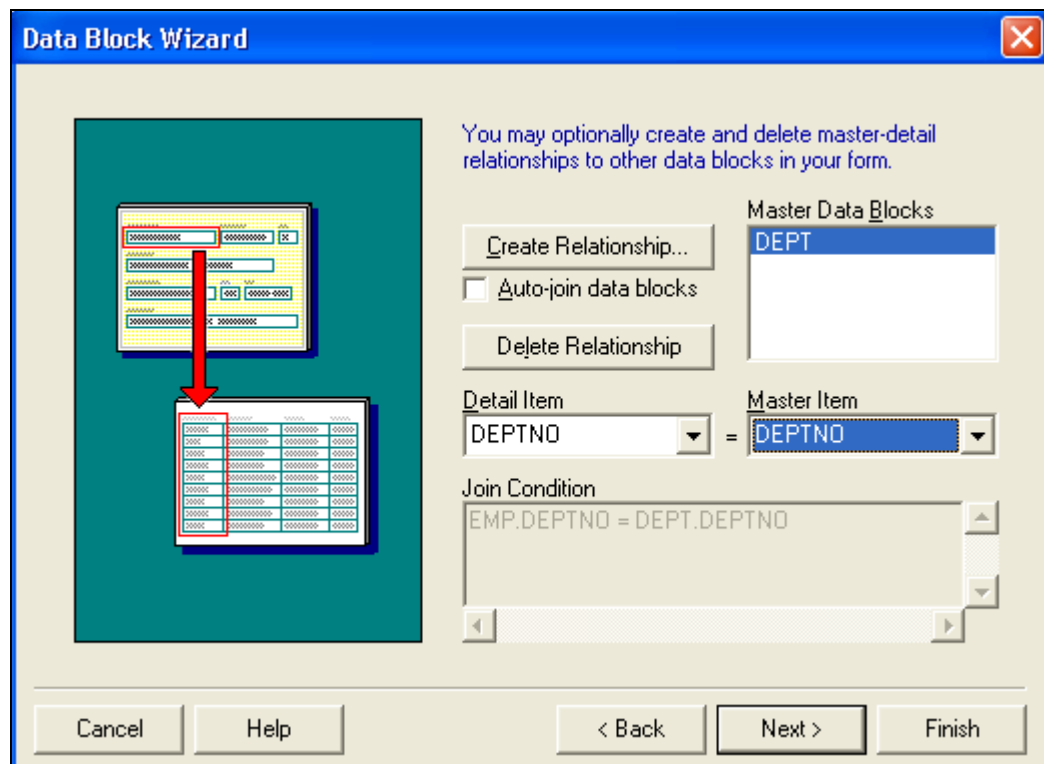


Figure 33: Data Block wizard, creating relationship between master Detail



Figure 34: Layout wizard

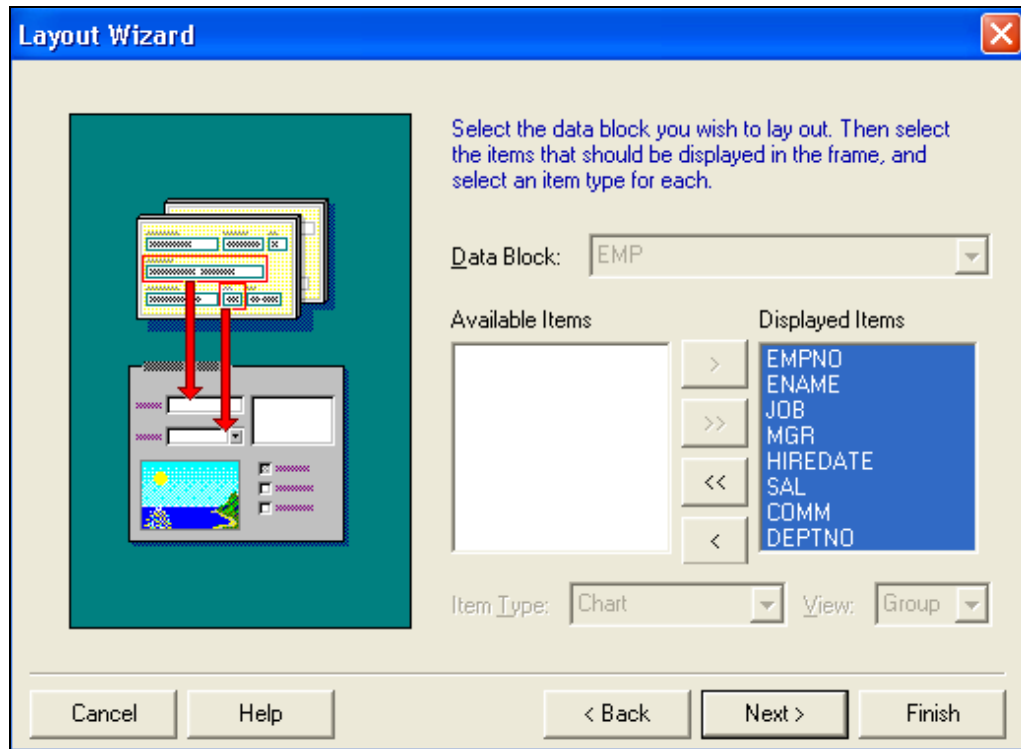


Figure 35: Layout wizard

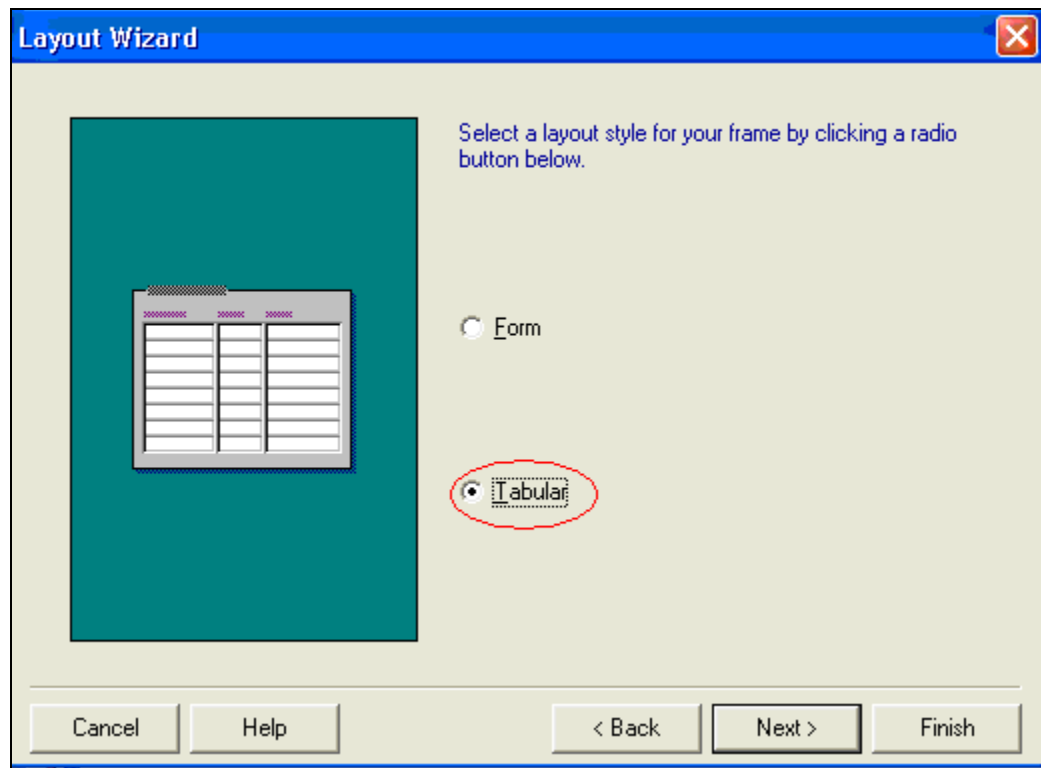


Figure 36: Layout wizard, select table as a layout

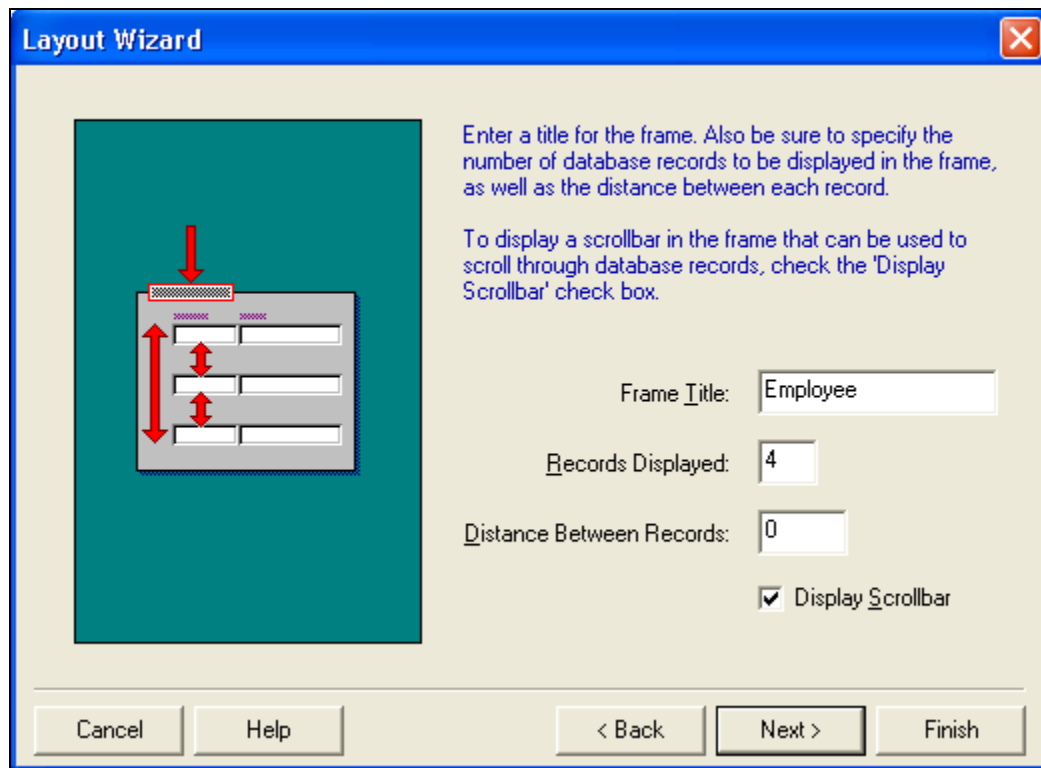


Figure 37: Layout wizard

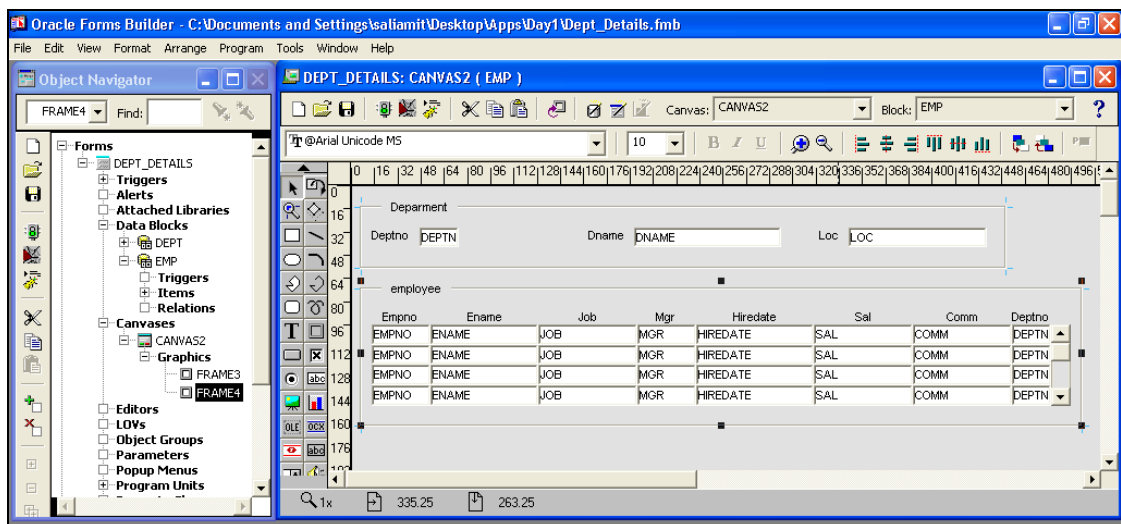


Figure 38: Report Builder

Step 2: Saving the form

Same as lab 1 steps, Save the form as Master_Details.fmb

Step 3: Executing the form

Same as lab 1 steps.

