

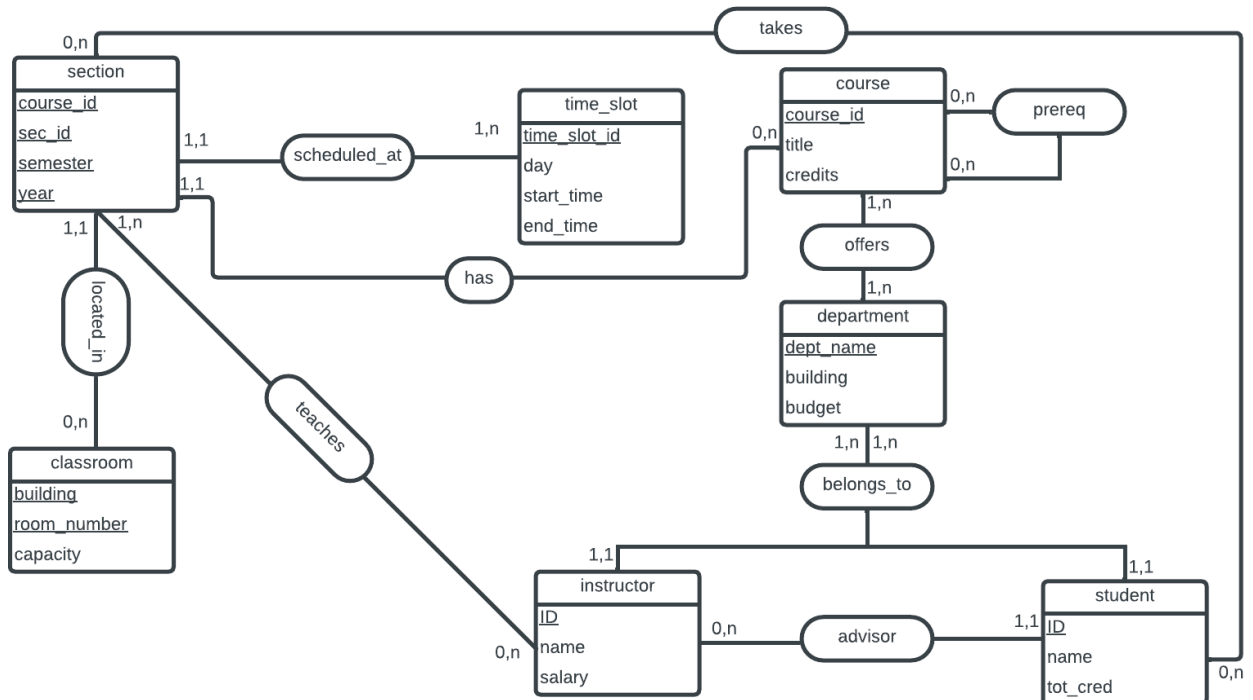
COMPTE-RENDU TP1 : BDA

Exercice 1:

1/ Définition de la table section:

```
CREATE TABLE Section(  
    course_id VARCHAR(8),  
    sec_id VARCHAR(8),  
    semester VARCHAR(6) CHECK( semester in  
('Fall','Winter','Spring','Summer'))  
    year numeric(4),  
    building varchar(15),  
    room_number varchar(7),  
    time_slot_id varchar(4),  
    primary key(course_id,sec_id,semester,year),  
    foreign key(course_id) references course,  
    foreign key(building,room_number) references classroom);
```

2/



3/ Création de la base de données sur APEX :

← → ↻ <https://apex.oracle.com/pls/apex/r/apex/sql-workshop/sqlcomm> 🌐 ☆

APEX App Builder ▾ **SQL Workshop** ▾ Team Development ▾ Gallery 🔍 Search 👤 ? ES

↑ **SQL Commands** Schema WKSP_CDZLTGASL2ROCA ▾ ⓘ

Language SQL ▾ ⓘ Rows 10 ▾ ⓘ Clear Command Find Tables Save Run

↶ ↷ 🔍 🖱️ A= ⚙️ ▾

```
1 create table classroom
2   (building      varchar(15),
3    room_number   varchar(7),
4    capacity      numeric(4,0),
5    primary key (building, room_number)
6   );
7
```

Results Explain Describe Saved SQL History

Table created.

