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Tool: Oracle 11g expression
CMD: SQLPLUS

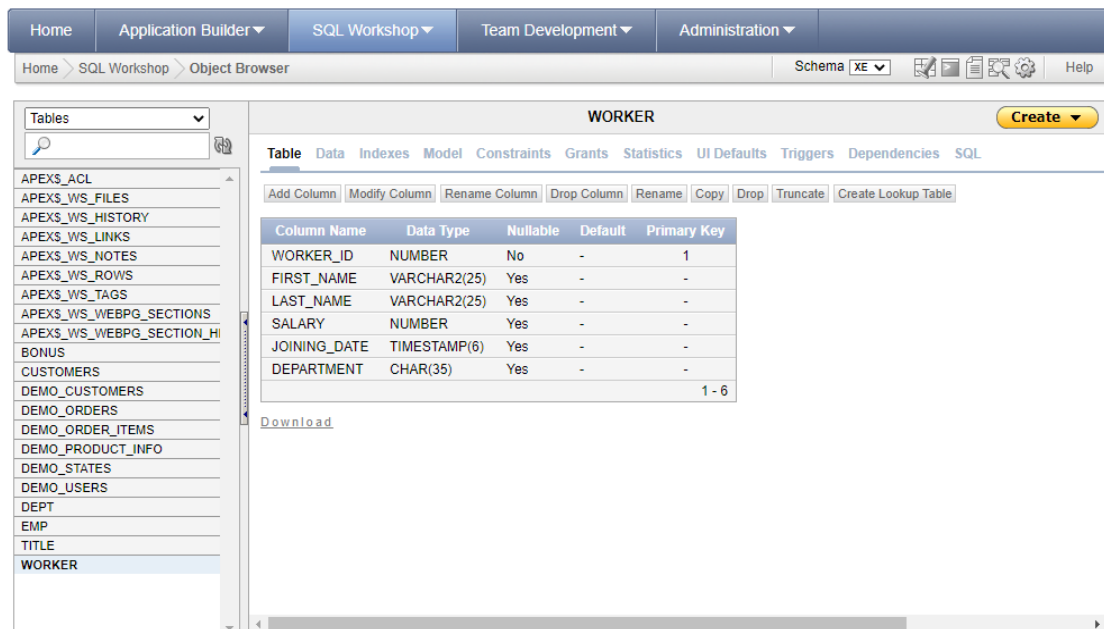
DDL PART:

*Schema design:

- Defining the table Worker
- WORKER_ID is the Primary Key

```
CREATE TABLE Worker (WORKER_ID INT PRIMARY KEY, FIRST_NAME VARCHAR(25),  
LAST_NAME VARCHAR(25), SALARY INT, JOINING_DATE TIMESTAMP, DEPARTMENT  
CHAR(35));
```

TABLE schema



The screenshot displays the Oracle SQL Developer interface. The top navigation bar includes 'Home', 'Application Builder', 'SQL Workshop', 'Team Development', and 'Administration'. The 'SQL Workshop' tab is active, showing the 'Object Browser' on the left and the 'Table' view for the 'WORKER' table on the right. The 'Table' view shows the following columns:

Column Name	Data Type	Nullable	Default	Primary Key
WORKER_ID	NUMBER	No	-	1
FIRST_NAME	VARCHAR2(25)	Yes	-	-
LAST_NAME	VARCHAR2(25)	Yes	-	-
SALARY	NUMBER	Yes	-	-
JOINING_DATE	TIMESTAMP(6)	Yes	-	-
DEPARTMENT	CHAR(35)	Yes	-	-

The 'Primary Key' column indicates that WORKER_ID is the primary key (1) and the other columns are not (0). The 'Download' button is visible at the bottom of the table view.