The Output is,

Oracle Forms Runtime

WINDOW1

Department

Deptno: 20 Dname: RESEARCH Loc: DALLAS

employee

Empno	Ename	Job	Mgr	Hiredate	Sal	Comm	Deptno
7369	SMITH	CLERK	7902	17-DEC-1980	1100		20
7566	JONES	MANAGER	7876	02-APR-1981	4800		20
7788	SCOTT	ANALYST	7566	19-APR-1987	3300		20
7876	ADAMS	CLERK	7788	23-MAY-1987	1400		20

Record: 2/?

Figure 39: Master- Detail Form Output

2.2. Create a form which shows all items and records of both emp and salgrade tables. (To-do)

Lab 3. Working With Items

Goals	<ul style="list-style-type: none"> Working with various items present in Form
Time	2.5 hr

3.1: Create a form

The steps in this lab will walk you through the wizard for creating form.

You will have to do the following tasks:

1. Create a using wizard
2. Saving the form
3. Executing the form

Solution:

Step 1: Data block and Layout wizard:

Open form 6i Application, by selecting **Start → Programs → Oracle Forms 6i – OraHome → Form Builder**.

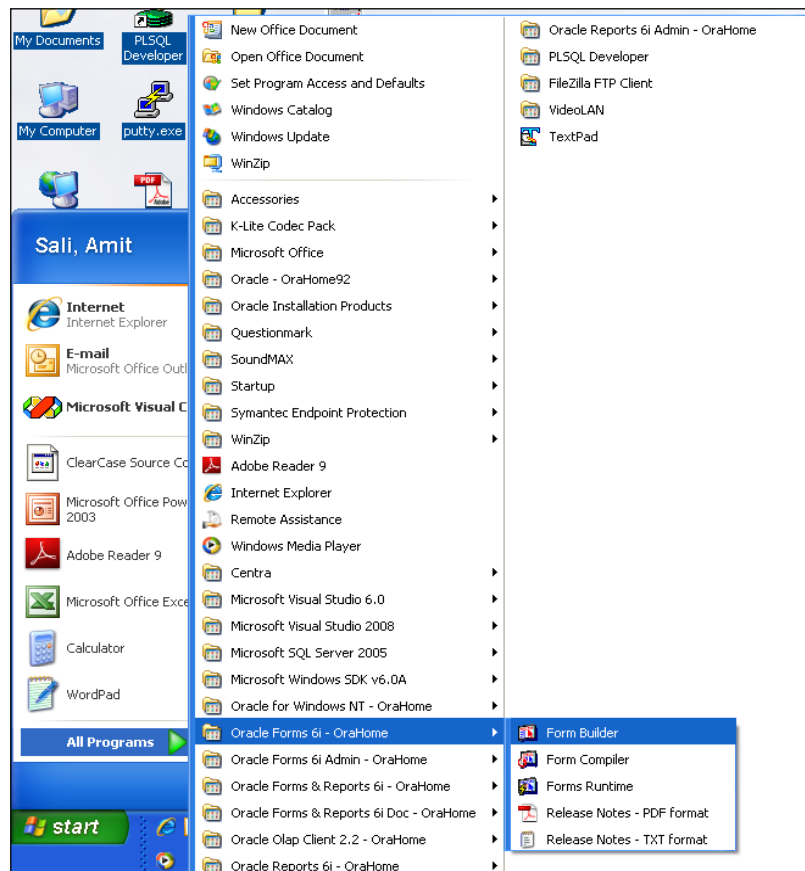


Figure 40: All Programs menu

Step 2: Select Data block wizard and press OK.

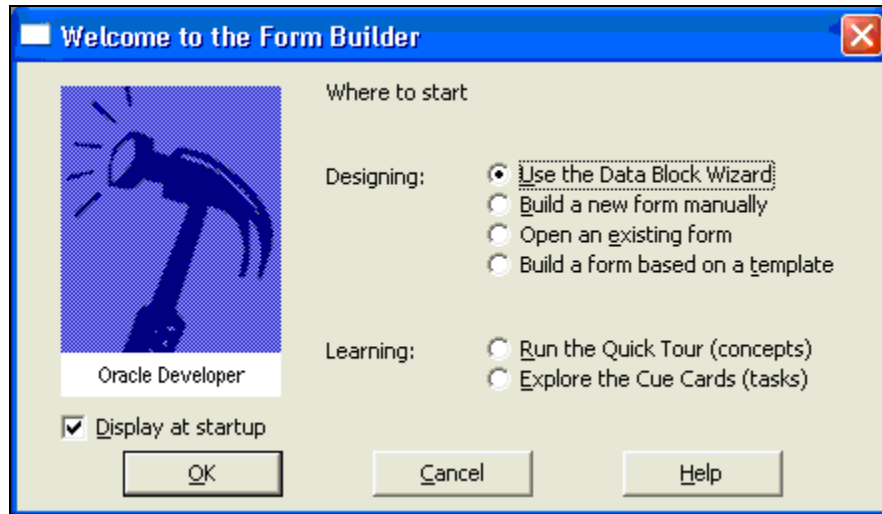
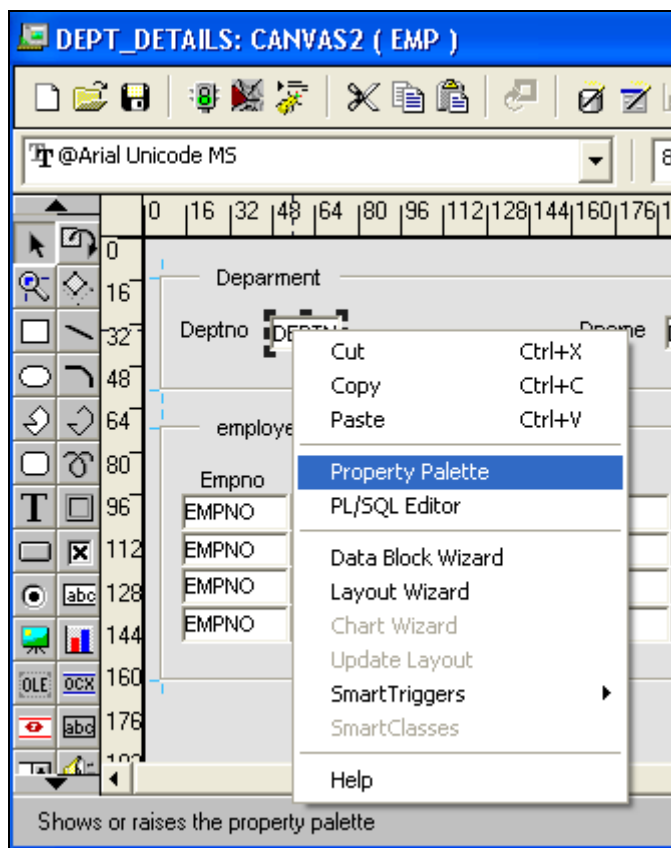


Figure 41: Start of data block wizard



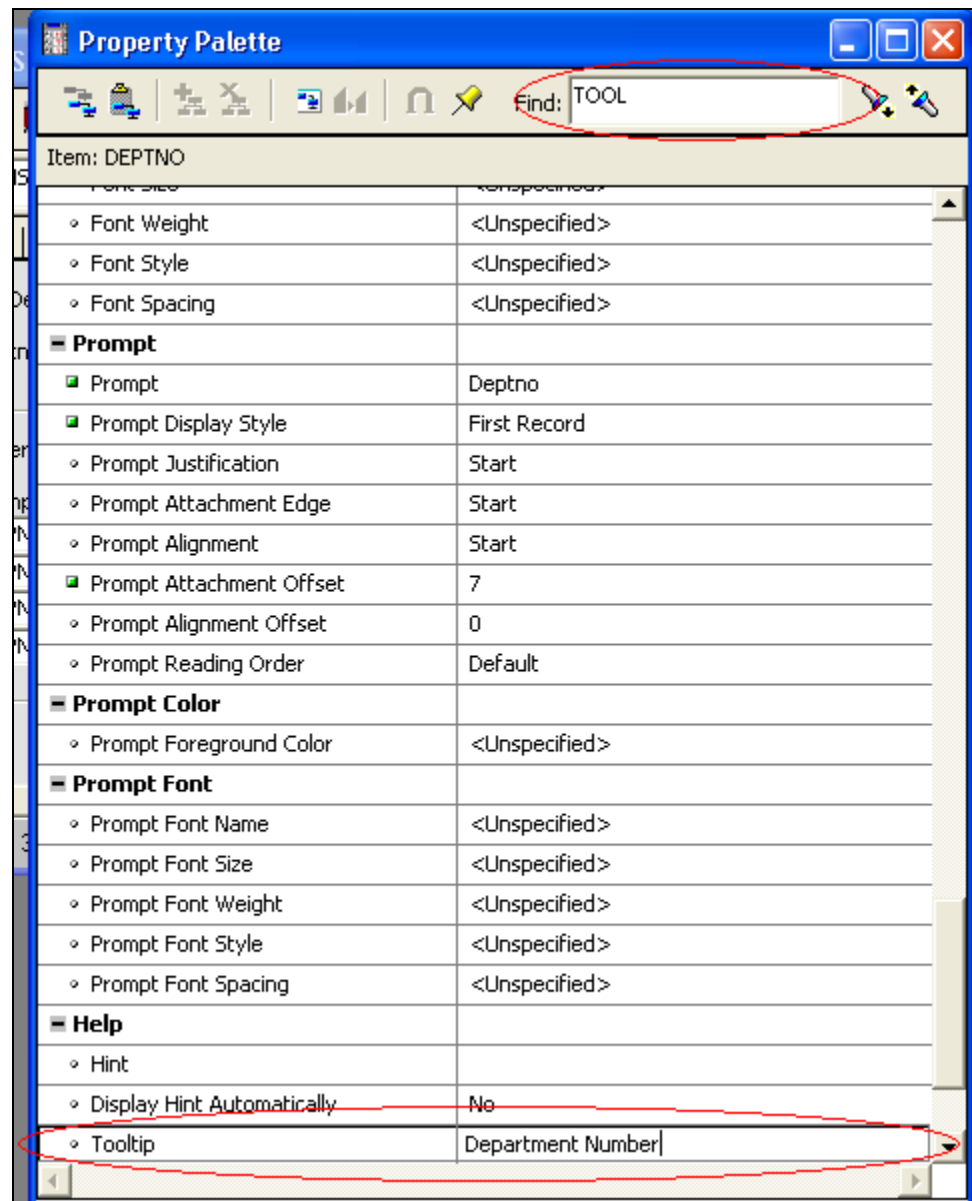
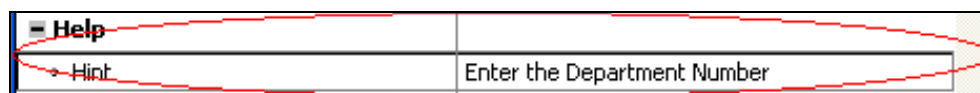