0.05 seconds

← → ↻ <https://apex.oracle.com/pls/apex/r/apex/sql-workshop/sqlcomm> 🌐 ☆

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↑ **SQL Commands** Schema WKSP_CDZLTGASL2ROCA ▾ ⓘ

Language SQL ▾ ⓘ Rows 10 ▾ ⓘ Clear Command Find Tables Save Run

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```
1 create table department
2   (dept_name     varchar(20),
3    building       varchar(15),
4    budget        numeric(12,2),
5    primary key (dept_name)
6   );
```

Results Explain Describe Saved SQL History

Table created.

0.04 seconds

← → ↻ <https://apex.oracle.com/pls/apex/r/apex/sql-workshop/sqlcomm> 🌐 ⭐

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↑ SQL Commands Schema WKSP_CDZLTGASL2ROCA ⓘ

Language SQL ⓘ Rows 10 ⓘ Clear Command Find Tables Save Run

↺ ↻ 🔍 📌 A:: ⚙️ ▾

```
1 create table course
2   (course_id    varchar(8),
3     title       varchar(50),
4     dept_name   varchar(20),
5     credits     numeric(2,0),
6     primary key (course_id),
7     foreign key (dept_name) references department
8   );
```

Results Explain Describe Saved SQL History

Table created.

0.05 seconds

← → ↻ <https://apex.oracle.com/pls/apex/r/apex/sql-workshop/sqlcomm> 🌐 ⭐

APEX App Builder ▾ **SQL Workshop** ▾ Team Development ▾ Gallery 🔍 Search 👤 ? ES

↑ SQL Commands Schema WKSP_CDZLTGASL2ROCA ⓘ

Language SQL ⓘ Rows 10 ⓘ Clear Command Find Tables Save Run

↺ ↻ 🔍 📌 A:: ⚙️ ▾

```
1 create table teacher
2   (ID           varchar(5),
3     name        varchar(20),
4     dept_name   varchar(20),
5     salary      numeric(8,2),
6     primary key (ID),
7     foreign key (dept_name) references department
8   );
```

Results Explain Describe Saved SQL History

Table created.

0.05 seconds

← → ↻ https://apex.oracle.com/pls/apex/r/apex/sql-workshop/sqlcommn ⚙️ ☆

APEX App Builder ▾ **SQL Workshop** ▾ Team Development ▾ Gallery 🔍 Search 👤 ? ES

↑ **SQL Commands** Schema WKSP_CDZLTGASL2ROCA ?

Language SQL ? Rows 10 ? Clear Command Find Tables Save Run

↶ ↷ 🔍 A:: ⚙️ ▾

```
1 CREATE TABLE Section([
2     course_id VARCHAR(8),
3     sec_id VARCHAR(8),
4     semester VARCHAR(6) CHECK( semester in ('Fall','Winter','Spring','Summer')),
5     year numeric(4),
6     building varchar(15),
7     room_number varchar(7),
8     time_slot_id varchar(4),
9     primary key(course_id,sec_id,semester,year),
10    foreign key(course_id) references course,
11    foreign key(building,room_number) references classroom]);
12
```

Results Explain Describe Saved SQL History

Table created.

0.07 seconds

← → ↻ https://apex.oracle.com/pls/apex/r/apex/sql-workshop/sqlcommn ⚙️ ☆

APEX App Builder ▾ **SQL Workshop** ▾ Team Development ▾ Gallery 🔍 Search 👤 ? ES

↑ **SQL Commands** Schema WKSP_CDZLTGASL2ROCA ?

Language SQL ? Rows 10 ? Clear Command Find Tables Save Run

↶ ↷ 🔍 A:: ⚙️ ▾

```
1 create table teaches
2     (ID          varchar(5),
3     course_id    varchar(8),
4     sec_id       varchar(8),
5     semester     varchar(6),
6     year         numeric(4,0),
7     primary key  (ID, course_id, sec_id, semester, year),
8     foreign key  (course_id,sec_id, semester, year) references section,
9     foreign key  (ID) references teacher
10 );
11
```

Results Explain Describe Saved SQL History

Table created.

0.06 seconds

← → ↻ <https://apex.oracle.com/pls/apex/r/apex/sql-workshop/sqlcomm> ☆

APEX App Builder SQL Workshop Team Development Gallery Search

↑ SQL Commands Schema WKSP_CDZLTGASL2ROCA

Language SQL Rows 10 Clear Command Find Tables Save Run