- Defining the table Title
- WORKER_REF_ID is the foreign key in referenced with WORKER_ID

INPUT:

```
CREATE TABLE Title (WORKER_REF_ID INT references Worker(WORKER_ID)
, WORKER_TITLE VARCHAR(25), AFFECTED_FROM TIMESTAMP);
```

TABLE schema

The screenshot shows the Oracle Application Express interface. The top navigation bar includes 'Home', 'Application Builder', 'SQL Workshop', 'Team Development', and 'Administration'. The 'SQL Workshop' tab is active, and the 'Object Browser' is displayed. The 'Tables' list on the left includes 'TITLE' and 'WORKER'. The 'TITLE' table is selected, and its schema is shown in the main pane. The schema table has the following columns:

Column Name	Data Type	Nullable	Default	Primary Key
WORKER_REF_ID	NUMBER	Yes	-	-
WORKER_TITLE	VARCHAR2(25)	Yes	-	-
AFFECTED_FROM	TIMESTAMP(6)	Yes	-	-

The 'Download' button is visible below the schema table.

INPUT:

- Defining the table Bonus
- Worker_Ref_Id is the foreign key

```
CREATE TABLE Bonus (WORKER_REF_ID INT references Worker(WORKER_ID) ,
BONUS_DATE TIMESTAMP, BONUS_AMOUNT INT);
```

Table Schema:

Home Application Builder SQL Workshop Team Development Administration

Home > SQL Workshop > Object Browser Schema XE Help

Tables

APEXS_ACL
APEXS_WS_FILES
APEXS_WS_HISTORY
APEXS_WS_LINKS
APEXS_WS_NOTES
APEXS_WS_ROWS
APEXS_WS_TAGS
APEXS_WS_WEBPG_SECTIONS
APEXS_WS_WEBPG_SECTION_HI
BONUS
CUSTOMERS
DEMO_CUSTOMERS
DEMO_ORDERS
DEMO_ORDER_ITEMS
DEMO_PRODUCT_INFO
DEMO_STATES
DEMO_USERS
DEPT
EMP
TITLE
WORKER

BONUS

Table Data Indexes Model Constraints Grants Statistics UI Defaults Triggers Dependencies SQL

Add Column Modify Column Rename Column Drop Column Rename Copy Drop Truncate Create Lookup Table

Column Name	Data Type	Nullable	Default	Primary Key
WORKER_REF_ID	NUMBER	Yes	-	-
BONUS_DATE	TIMESTAMP(6)	Yes	-	-
BONUS_AMOUNT	NUMBER	Yes	-	-
1 - 3				

[Download](#)

- DATA INSERTION/table entry

- input data in the table Worker

INPUT:

INSERT INTO Worker

VALUES(001, 'Monika', 'Arora', 100000,
timestamp '2014-02-20 09:00:00', 'HR');

VALUES(002, 'Niharika', 'Verma', 80000, timestamp '2014-06-11 09:00:00', 'Admin');

VALUES(003, 'Vishal', 'Singhal', 300000, timestamp '2014-02-20 09:00:00', 'HR');

VALUES(004, 'Amitabh', 'Singh', 500000, timestamp '2014-02-20 09:00:00', 'Admin');

VALUES(005, 'Vivek', 'Bhati', 500000, timestamp '2014-06-11 09:00:00', 'Admin');

VALUES(006, 'Vipul', 'Diwan', 200000, timestamp '2014-06-11 09:00:00', 'Account');

VALUES(007, 'Satish', 'Kumar', 75000, timestamp '2014-01-20 09:00:00', 'Account');

VALUES(008, 'Geetika', 'Chauhan', 90000, timestamp '2014-04-11 09:00:00', 'Admin');

Table Data:

ORACLE® Application Express Welcome XE ([Logout](#))

Home Application Builder ▼ SQL Workshop ▼ Team Development ▼ Administration ▼

Home > SQL Workshop > Object Browser Schema **XE** Help

Tables

 \APEXS_ACL
 \APEXS_WS_FILES
 \APEXS_WS_HISTORY
 \APEXS_WS_LINKS
 \APEXS_WS_NOTES
 \APEXS_WS_ROWS
 \APEXS_WS_TAGS
 \APEXS_WS_WEBPG_SECTIONS
 \APEXS_WS_WEBPG_SECTION_HI
 \BONUS
 CUSTOMERS
 DEMO_CUSTOMERS
 DEMO_ORDERS
 DEMO_ORDER_ITEMS
 DEMO_PRODUCT_INFO
 DEMO_STATES
 DEMO_USERS
 DEPT
 EMP
 TITLE
WORKER

