



Creating Views

Objectives

After completing this lesson, you should be able to do:

- Create simple and complex views
- Retrieve data from views

Lesson Agenda

- Overview of views
- Creating, modifying, and retrieving data from a view
- Dropping a view

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Database Objects

Object	Description
Table	Basic unit of storage; composed of rows
View	Logically represents subsets of data from one or more tables
Sequence	Generates numeric values
Index	Improves the performance of data retrieval queries
Synonym	Gives alternative names to objects

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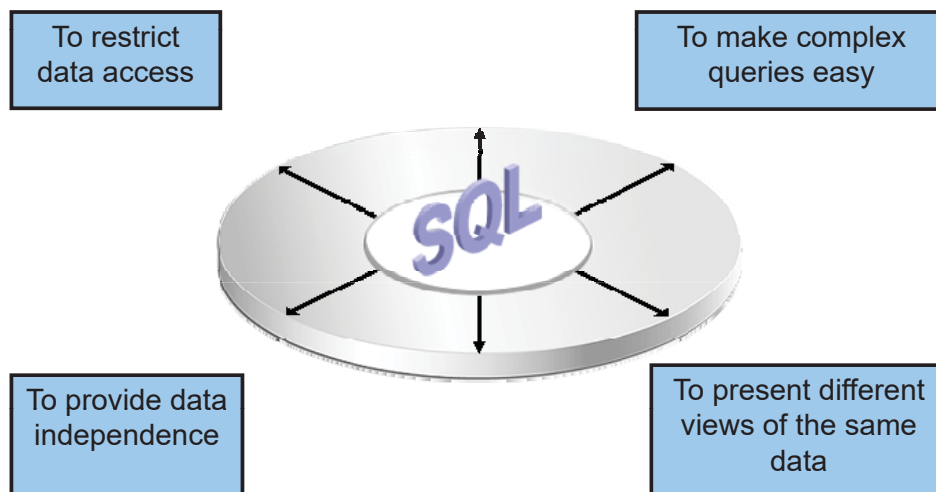
What Is a View?