Figure 42: Data block wizard



DEPT_DETAILS: CANVAS2 (EMP)

Canvas: CANVAS2 Block: DEPT

@Arial Unicode M5 8 B I U

0 16 32 48 64 80 96 112 128 144 160 176 192 208 224 240 256 272 288 304 320 336 352 368 384 400 416 432 448 464 480 496

Department

Deptno DEPTN Dname [DNAME] Loc [LOC]

employee

Empno	Ename	Job	Mgr	Hiredate	Sal	Comm	Deptno
EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTN
EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTN
EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTN
EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTN

Check Box

Figure 43: Selecting check box

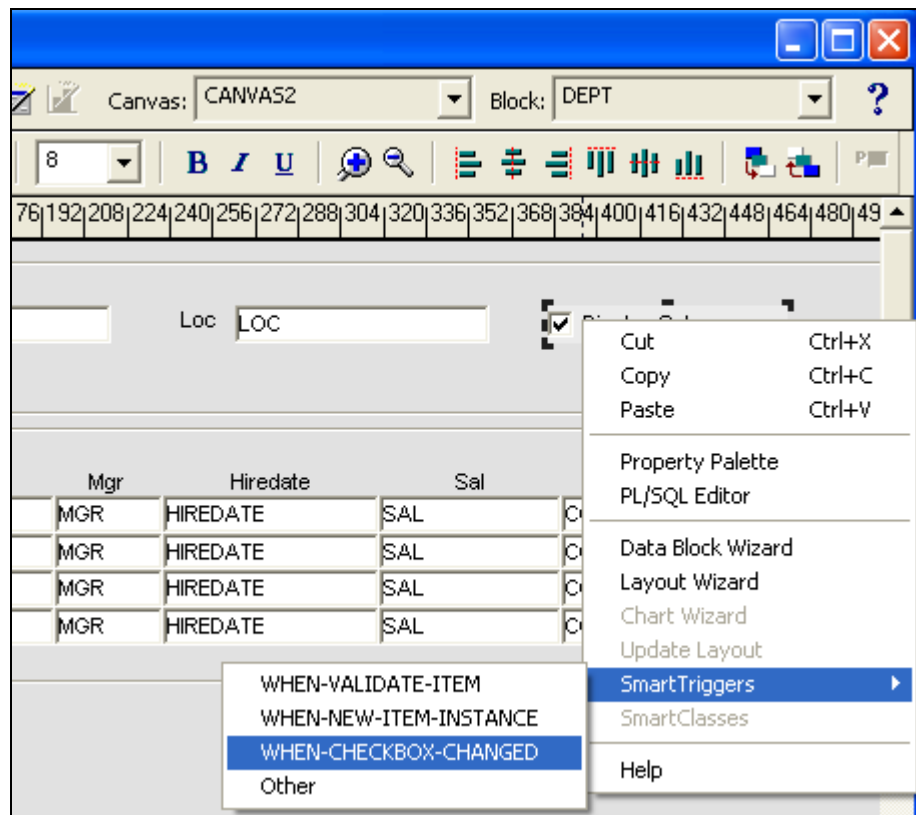
Property Palette

Item: CHK_SAL_SHOW

General	
Name	CHK_SAL_SHOW
Item Type	Check Box
Subclass Information	
Comments	
Help Book Topic	
Functional	
Enabled	Yes
Label	Display Salary
Access Key	
Implementation Class	
Value when Checked	1
Value when Unchecked	0

Figure 44: Property palette for check box item selected

Say Database Item as No



begin

if (:dept.chk_sal_show = 1) then

Set_Item_Property('emp.sal',VISIBLE,PROPERTY_TRUE);

else

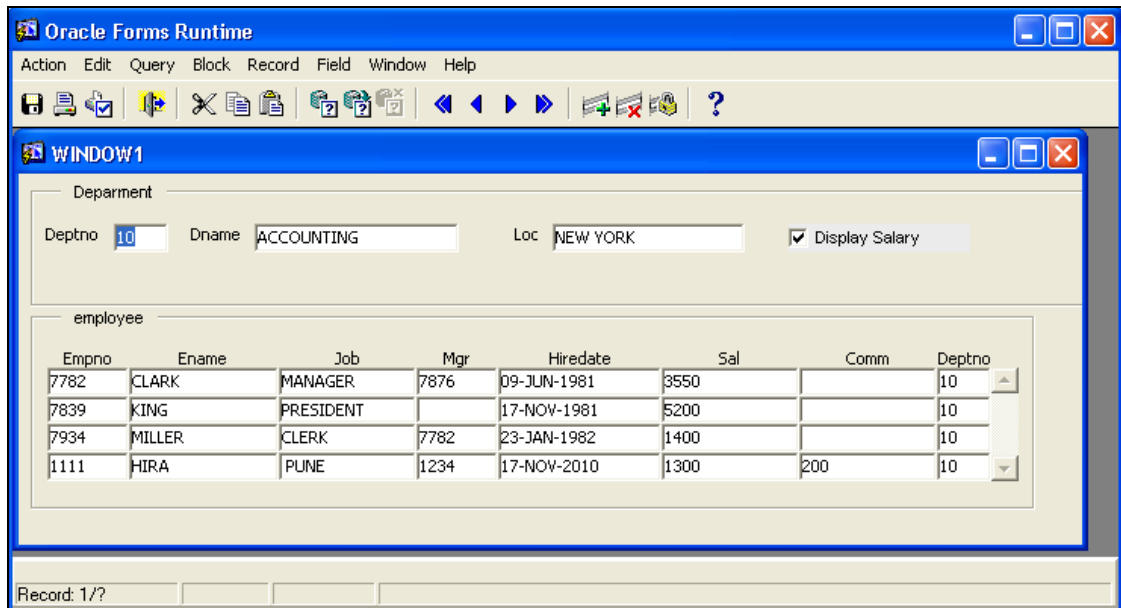
Set_Item_Property('emp.sal',VISIBLE,PROPERTY_FALSE);

end if;

end;

compile

Run

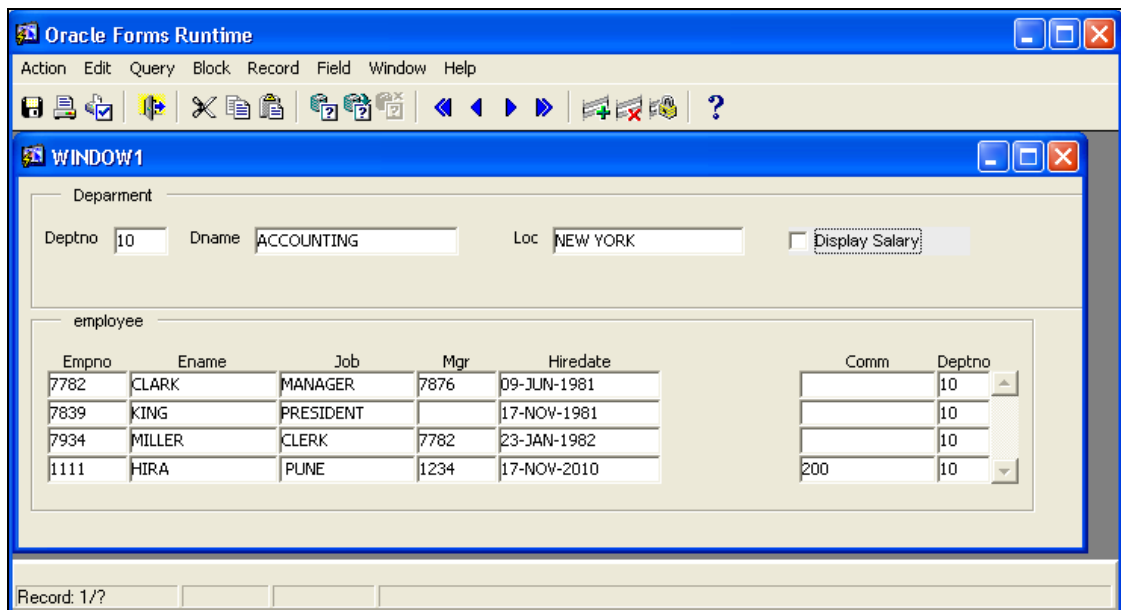


The screenshot shows the Oracle Forms Runtime window titled 'WINDOW1'. The 'Department' section has 'Deptno' set to 10, 'Dname' as ACCOUNTING, and 'Loc' as NEW YORK. The 'Display Salary' checkbox is checked. Below this is an 'employee' table with the following data:

Empno	Ename	Job	Mgr	Hiredate	Sal	Comm	Deptno
7782	CLARK	MANAGER	7876	09-JUN-1981	3550		10
7839	KING	PRESIDENT		17-NOV-1981	5200		10
7934	MILLER	CLERK	7782	23-JAN-1982	1400		10
1111	HIRA	PUNE	1234	17-NOV-2010	1300	200	10

Record: 1/?

Figure 45: Execution of form with check box item checked



The screenshot shows the Oracle Forms Runtime window titled 'WINDOW1'. The 'Department' section has 'Deptno' set to 10, 'Dname' as ACCOUNTING, and 'Loc' as NEW YORK. The 'Display Salary' checkbox is unchecked. Below this is an 'employee' table with the following data:

Empno	Ename	Job	Mgr	Hiredate	Comm	Deptno
7782	CLARK	MANAGER	7876	09-JUN-1981		10
7839	KING	PRESIDENT		17-NOV-1981		10
7934	MILLER	CLERK	7782	23-JAN-1982		10
1111	HIRA	PUNE	1234	17-NOV-2010	200	10

Record: 1/?