```
1 create table student
2   (ID          varchar(5),
3    name        varchar(20),
4    dept_name   varchar(20),
5    tot_cred    numeric(3,0),
6    primary key (ID),
7    foreign key (dept_name) references department
8  );
```

Results Explain Describe Saved SQL History

Table created.

0.05 seconds

← → ↻ <https://apex.oracle.com/pls/apex/r/apex/sql-workshop/sqlcomm> ☆

APEX App Builder SQL Workshop Team Development Gallery Search

↑ SQL Commands Schema WKSP_CDZLTGASL2ROCA

Language SQL Rows 10 Clear Command Find Tables Save Run

```
1 create table takes
2   (ID          varchar(5),
3    course_id   varchar(8),
4    sec_id      varchar(8),
5    semester    varchar(6),
6    year        numeric(4,0),
7    grade       varchar(2),
8    primary key (ID, course_id, sec_id, semester, year),
9    foreign key (course_id, sec_id, semester, year) references section,
10   foreign key (ID) references student
11  );
```

Results Explain Describe Saved SQL History

Table created.

0.05 seconds

← → ↻ https://apex.oracle.com/pls/apex/r/apex/sql-workshop/sqlcomn ⚙️ ☆

APEX App Builder ▾ **SQL Workshop** ▾ Team Development ▾ Gallery 🔍 Search 👤 ? ES

↑ SQL Commands Schema WKSP_CDZLTGASL2ROCA ?

Language SQL ? Rows 10 ? Clear Command Find Tables Save Run

↶ ↷ 🔍 📌 A:: ⚙️ ▾

```
1 create table advisor
2   (s_ID          varchar(5),
3    i_ID          varchar(5),
4    primary key (s_ID),
5    foreign key (i_ID) references teacher (ID),
6    foreign key (s_ID) references student (ID)
7   );
8
```

Results Explain Describe Saved SQL History

Table created.

0.07 seconds

← → ↻ https://apex.oracle.com/pls/apex/r/apex/sql-workshop/sqlcomn ⚙️ ☆

APEX App Builder ▾ **SQL Workshop** ▾ Team Development ▾ Gallery 🔍 Search 👤 ? ES

↑ SQL Commands Schema WKSP_CDZLTGASL2ROCA ?

Language SQL ? Rows 10 ? Clear Command Find Tables Save Run

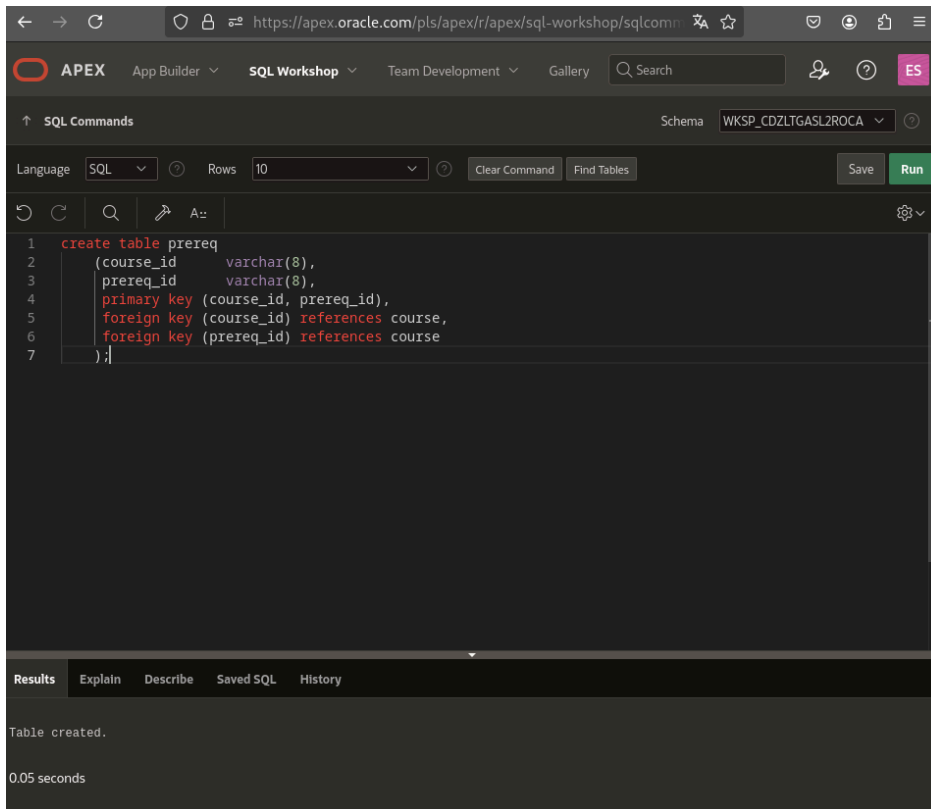
↶ ↷ 🔍 📌 A:: ⚙️ ▾