EMPLOYEES table

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY
100	Steven	King	SKING	515.123.4567	17-JUN-87	AD_PRES	24000
101	Neena	Kochhar	NKOCHHAR	515.123.4568	21-SEP-89	AD_VP	17000
102	Lex	De Haan	LDEHAAN	515.123.4569	13-JAN-93	AD_VP	17000
103	Alexander	Hunold	AHUNOLD	590.423.4567	03-JAN-90	IT_PROG	9000
104	Bruce	Ernst	BERNST	590.423.4566	17-FEB-96	IT_PROG	6000
107	John	Abel	JABEL	590.423.4567	17-APR-98	IT_PROG	4200
121	Shelley	Higgins	SHIGGINS	515.123.8080	07-JUN-94	AC_ACCOUNT	6900
122	Walter	Taylor	WTAYLOR	515.123.8081	07-JUN-94	AC_ACCOUNT	5800
123	Jack	Fay	JFAY	515.123.8082	07-JUN-94	AC_ACCOUNT	5800
124	Pat	Haas	PHAAS	515.123.8083	07-JUN-94	AC_ACCOUNT	5800
125	Anthony	Pavlow	APAVLOW	515.123.8084	07-JUN-94	AC_ACCOUNT	5800
126	Timothy	Gietz	TGIETZ	515.123.8085	07-JUN-94	AC_ACCOUNT	5800
127	David	Turner	DTURNER	515.123.8086	07-JUN-94	AC_ACCOUNT	5800
128	Pliny	Fey	PFEY	515.123.8087	07-JUN-94	AC_ACCOUNT	5800
129	Renske	Adams	RADAMS	515.123.8088	07-JUN-94	AC_ACCOUNT	5800
130	Parto	Simons	PSIMONS	515.123.8089	07-JUN-94	AC_ACCOUNT	5800
131	Cheryl	Winters	CWINTERS	515.123.8090	07-JUN-94	AC_ACCOUNT	5800
132	David	Greenberg	DGREENBERG	515.123.8091	07-JUN-94	AC_ACCOUNT	5800
133	Jay	Ford	JFORD	515.123.8092	07-JUN-94	AC_ACCOUNT	5800
134	Timothy	Gietz	TGIETZ	515.123.8093	07-JUN-94	AC_ACCOUNT	5800
135	David	Greenberg	DGREENBERG	515.123.8094	07-JUN-94	AC_ACCOUNT	5800
136	Jay	Ford	JFORD	515.123.8095	07-JUN-94	AC_ACCOUNT	5800
137	Timothy	Gietz	TGIETZ	515.123.8096	07-JUN-94	AC_ACCOUNT	5800
138	David	Greenberg	DGREENBERG	515.123.8097	07-JUN-94	AC_ACCOUNT	5800
139	Jay	Ford	JFORD	515.123.8098	07-JUN-94	AC_ACCOUNT	5800
140	Timothy	Gietz	TGIETZ	515.123.8099	07-JUN-94	AC_ACCOUNT	5800
141	David	Greenberg	DGREENBERG	515.123.8100	07-JUN-94	AC_ACCOUNT	5800
142	Jay	Ford	JFORD	515.123.8101	07-JUN-94	AC_ACCOUNT	5800
143	Timothy	Gietz	TGIETZ	515.123.8102	07-JUN-94	AC_ACCOUNT	5800
144	David	Greenberg	DGREENBERG	515.123.8103	07-JUN-94	AC_ACCOUNT	5800
145	Jay	Ford	JFORD	515.123.8104	07-JUN-94	AC_ACCOUNT	5800
146	Timothy	Gietz	TGIETZ	515.123.8105	07-JUN-94	AC_ACCOUNT	5800
147	David	Greenberg	DGREENBERG	515.123.8106	07-JUN-94	AC_ACCOUNT	5800
148	Jay	Ford	JFORD	515.123.8107	07-JUN-94	AC_ACCOUNT	5800
149	Timothy	Gietz	TGIETZ	515.123.8108	07-JUN-94	AC_ACCOUNT	5800
150	David	Greenberg	DGREENBERG	515.123.8109	07-JUN-94	AC_ACCOUNT	5800
151	Jay	Ford	JFORD	515.123.8110	07-JUN-94	AC_ACCOUNT	5800
152	Timothy	Gietz	TGIETZ	515.123.8111	07-JUN-94	AC_ACCOUNT	5800
153	David	Greenberg	DGREENBERG	515.123.8112	07-JUN-94	AC_ACCOUNT	5800
154	Jay	Ford	JFORD	515.123.8113	07-JUN-94	AC_ACCOUNT	5800
155	Timothy	Gietz	TGIETZ	515.123.8114	07-JUN-94	AC_ACCOUNT	5800
156	David	Greenberg	DGREENBERG	515.123.8115	07-JUN-94	AC_ACCOUNT	5800
157	Jay	Ford	JFORD	515.123.8116	07-JUN-94	AC_ACCOUNT	5800
158	Timothy	Gietz	TGIETZ	515.123.8117	07-JUN-94	AC_ACCOUNT	5800
159	David	Greenberg	DGREENBERG	515.123.8118	07-JUN-94	AC_ACCOUNT	5800
160	Jay	Ford	JFORD	515.123.8119	07-JUN-94	AC_ACCOUNT	5800
161	Timothy	Gietz	TGIETZ	515.123.8120	07-JUN-94	AC_ACCOUNT	5800
162	David	Greenberg	DGREENBERG	515.123.8121	07-JUN-94	AC_ACCOUNT	5800
163	Jay	Ford	JFORD	515.123.8122	07-JUN-94	AC_ACCOUNT	5800
164	Timothy	Gietz	TGIETZ	515.123.8123	07-JUN-94	AC_ACCOUNT	5800
165	David	Greenberg	DGREENBERG	515.123.8124	07-JUN-94	AC_ACCOUNT	5800
166	Jay	Ford	JFORD	515.123.8125	07-JUN-94	AC_ACCOUNT	5800
167	Timothy	Gietz	TGIETZ	515.123.8126	07-JUN-94	AC_ACCOUNT	5800
168	David	Greenberg	DGREENBERG	515.123.8127	07-JUN-94	AC_ACCOUNT	5800
169	Jay	Ford	JFORD	515.123.8128	07-JUN-94	AC_ACCOUNT	5800
170	Timothy	Gietz	TGIETZ	515.123.8129	07-JUN-94	AC_ACCOUNT	5800
171	David	Greenberg	DGREENBERG	515.123.8130	07-JUN-94	AC_ACCOUNT	5800
172	Jay	Ford	JFORD	515.123.8131	07-JUN-94	AC_ACCOUNT	5800
173	Timothy	Gietz	TGIETZ	515.123.8132	07-JUN-94	AC_ACCOUNT	5800
174	David	Greenberg	DGREENBERG	515.123.8133	07-JUN-94	AC_ACCOUNT	5800
175	Jay	Ford	JFORD	515.123.8134	07-JUN-94	AC_ACCOUNT	5800
176	Timothy	Gietz	TGIETZ	515.123.8135	07-JUN-94	AC_ACCOUNT	5800
177	David	Greenberg	DGREENBERG	515.123.8136	07-JUN-94	AC_ACCOUNT	5800
178	Jay	Ford	JFORD	515.123.8137	07-JUN-94	AC_ACCOUNT	5800
179	Timothy	Gietz	TGIETZ	515.123.8138	07-JUN-94	AC_ACCOUNT	5800
180	David	Greenberg	DGREENBERG	515.123.8139	07-JUN-94	AC_ACCOUNT	5800
181	Jay	Ford	JFORD	515.123.8140	07-JUN-94	AC_ACCOUNT	5800
182	Timothy	Gietz	TGIETZ	515.123.8141	07-JUN-94	AC_ACCOUNT	5800
183	David	Greenberg	DGREENBERG	515.123.8142	07-JUN-94	AC_ACCOUNT	5800
184	Jay	Ford	JFORD	515.123.8143	07-JUN-94	AC_ACCOUNT	5800
185	Timothy	Gietz	TGIETZ	515.123.8144	07-JUN-94	AC_ACCOUNT	5800
186	David	Greenberg	DGREENBERG	515.123.8145	07-JUN-94	AC_ACCOUNT	5800
187	Jay	Ford	JFORD	515.123.8146	07-JUN-94	AC_ACCOUNT	5800
188	Timothy	Gietz	TGIETZ	515.123.8147	07-JUN-94	AC_ACCOUNT	5800
189	David	Greenberg	DGREENBERG	515.123.8148	07-JUN-94	AC_ACCOUNT	5800
190	Jay	Ford	JFORD	515.123.8149	07-JUN-94	AC_ACCOUNT	5800
191	Timothy	Gietz	TGIETZ	515.123.8150	07-JUN-94	AC_ACCOUNT	5800
192	David	Greenberg	DGREENBERG	515.123.8151	07-JUN-94	AC_ACCOUNT	5800
193	Jay	Ford	JFORD	515.123.8152	07-JUN-94	AC_ACCOUNT	5800
194	Timothy	Gietz	TGIETZ	515.123.8153	07-JUN-94	AC_ACCOUNT	5800
195	David	Greenberg	DGREENBERG	515.123.8154	07-JUN-94	AC_ACCOUNT	5800
196	Jay	Ford	JFORD	515.123.8155	07-JUN-94	AC_ACCOUNT	5800
197	Timothy	Gietz	TGIETZ	515.123.8156	07-JUN-94	AC_ACCOUNT	5800
198	David	Greenberg	DGREENBERG	515.123.8157	07-JUN-94	AC_ACCOUNT	5800
199	Jay	Ford	JFORD	515.123.8158	07-JUN-94	AC_ACCOUNT	5800
200	Timothy	Gietz	TGIETZ	515.123.8159	07-JUN-94	AC_ACCOUNT	5800