Figure 46: Execution of form with check box item unchecked

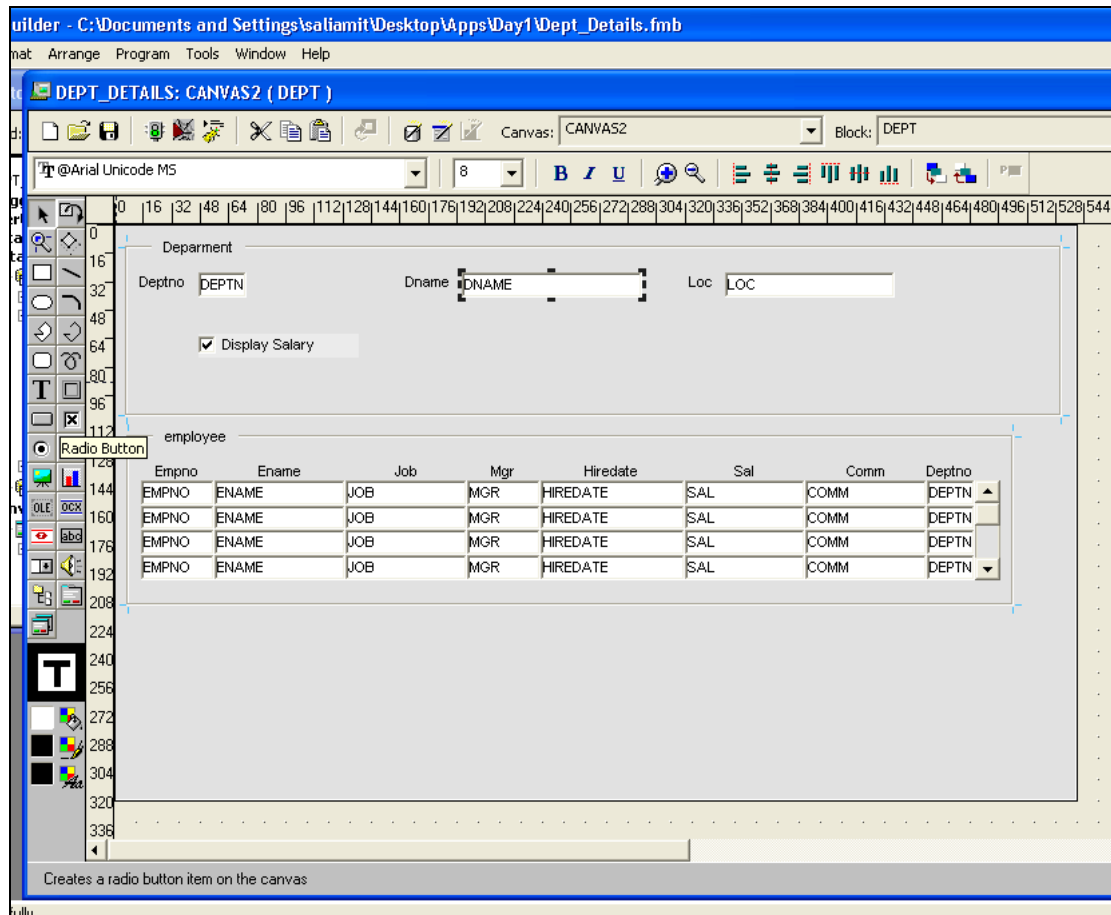
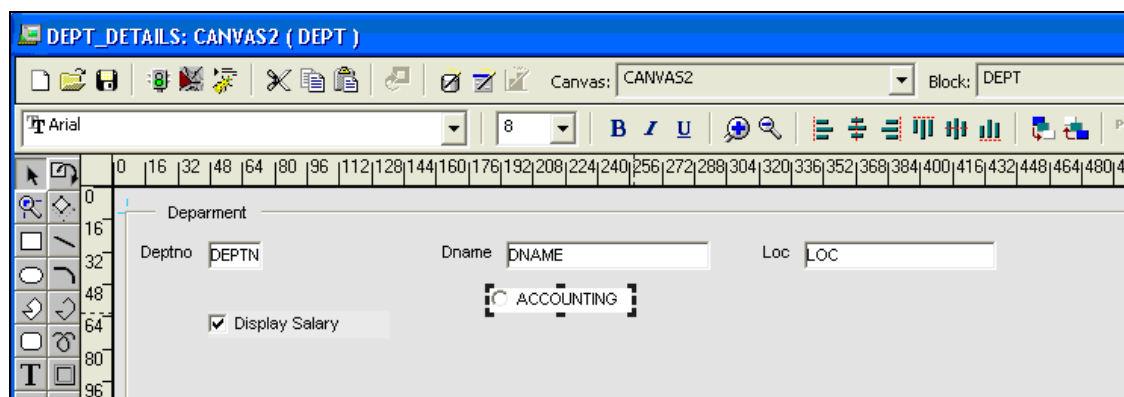
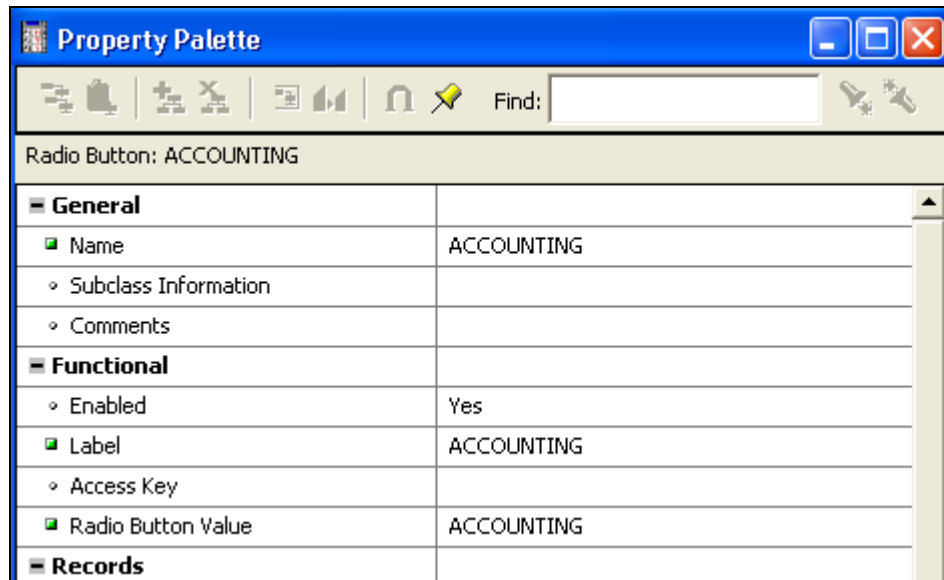


Figure 47: Selecting radio-group item



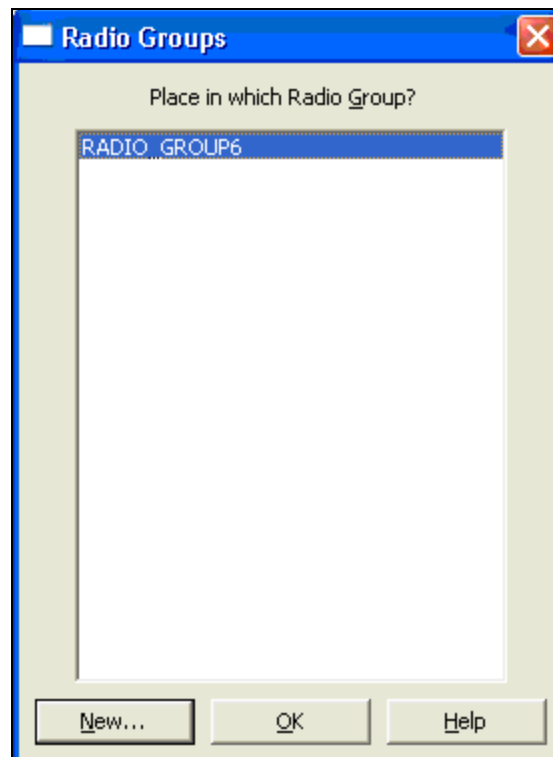


Property Palette

Radio Button: ACCOUNTING

General	
Name	ACCOUNTING
Subclass Information	
Comments	
Functional	
Enabled	Yes
Label	ACCOUNTING
Access Key	
Radio Button Value	ACCOUNTING
Records	

Figure 48: Property palette for the radio item selected



Radio Groups

Place in which Radio Group?

RADIO..GROUP6

New... OK Help

Department

Deptno Dname Loc

☒ Display Salary

☐ ACCOUNTING
☐ RESEARCH
☐ SALES
☐ OPERATIONS

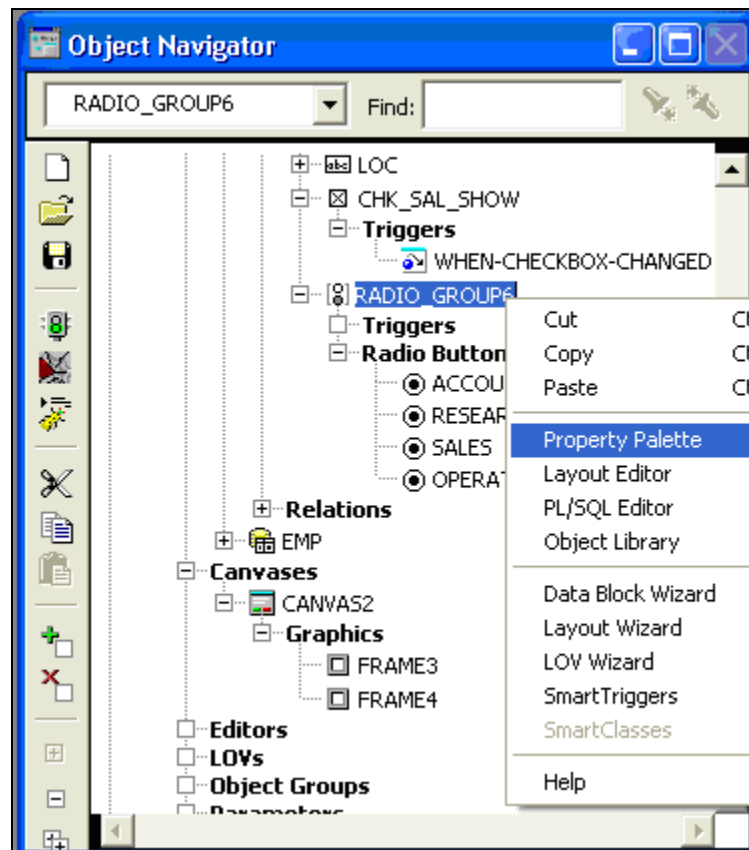
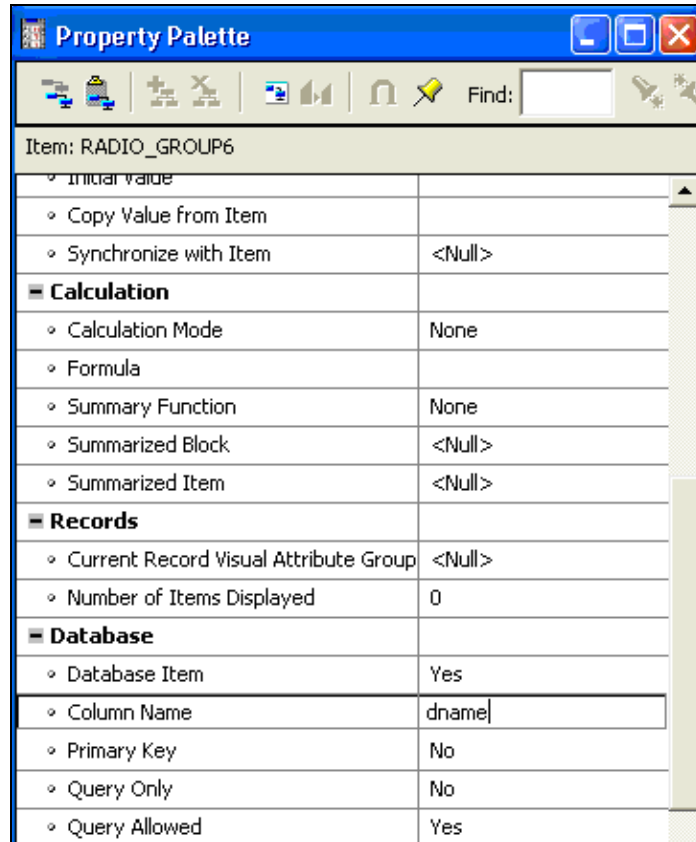


Figure 49: Selecting property palette of the radio group



Property Palette	
Item: RADIO_GROUP6	
Initial value	
Copy Value from Item	
Synchronize with Item	<Null>
Calculation	
Calculation Mode	None
Formula	
Summary Function	None
Summarized Block	<Null>
Summarized Item	<Null>
Records	
Current Record Visual Attribute Group	<Null>
Number of Items Displayed	0
Database	
Database Item	Yes
Column Name	dname
Primary Key	No
Query Only	No
Query Allowed	Yes

Figure 50: Property palette of radio group

The screenshot shows the Oracle Forms Runtime window titled "Oracle Forms Runtime". The menu bar includes Action, Edit, Query, Block, Record, Field, Window, and Help. The toolbar contains various icons for navigation and editing. The main window is titled "WINDOW1" and contains a form with the following elements:

- Department Section:**
 - Deptno: 30
 - Dname: SALES
 - Loc: CHICAGO
 - Radio group with options: ACCOUNTING, RESEARCH, **SALES** (selected), and OPERATIONS.
 - Display Salary: ☒
- employee Section:**

Empno	Ename	Job	Mgr	Hiredate	Sal	Comm	Deptno
7499	ALLEN	SALESMAN	7698	20-FEB-1981	1700	500	30
7521	WARD	SALESMAN	7698	22-FEB-1981	1350	700	30
7654	MARTIN	SALESMAN	7698	28-SEP-1981	1350	1600	30
7698	BLAKE	MANAGER	7876	01-MAY-1981	3950		30

At the bottom, it shows "Record: 3/?".