WORKER
 Table **Data** Indexes Model Constraints Grants Statistics UI Defaults Triggers Dependencies SQL
 Query Count Rows Insert Row

EDIT	WORKER_ID	FIRST_NAME	LAST_NAME	SALARY	JOINING_DATE	DEPARTMENT
	1	Monika	Arora	100000	20-FEB-14 09.00.00.000000 AM	HR
	2	Niharika	Verma	80000	11-JUN-14 09.00.00.000000 AM	Admin
	3	Vishal	Singhal	300000	20-FEB-14 09.00.00.000000 AM	HR
	4	Amitabh	Singh	500000	20-FEB-14 09.00.00.000000 AM	Admin
	5	Vivek	Bhati	500000	11-JUN-14 09.00.00.000000 AM	Admin
	6	Vipul	Diwan	200000	11-JUN-14 09.00.00.000000 AM	Account
	7	Satish	Kumar	75000	20-JAN-14 09.00.00.000000 AM	Account
	8	Geetika	Chauhan	90000	11-APR-14 09.00.00.000000 AM	Admin

 row(s) 1 - 8 of 8
[Download](#)

- input data in the table Title

INPUT

INSERT INTO Title

VALUES(1, 'Manager', timestamp '2016-02-20 00:00:00');

VALUES(2, 'Executive', timestamp '2016-06-11 00:00:00');

VALUES(8, 'Executive', timestamp '2016-06-11 00:00:00');

VALUES(5, 'Asst. Manager', timestamp '2016-06-11 00:00:00');

VALUES(4, 'Asst. Manager', timestamp '2016-06-11 00:00:00');

VALUES(7, 'Executive', timestamp '2016-06-11 00:00:00');

VALUES(6, 'Lead', timestamp '2016-06-11 00:00:00');

VALUES(3, 'Lead', timestamp '2016-06-11 00:00:00');

Table Data:

Home Application Builder SQL Workshop Team Development Administration

Home > SQL Workshop > Object Browser Schema XE Help

Tables

- APEXS_ACL
- APEXS_WS_FILES
- APEXS_WS_HISTORY
- APEXS_WS_LINKS
- APEXS_WS_NOTES
- APEXS_WS_ROWS
- APEXS_WS_TAGS
- APEXS_WS_WEBPG_SECTIONS
- APEXS_WS_WEBPG_SECTION_HI
- BONUS
- CUSTOMERS
- DEMO_CUSTOMERS
- DEMO_ORDERS
- DEMO_ORDER_ITEMS
- DEMO_PRODUCT_INFO
- DEMO_STATES
- DEMO_USERS
- DEPT
- EMP
- TITLE**
- WORKER

TITLE

Table Data Indexes Model Constraints Grants Statistics UI Defaults Triggers Dependencies SQL

Query Count Rows Insert Row

EDIT	WORKER_REF_ID	WORKER_TITLE	AFFECTED_FROM
	1	Manager	20-FEB-16 12.00.00.000000 AM
	2	Executive	11-JUN-16 12.00.00.000000 AM
	8	Executive	11-JUN-16 12.00.00.000000 AM
	5	Manager	11-JUN-16 12.00.00.000000 AM
	4	Asst. Manager	11-JUN-16 12.00.00.000000 AM
	7	Executive	11-JUN-16 12.00.00.000000 AM
	6	Lead	11-JUN-16 12.00.00.000000 AM
	3	Lead	11-JUN-16 12.00.00.000000 AM

row(s) 1 - 8 of 8

[Download](#)

- input data in the table Bonus

INPUT

INSERT INTO Bonus

```
VALUES(1, timestamp '2016-02-20 00:00:00', 5000);  
VALUES(2, timestamp '2016-06-11 00:00:00', 3000);  
VALUES(3, timestamp '2016-02-20 00:00:00', 4000);  
VALUES(1, timestamp '2016-02-20 00:00:00', 4500);  
VALUES(2, timestamp '2016-06-11 00:00:00', 3500);
```