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Advantages of Views



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Simple Views and Complex Views

Feature	Simple Views	Complex Views
Number of tables	One	One or more
Contain functions	No	Yes
Contain groups of data	No	Yes
DML operations through a view	Yes	Not always

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Lesson Agenda

- Overview of views
- Creating, modifying, and retrieving data from a view
- Dropping a view

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Creating a View

- You embed a subquery in the CREATE VIEW statement:

```
CREATE [OR REPLACE] [FORCE|NOFORCE] VIEW view
  [(alias[, alias]...)]
  AS subquery
[WITH CHECK OPTION [CONSTRAINT constraint]]
[WITH READ ONLY [CONSTRAINT constraint]];
```

- The subquery can contain complex SELECT syntax.

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Creating a View

- Create the EMPVU80 view, which contains details of the employees in department 80:

```
CREATE VIEW    empvu80
  AS SELECT    employee_id, last_name, salary
      FROM      employees
      WHERE     department_id = 80;
```

view EMPVU80 created.

- Describe the structure of the view by using the SQL*Plus DESCRIBE command:

```
DESCRIBE empvu80;
```

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Creating a View

- Create a view by using column aliases in the subquery:

```
CREATE VIEW  salvu50
AS SELECT   employee_id ID_NUMBER, last_name NAME,
           salary*12 ANN_SALARY
  FROM      employees
 WHERE      department_id = 50;
```

view SALVU50 created.

- Select the columns from this view by the given alias names.

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Retrieving Data from a View

```
SELECT *
FROM    salvu50;
```

	ID_NUMBER	NAME	ANN_SALARY
1	120	Weiss	96000
2	121	Fripp	98400
3	122	Kaufling	94800
4	123	Vollman	78000
5	124	Mourgos	69600
6	125	Nayer	38400
7	126	Mikkilineni	32400

...

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Modifying a View

- Modify the EMPVU80 view by using a CREATE OR REPLACE VIEW clause. Add an alias for each column name:

```
CREATE OR REPLACE VIEW empvu80
(id_number, name, sal, department_id)
AS SELECT  employee_id, first_name || ' '
           || last_name, salary, department_id
FROM      employees
WHERE     department_id = 80;
view EMPVU80 created.
```

- Column aliases in the CREATE OR REPLACE VIEW clause are listed in the same order as the columns in the subquery.

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Creating a Complex View

Create a complex view that contains group functions to display values from two tables:

```
CREATE OR REPLACE VIEW dept_sum_vu
(name, minsal, maxsal, avgsal)
AS SELECT  d.department_name, MIN(e.salary),
           MAX(e.salary), AVG(e.salary)
FROM      employees e JOIN departments d
USING     (department_id)
GROUP BY d.department_name;
view DEPT_SUM_VU created.
```

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Lesson Agenda

- Overview of views
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Removing a View

You can remove a view without losing data because a view is based on underlying tables in the database.

```
DROP VIEW view;
```

```
DROP VIEW empvu80;
```

```
view EMPVU80 dropped.
```

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Summary

In this lesson, you should have learned how to:

- Create, use, and remove views