Figure 51: Execution of form with the radio group created

BUTTONS

The screenshot shows the Oracle Forms Designer window titled "@Arial Unicode MS". The menu bar includes various icons for design and development. The main window displays a form layout with the following elements:

- sample Section:**
 - Empno: EMPNO
 - Ename: ENAME
 - Job: JOB
 - Mgr: MGR
 - Hiredate: HIREDATE
 - Sal: SAL
 - Comm: COMM
 - Deptno: DEPTN
- Buttons:** A button labeled "Button1" is visible in the design area.

The design area includes a grid with coordinates (X, Y) and a toolbar with various design tools.

Figure 52: Selection of button

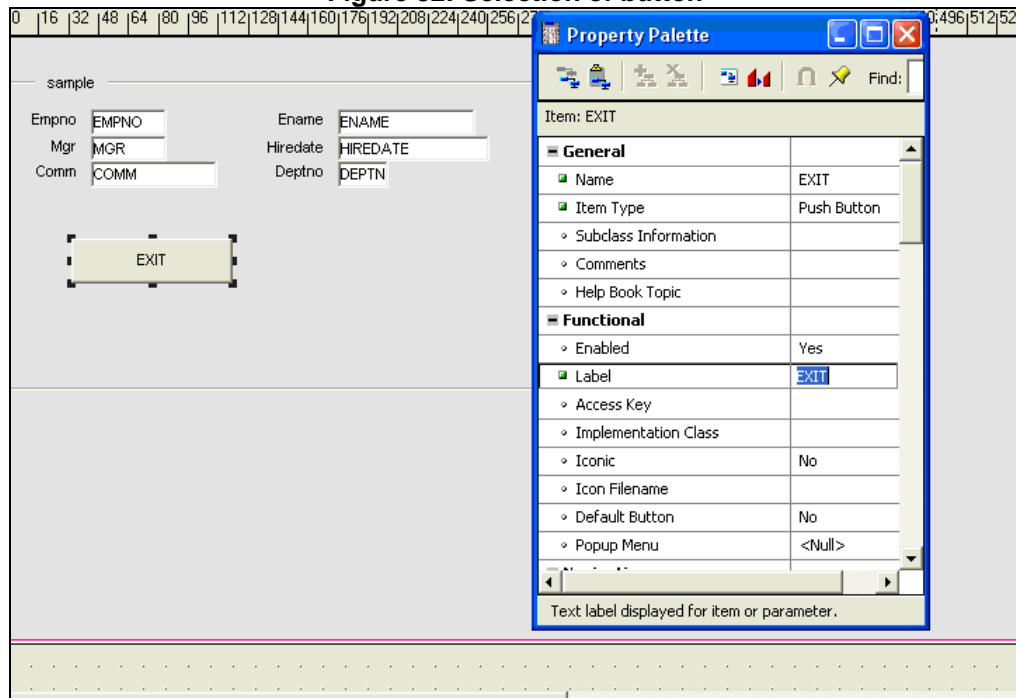


Figure 53: Property palette of button selected

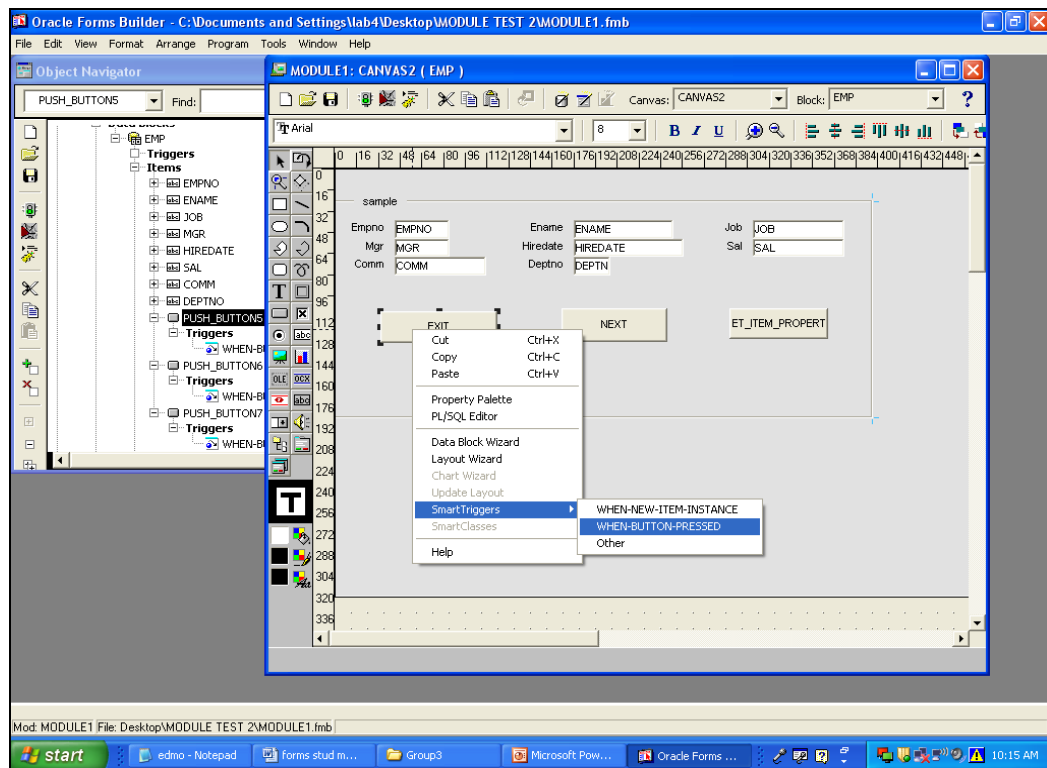


Figure 54: Selection of when button pressed trigger

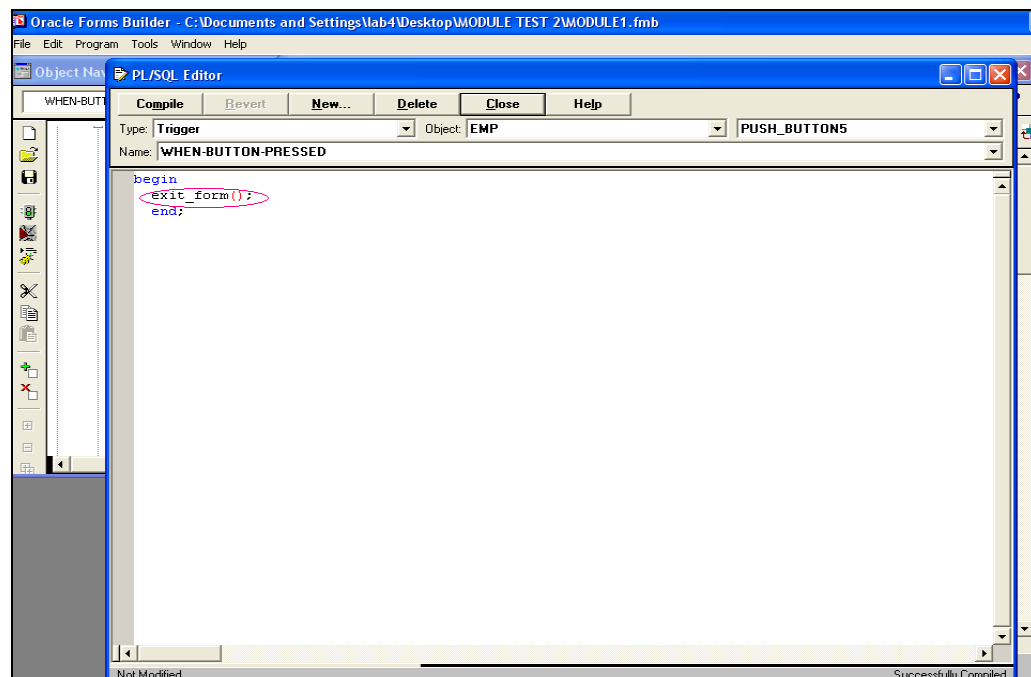
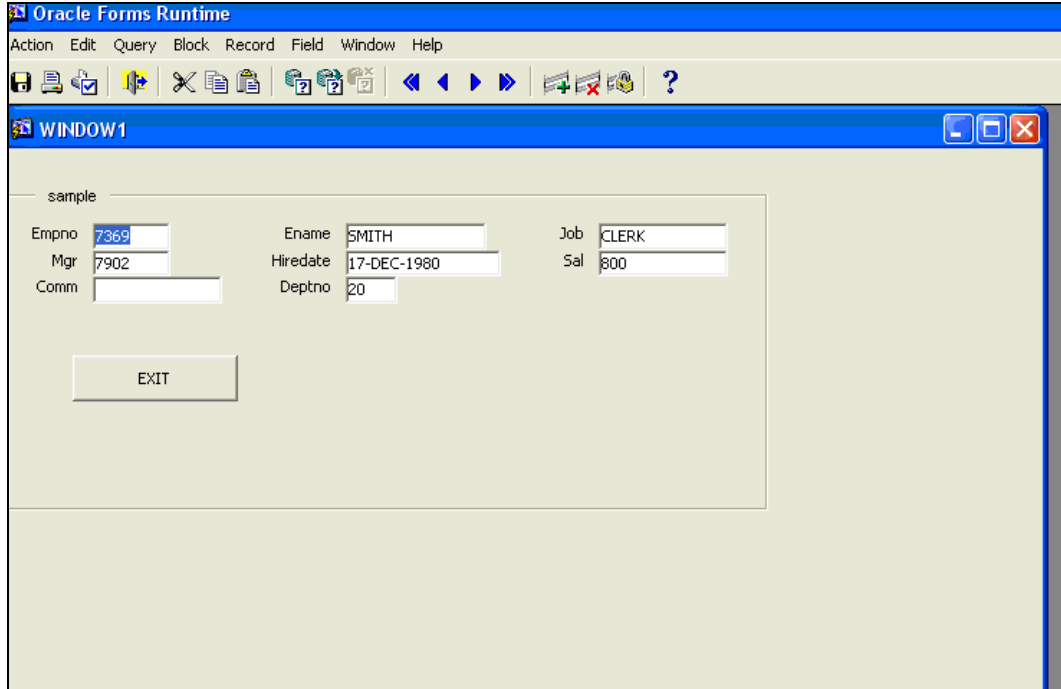