Table Data:

ORACLE® Application Express Welcome XE (Logout)

Home Application Builder SQL Workshop Team Development Administration

Home > SQL Workshop > Object Browser Schema XE Help

Tables

APEXS_ACL

APEXS_WS_FILES

APEXS_WS_HISTORY

APEXS_WS_LINKS

APEXS_WS_NOTES

APEXS_WS_ROWS

APEXS_WS_TAGS

APEXS_WS_WEBPG_SECTIONS

APEXS_WS_WEBPG_SECTION_HI

BONUS

CUSTOMERS

DEMO_CUSTOMERS

DEMO_ORDERS

DEMO_ORDER_ITEMS

DEMO_PRODUCT_INFO

DEMO_STATES

DEMO_USERS

DEPT

EMP

TITLE

WORKER

BONUS

Table Data Indexes Model Constraints Grants Statistics UI Defaults Triggers Dependencies SQL

Query Count Rows Insert Row

EDIT	WORKER_REF_ID	BONUS_DATE	BONUS_AMOUNT
	1	20-FEB-16 12.00.00.000000 AM	5000
	2	11-JUN-16 12.00.00.000000 AM	3000
	3	20-FEB-16 12.00.00.000000 AM	4000
	1	20-FEB-16 12.00.00.000000 AM	4500
	2	11-JUN-16 12.00.00.000000 AM	3500

row(s) 1 - 5 of 5

Download

DML PART:

●QUERY

```
SELECT (worker.first_name||' '||worker.last_name) as
fullname,WORKER_TITLE,Worker.DEPARTMENT,WORKER.SALARY,BONUS.BONUS_AMOUNT,
count(*) over(partition by department) occurrences
FROM Worker
LEFT JOIN Title ON worker.worker_id=Title.worker_ref_id
LEFT JOIN Bonus ON Worker.WORKER_ID=Bonus.WORKER_REF_ID
where substr(worker.department,1,1)='A' AND (worker.first_name||worker.last_name like '%A%'
or worker.first_name||worker.last_name like '%e%' or worker.first_name||worker.last_name
like '%i%' or worker.first_name||worker.last_name like '%o%' or
worker.first_name||worker.last_name like '%u%')
```

```

AND JOINING_DATE<to_timestamp('2014-6-11', 'YYYY-MM-DD')
Group by department , (worker.first_name||'
'||worker.last_name),WORKER_TITLE,WORKER.SALARY,BONUS.BONUS_AMOUNT
ORDER BY (worker.first_name||' '||worker.last_name) ASC;

```

```

Run SQL Command Line
SQL> SELECT (worker.first_name||' '||worker.last_name) as fullname,WORKER_TITLE,Worker.DEPARTMENT,WORKER.SALARY,BONUS.BONUS_AMOUNT,
2 count(*) over(partition by department) occurrences
3 FROM Worker
4 LEFT JOIN Title ON worker.worker_id=Title.worker_ref_id
5 LEFT JOIN Bonus ON Worker.WORKER_ID=Bonus.WORKER_REF_ID
6 where substr(worker.department,1,1)='A' AND (worker.first_name||worker.last_name like '%A%' or worker.first_name||worker.last_name like '%e%' or worker.first_name||worker.last_name like '%i%' or worker.first_name||worker.last_name like '%o%' or worker.first_name||worker.last_name like '%u%')
7 AND JOINING_DATE<to_timestamp('2014-6-11', 'YYYY-MM-DD')
8 Group by department , (worker.first_name||' '||worker.last_name),WORKER_TITLE,WORKER.SALARY,BONUS.BONUS_AMOUNT
9 ORDER BY (worker.first_name||' '||worker.last_name) ASC;

FULLNAME                                WORKER_TITLE
-----
DEPARTMENT                               SALARY BONUS_AMOUNT OCCURRENCES
-----
Amitabh Singh                            Asst. Manager
Admin                                    500000
Geetika Chauhan                           Executive
Admin                                    90000
Satish Kumar                             Executive
Account                                  75000
SQL>

```