Figure 55: PL/SQL Code for when button pressed trigger

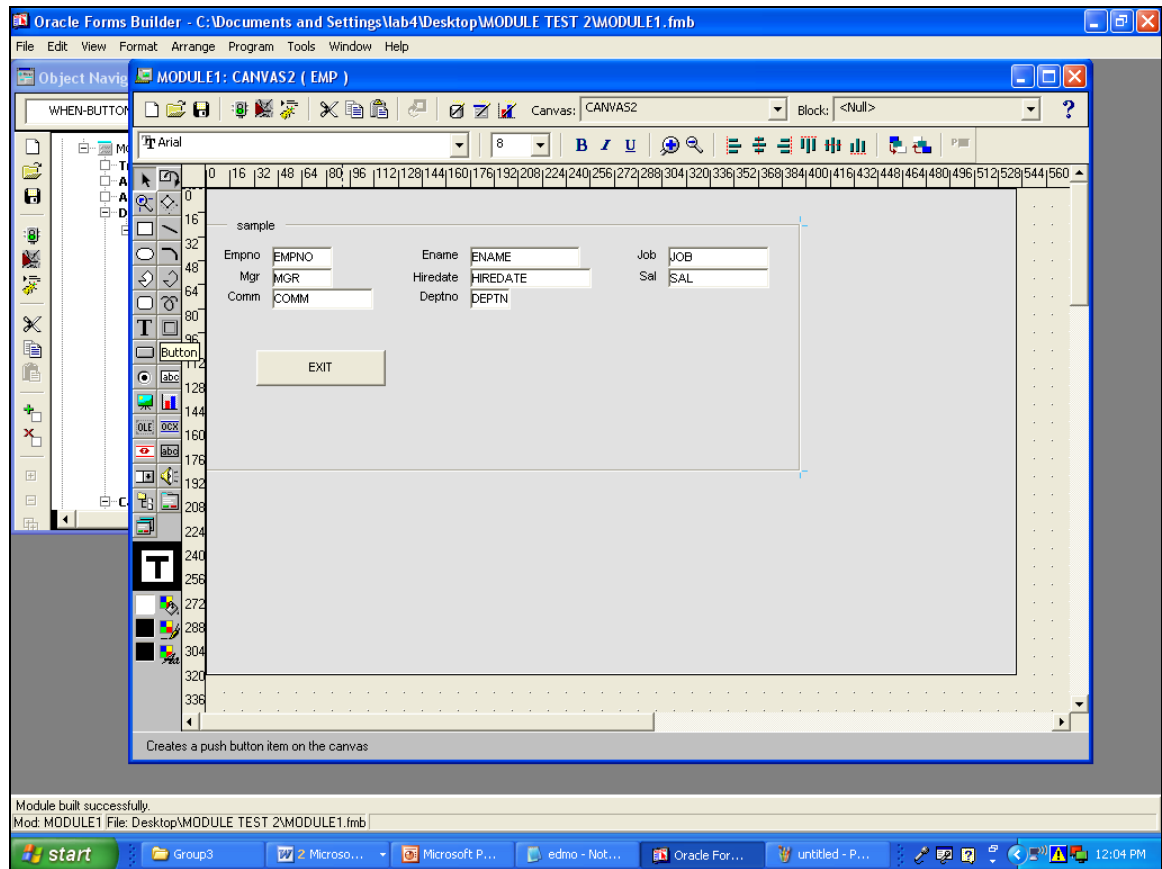


The screenshot shows the Oracle Forms Runtime environment. The main window is titled 'WINDOW1' and contains a form titled 'sample'. The form has several text input fields arranged in a grid:

Field Name	Value
Empno	7369
Ename	SMITH
Job	CLERK
Mgr	7902
Hiredate	17-DEC-1980
Sal	800
Deptno	20
Comm	

Below the input fields is a button labeled 'EXIT'.

Figure 56: Execution of form with button



Create buttons to navigate between records. (To Do)
Create a button which will save a new record. (To Do)

Lab 4. Summary and Formula functions

Goals	• Create a form which uses summary and formula functions.
Time	2.5 hr

4.1: Calculate the sum of salaries of a department

Solution:

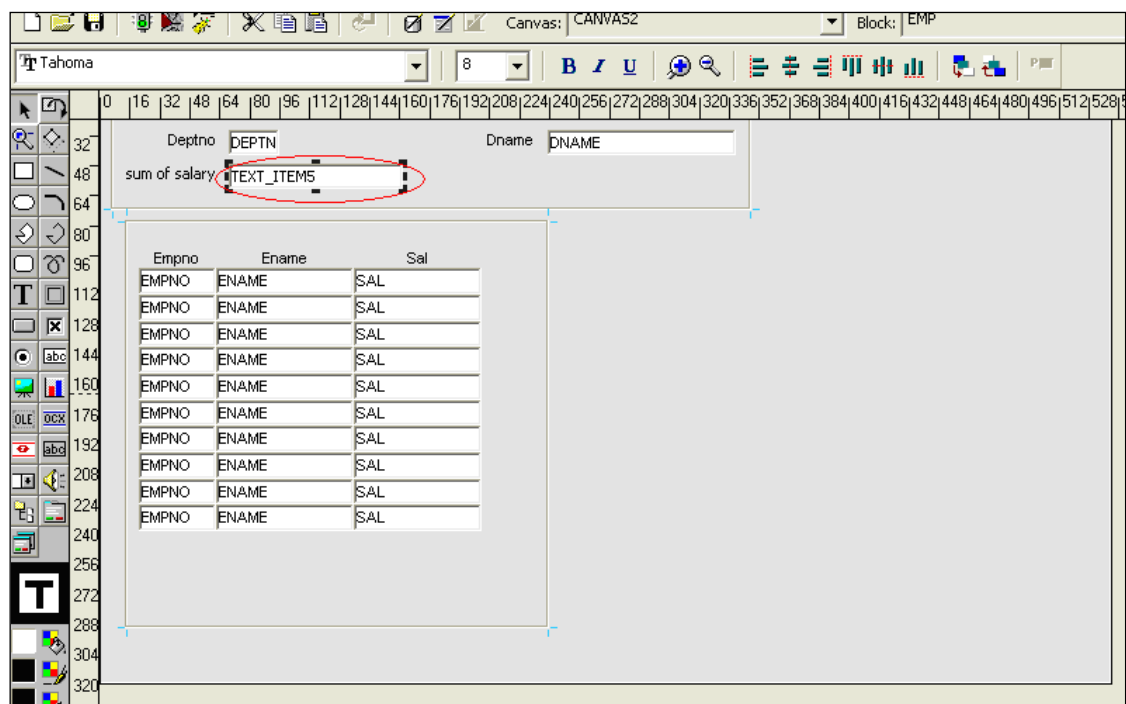
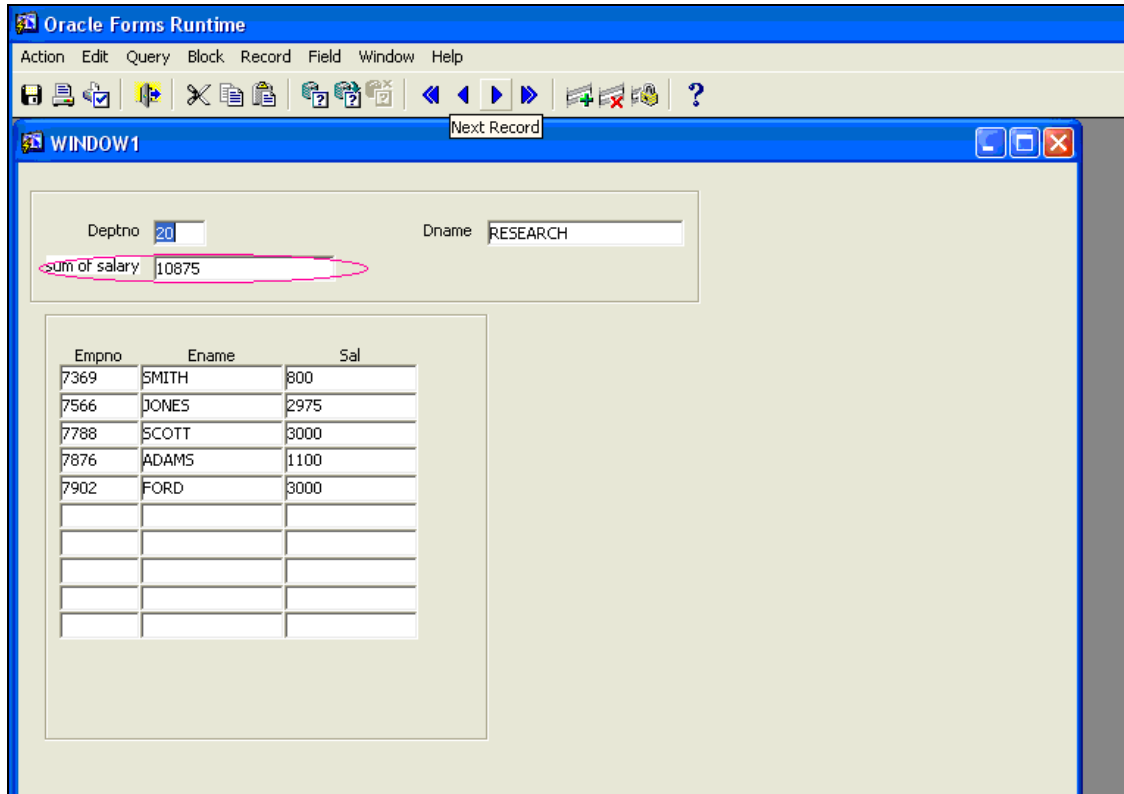


Figure 57: Text item selected which displays the total

Item: TEXT_ITEMS	
* General	
* Functional	
* Navigation	
* Data	
[-] Calculation	
<input checked="" type="checkbox"/> Calculation Mode	Summary
◦ Formula	
<input checked="" type="checkbox"/> Summary Function	Sum
<input checked="" type="checkbox"/> Summarized Block	EMP
<input checked="" type="checkbox"/> Summarized Item	SAL
[-] Records	
◦ Current Record Visual Attribute Group	<Null>
<input checked="" type="checkbox"/> Distance Between Records	14
<input checked="" type="checkbox"/> Number of Items Displayed	1
* Database	
* List of Values (LOV)	
* Editor	
* Physical	
* Visual Attributes	
* Color	

Figure 58: Property palette for the above selected text item



The screenshot shows the Oracle Forms Runtime window titled 'WINDOW1'. It contains a form with the following elements:

- Deptno**: A text field containing the value '20'.
- Dname**: A text field containing the value 'RESEARCH'.
- sum of salary**: A text field containing the value '10875', which is circled in pink.
- Table**: A table with three columns: Empno, Ename, and Sal. It contains five rows of data.

Empno	Ename	Sal
7369	SMITH	800
7566	JONES	2975
7788	SCOTT	3000
7876	ADAMS	1100
7902	FORD	3000

Figure 59: execution of the form shows the total

- 4.2. Calculate the maximum and minimum salaries of each department.(To Do)
- 4.3. Add commission to employees who presently has null commission where the commission should be 5% of salary.(To Do)

Lab 5. Triggers

Goals	<ul style="list-style-type: none"> Create a form which uses triggers.
Time	2.5 hr

The following example shows how to use a button pressed trigger.

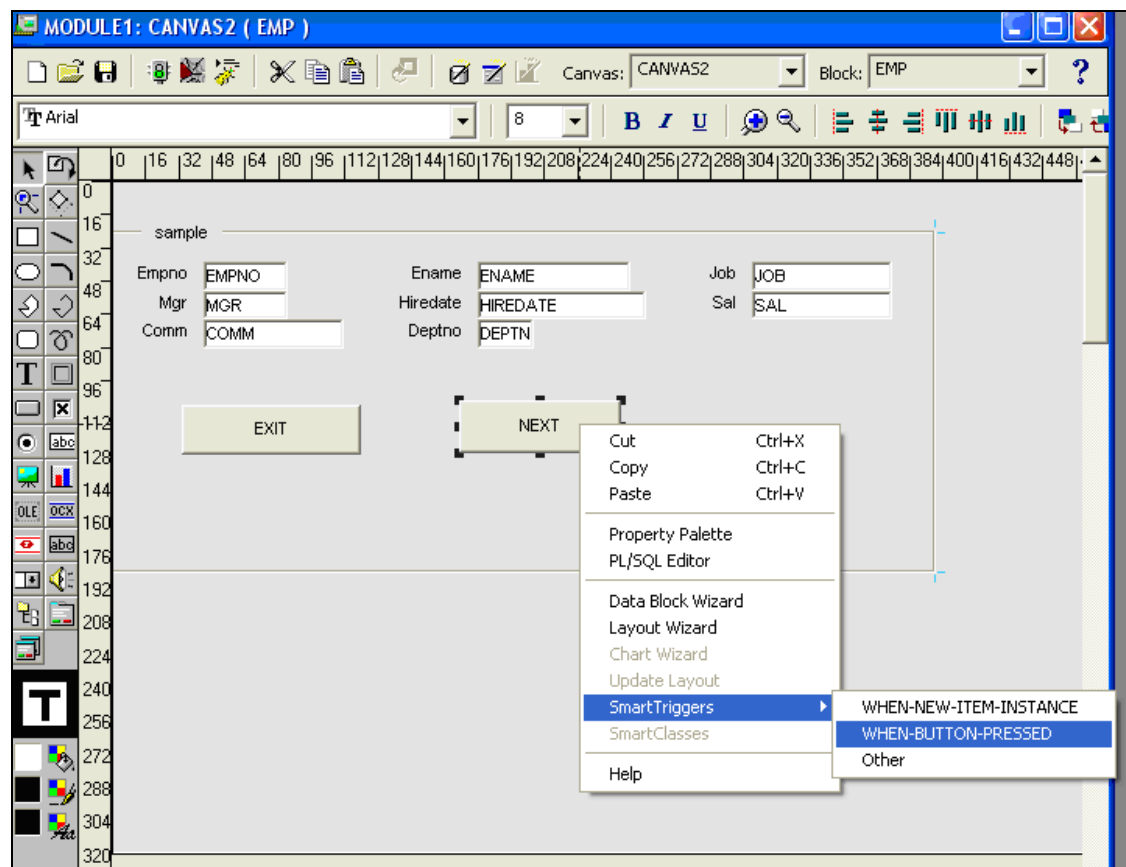


Figure 60: Selecting PL/SQL editor window for when button pressed trigger



Figure 61: PL/SQL editor for when button pressed trigger

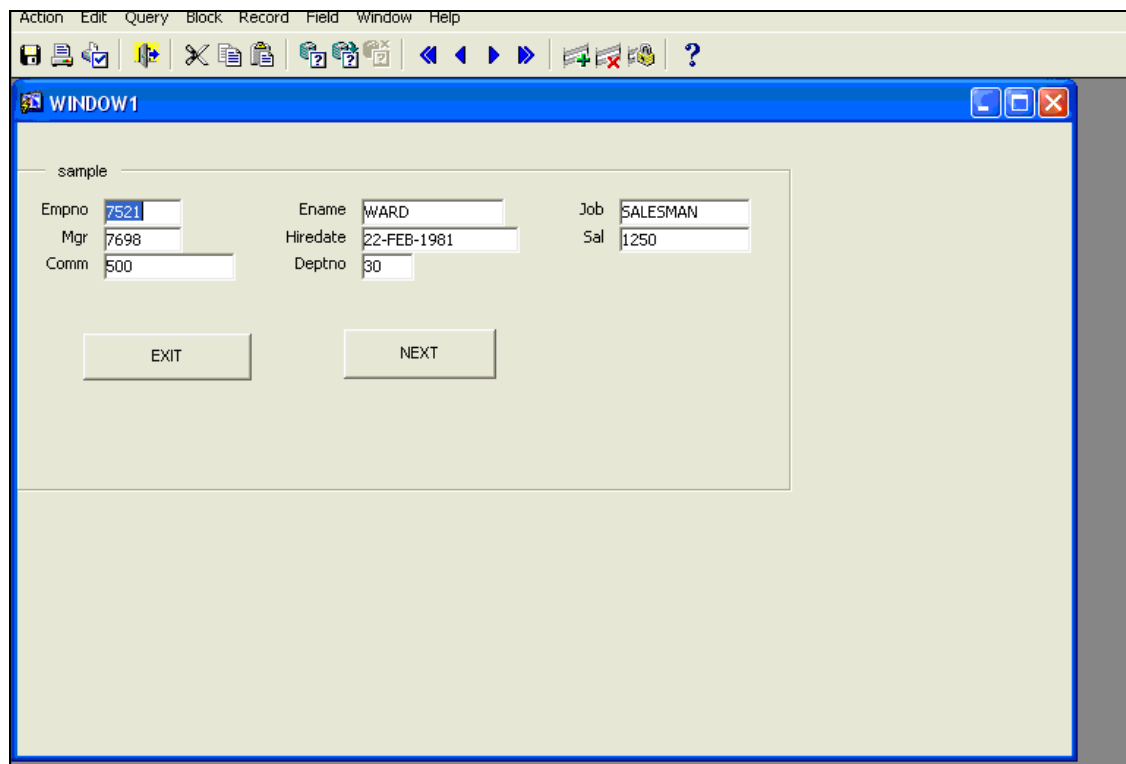


Figure 62: Execution of the form

Built-in trigger:

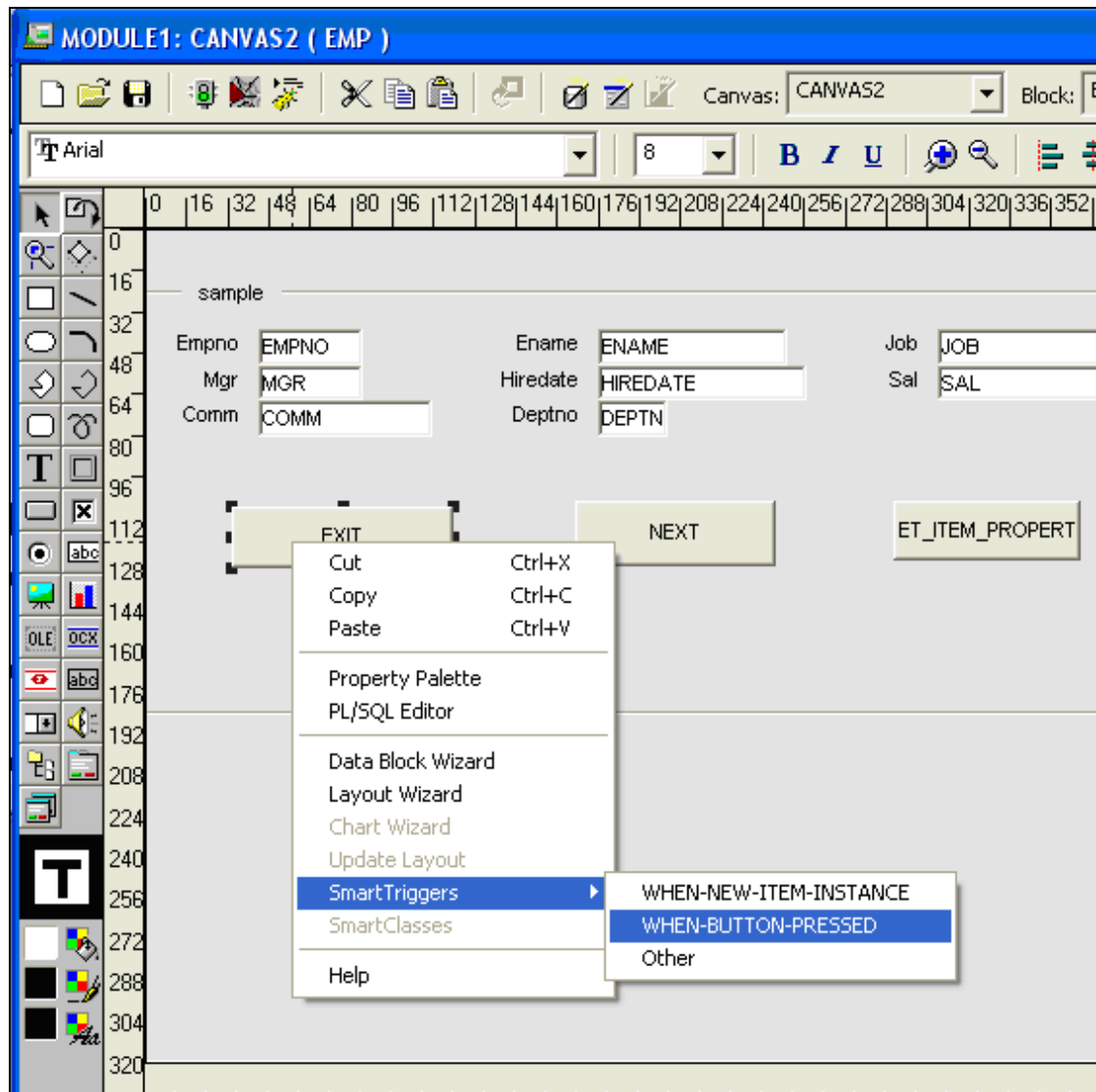
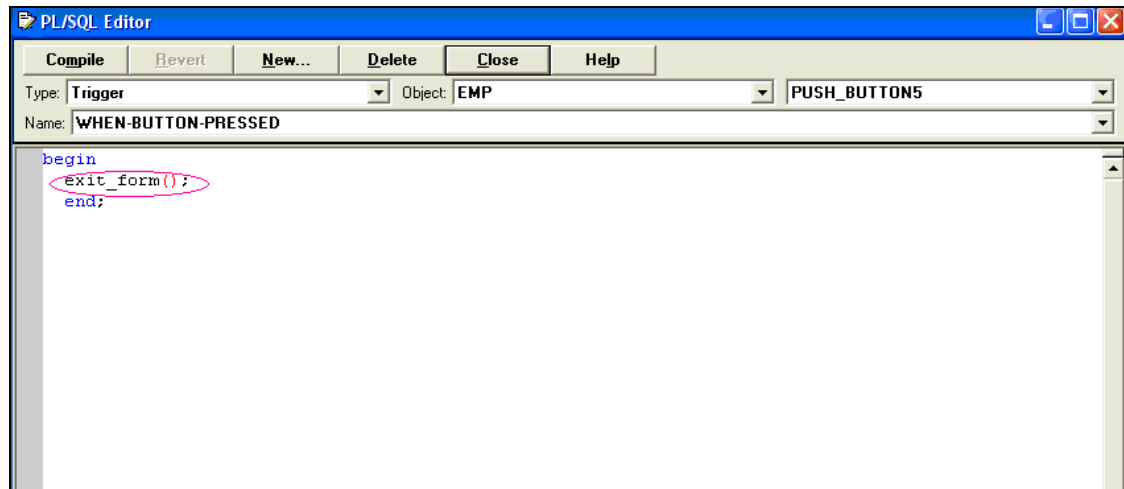


Figure 63: Selecting PL/SQL editor window for when button pressed trigger



To-do:

- 5.1. Create a form which shows details of a particular department by entering the dept no.
- 5.2. Create a form with a search button which while pressed will automatically execute the codes.

Lab 6. Validation

Goals	<ul style="list-style-type: none"> Create a form which uses validation.
Time	2.5 hr

The following example validates the primary key constraint of employee number in employee table

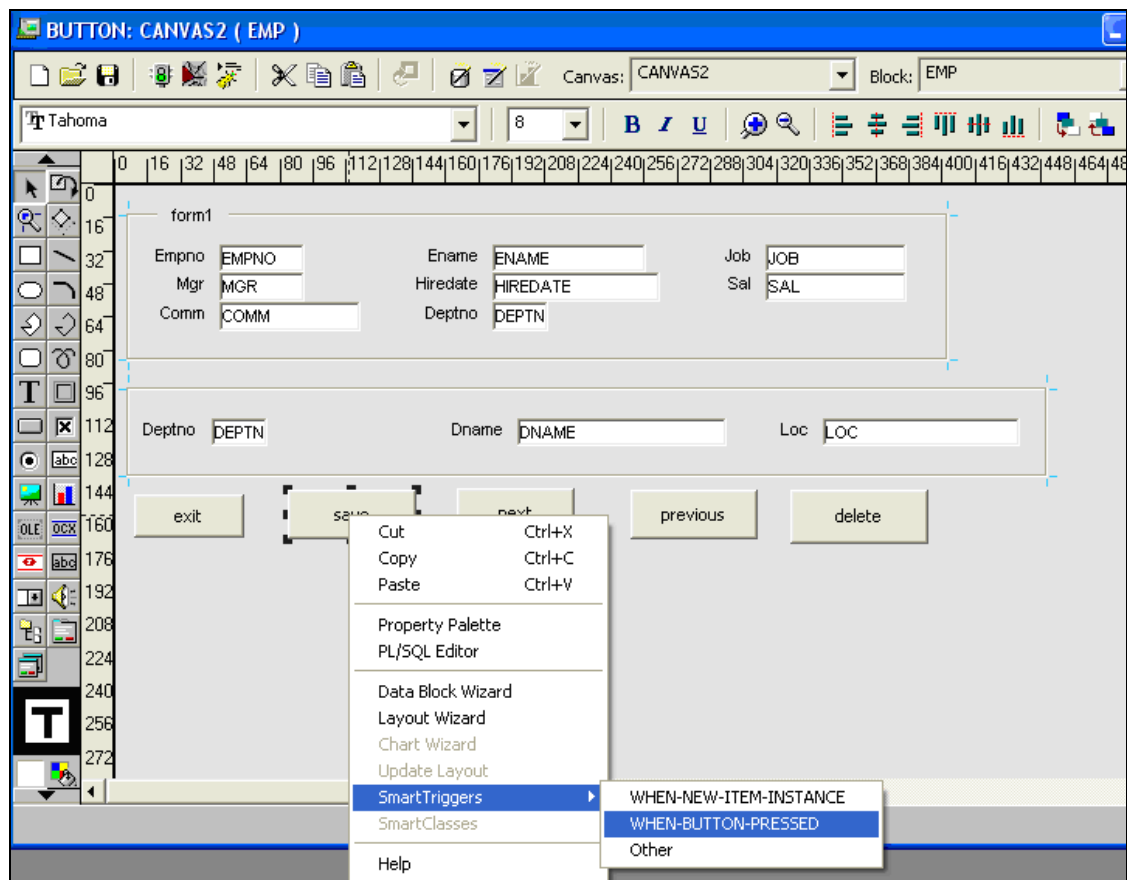


Figure 64: Selecting PL/SQL editor window for when button pressed trigger

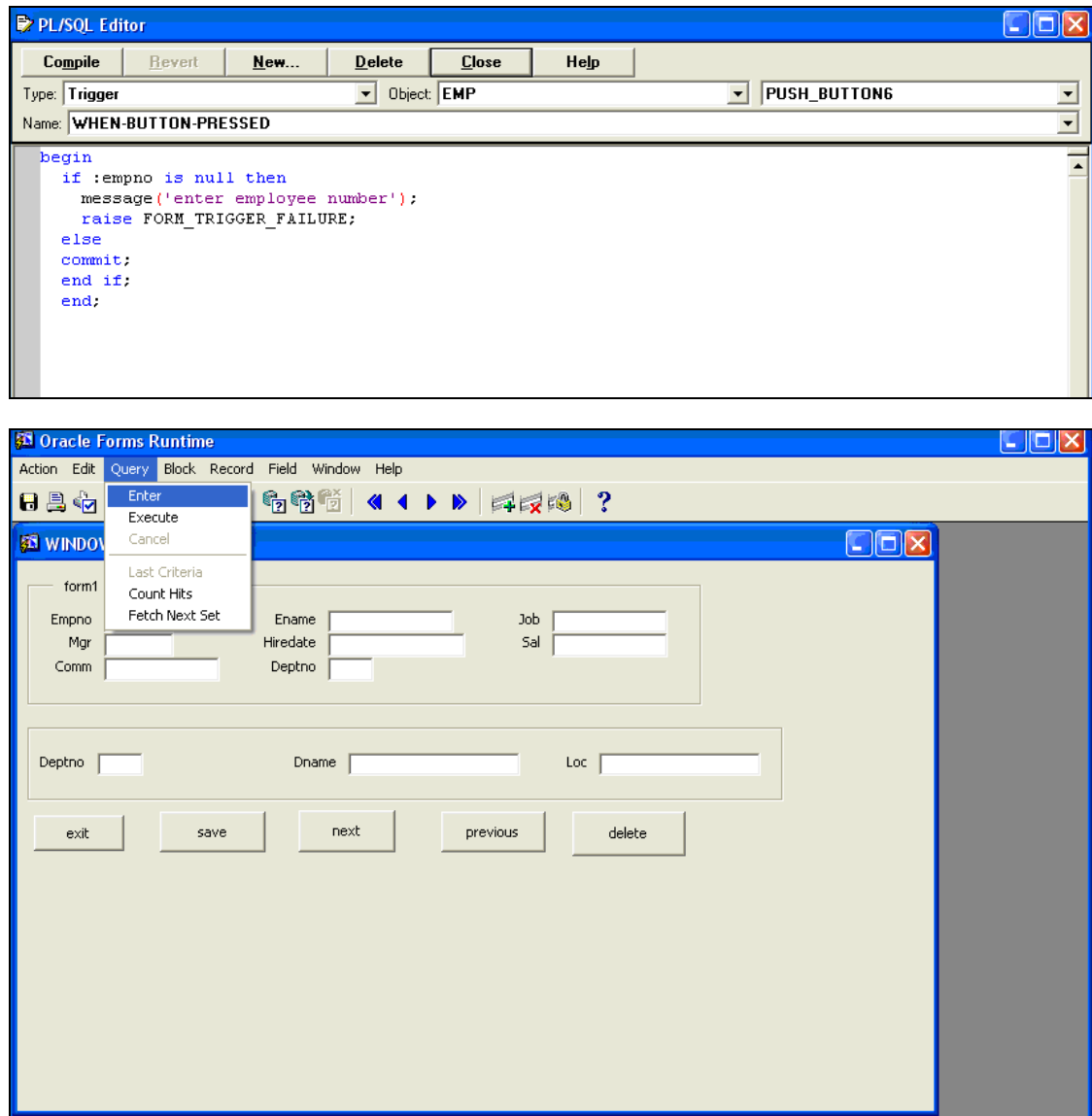
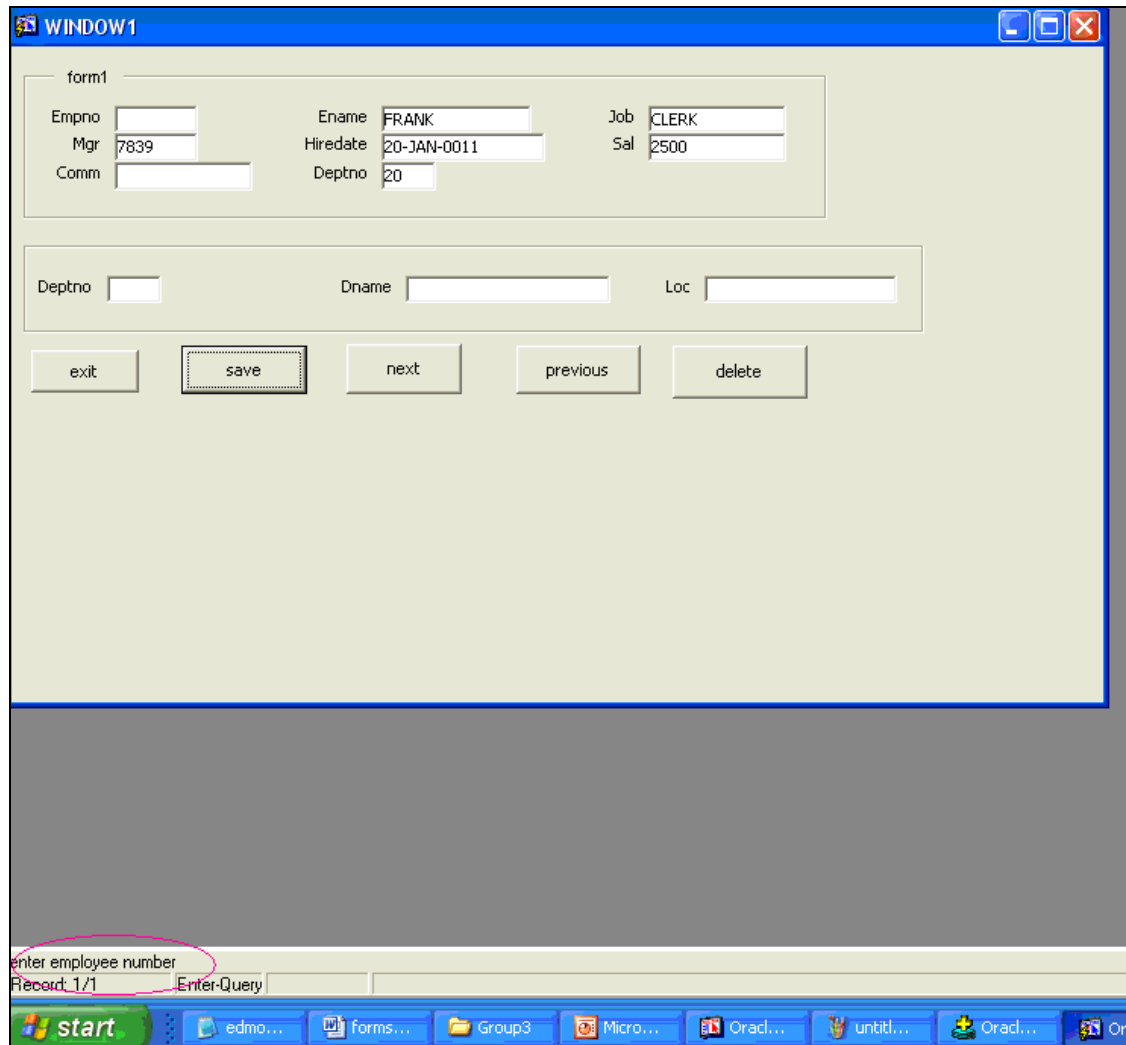


Figure 65: Execution window of the form



WINDOW1

form1

Empno		Ename	FRANK	Job	CLERK
Mgr	7839	Hiredate	20-JAN-0011	Sal	2500
Comm		Deptno	20		

Deptno Dname Loc

enter employee number
Record: 1/1 Enter-Query

6.1. Insert record and show error message if hiredate is higher than sysdate. (To Do)

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