```
1 create table time_slot
2   (time_slot_id  varchar(4),
3    day           varchar(1),
4    start_hr      numeric(2),
5    start_min     numeric(2),
6    end_hr        numeric(2),
7    end_min       numeric(2),
8    primary key (time_slot_id, day, start_hr, start_min)
9   );
```

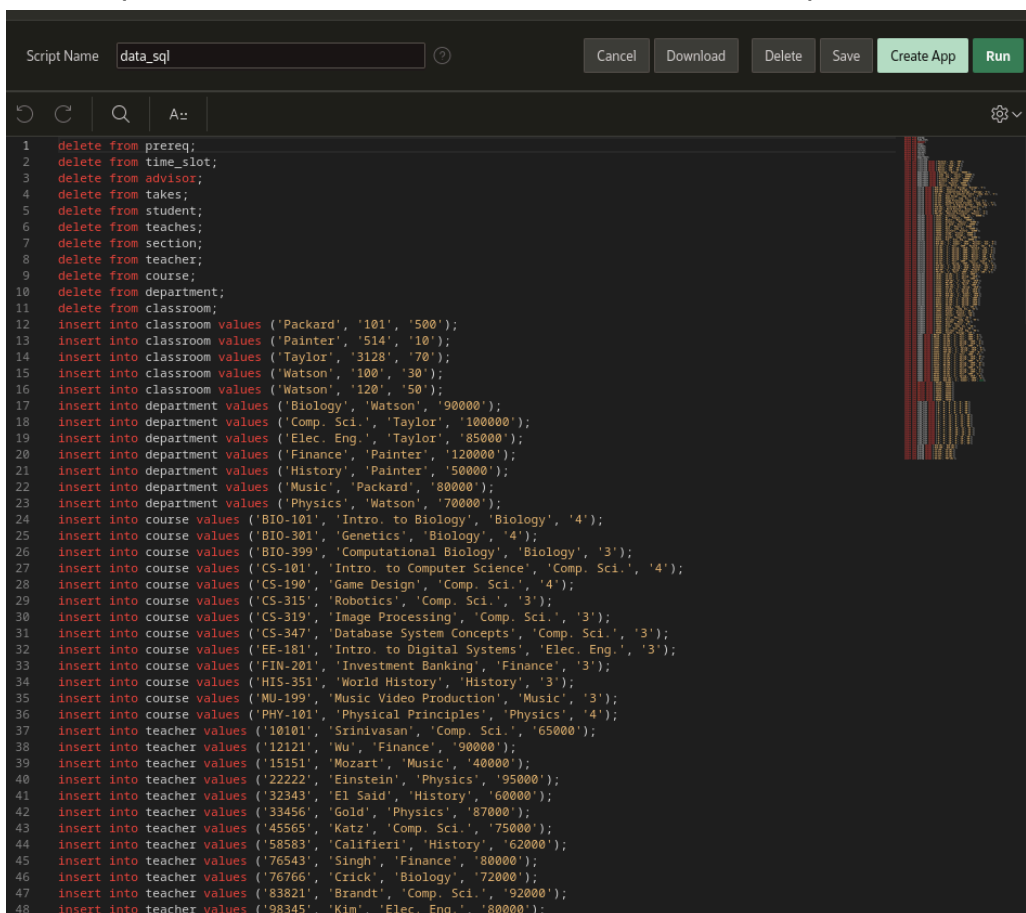
Results Explain Describe Saved SQL History

Table created.

0.05 seconds



3.2/ Peuplement de la base de données à l'aide d'un script sur APEX





Run Script

You have requested to run the following script. Please confirm your request.

Script Name	data_sql
Created	on 1/27/2025 8:13:02 AM by SADDEMELYES67@GMAIL.COM
Updated	on 1/27/2025 8:59:59 AM by SADDEMELYES67@GMAIL.COM
Number of Statements	149
Script Size in Bytes	9,789

Cancel

Run Now

← → ↻ https://apex.oracle.com/pls/apex/r/apex/sql-workshop/results? ...

APEX App Builder SQL Workshop Team Development Gallery Search

↑ SQL Scripts \ Results

Script: **data_sql** Status: **Complete**

View: ☐ Detail ☒ Summary Rows: 15

Number ↑	Elapsed	Statement	Feedback	Rows
1	0.02	delete from prereq	0 row(s) deleted.	0
2	0.03	delete from time_slot	0 row(s) deleted.	0
3	0.01	delete from advisor	0 row(s) deleted.	0
4	0.03	delete from takes	0 row(s) deleted.	0
5	0.01	delete from student	0 row(s) deleted.	0
6	0.02	delete from teaches	0 row(s) deleted.	0
7	0.02	delete from section	0 row(s) deleted.	0
8	0.01	delete from teacher	0 row(s) deleted.	0
9	0.01	delete from course	0 row(s) deleted.	0
10	0.00	delete from department	0 row(s) deleted.	0
11	0.00	delete from classroom	0 row(s) deleted.	0
12	0.03	insert into classroom values ('Packard', '101', '500')	1 row(s) inserted.	1
13	0.00	insert into classroom values ('Painter', '514', '10')	1 row(s) inserted.	1
14	0.01	insert into classroom values ('Taylor', '3128', '70')	1 row(s) inserted.	1
15	0.00	insert into classroom values ('Watson', '100', '30')	1 row(s) inserted.	1

Download

row(s) 1 - 15 of 149 [Next ▶](#)

149	149	0
Statements Processed	Successful	With Errors

4/ Insertion d'un nouveau cours:

```
INSERT INTO course(course_id,title,dept_name,credits) VALUES('BIO-101','Intro. to Biology','Biology',4)
```

← → ↺

https://apex.oracle.com/pls/apex/r/apex/sql-workshop/sqlcomm

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ES

↑ SQL Commands

Schema WKSP_CDZLTGASL2ROCA

Language SQL

Rows 10

Clear Command

Find Tables

Save

Run

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🔧

1 SELECT * FROM course;

Results

Explain

Describe

Saved SQL

History

COURSE_ID	TITLE	DEPT_NAME	CREDITS
BIO-101	Intro. to Biology	Biology	4
BIO-301	Genetics	Biology	4
BIO-399	Computational Biology	Biology	3
CS-101	Intro. to Computer Science	Comp. Sci.	4
CS-190	Game Design	Comp. Sci.	4
CS-315	Robotics	Comp. Sci.	3

Exercise 2:

1/

← → ↺

https://apex.oracle.com/pls/apex/r/apex/sql-workshop/sqlcomm

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↑ SQL Commands

Schema WKSP_CDZLTGASL2ROCA

Language SQL

Rows 10

Clear Command

Find Tables

Save

Run

↺ ↻ 🔍 📌 A-z

🔧

1 DESC section;

Results

Explain

Describe

Saved SQL

History

Object Type TABLE

Object SECTION

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
SECTION	COURSE_ID	VARCHAR2	8	-	-	1	-	-	-
	SEC_ID	VARCHAR2	8	-	-	2	-	-	-
	SEMESTER	VARCHAR2	6	-	-	3	-	-	-
	YEAR	NUMBER	-	4	0	4	-	-	-
	BUILDING	VARCHAR2	15	-	-	-	✓	-	-
	ROOM_NUMBER	VARCHAR2	7	-	-	-	✓	-	-
	TIME_SLOT_ID	VARCHAR2	4	-	-	-	✓	-	-

← → ↺ https://apex.oracle.com/pls/apex/r/apex/sql-workshop/sqlcomn

APEX App Builder SQL Workshop Team Development Gallery Search

↑ SQL Commands Schema WKSP_CDZLTGASL2ROCA

Language SQL Rows 10 Clear Command Find Tables Save Run

1 SELECT * FROM Section;

Results Explain Describe Saved SQL History

COURSE_ID	SEC_ID	SEMESTER	YEAR	BUILDING	ROOM_NUMBER	TIME_SLOT_ID
BIO-101	1	Summer	2009	Painter	514	B
BIO-301	1	Summer	2010	Painter	514	A
CS-101	1	Fall	2009	Packard	101	H
CS-101	1	Spring	2010	Packard	101	F
CS-190	1	Spring	2009	Taylor	3128	E
CS-190	2	Spring	2009	Taylor	3128	A
CS-315	1	Spring	2010	Watson	120	D
CS-319	1	Spring	2010	Watson	100	B
CS-319	2	Spring	2010	Taylor	3128	C
CS-347	1	Fall	2009	Taylor	3128	A

More than 10 rows available. Increase rows selector to view more rows.

2/

← → ↺ https://apex.oracle.com/pls/apex/r/apex/sql-workshop/sqlcomn

APEX App Builder SQL Workshop Team Development Gallery Search

↑ SQL Commands Schema WKSP_CDZLTGASL2ROCA

Language SQL Rows 10 Clear Command Find Tables Save Run

1 SELECT * FROM COURSE;

Results Explain Describe Saved SQL History

COURSE_ID	TITLE	DEPT_NAME	CREDITS
BIO-101	Intro. to Biology	Biology	4
BIO-301	Genetics	Biology	4
BIO-399	Computational Biology	Biology	3
CS-101	Intro. to Computer Science	Comp. Sci.	4
CS-190	Game Design	Comp. Sci.	4
CS-315	Robotics	Comp. Sci.	3
CS-319	Image Processing	Comp. Sci.	3
CS-347	Database System Concepts	Comp. Sci.	3
EE-181	Intro. to Digital Systems	Elec. Eng.	3
FIN-201	Investment Banking	Finance	3

More than 10 rows available. Increase rows selector to view more rows.

10 rows returned in 0.00 seconds Download

3/

The screenshot shows the APEX SQL Workshop interface. The top navigation bar includes 'APEX', 'App Builder', 'SQL Workshop', 'Team Development', and 'Gallery'. The 'SQL Commands' tab is active, and the schema is set to 'WKSP_CDZLTGASL2ROCA'. The query editor contains the following SQL statement:

```
1 SELECT title,dept_name from course;
```

The 'Results' tab is selected, displaying a table with two columns: 'TITLE' and 'DEPT_NAME'. The table contains 10 rows of data. Below the table, a message states 'More than 10 rows available. Increase rows selector to view more rows.' and '10 rows returned in 0.01 seconds' with a 'Download' link.

TITLE	DEPT_NAME
Intro. to Biology	Biology
Genetics	Biology
Computational Biology	Biology
Intro. to Computer Science	Comp. Sci.
Game Design	Comp. Sci.
Robotics	Comp. Sci.
Image Processing	Comp. Sci.
Database System Concepts	Comp. Sci.
Intro. to Digital Systems	Elec. Eng.
Investment Banking	Finance

4/

The screenshot shows the APEX SQL Workshop interface. The top navigation bar includes 'APEX', 'App Builder', 'SQL Workshop', 'Team Development', and 'Gallery'. The 'SQL Commands' tab is active, and the schema is set to 'WKSP_CDZLTGASL2ROCA'. The query editor contains the following SQL statement:

```
1 SELECT dept_name, budget from department;
```

The 'Results' tab is selected, displaying a table with two columns: 'DEPT_NAME' and 'BUDGET'. The table contains 7 rows of data. Below the table, a message states '7 rows returned in 0.02 seconds' with a 'Download' link.

DEPT_NAME	BUDGET
Biology	90000
Comp. Sci.	100000
Elec. Eng.	85000
Finance	120000
History	50000
Music	80000
Physics	70000

5/

The screenshot shows the APEX SQL Workshop interface. The top navigation bar includes 'APEX', 'App Builder', 'SQL Workshop', 'Team Development', and 'Gallery'. The 'SQL Commands' section is active, showing a schema of 'WKSP_CDZLTGASL2ROCA'. The language is set to 'SQL' and the number of rows is set to '10'. The query entered is 'SELECT name,dept_name from teacher;'. The results are displayed in a table with two columns: 'NAME' and 'DEPT_NAME'.

NAME	DEPT_NAME
Srinivasan	Comp. Sci.
Wu	Finance
Mozart	Music
Einstein	Physics
El Said	History
Gold	Physics
Katz	Comp. Sci.
Califieri	History
Singh	Finance
Crick	Biology

6/

The screenshot shows the APEX SQL Workshop interface. The top navigation bar is the same as in the previous screenshot. The 'SQL Commands' section is active, showing the same schema. The language is set to 'SQL' and the number of rows is set to '10'. The query entered is 'SELECT name from teacher where salary > 65000'. The results are displayed in a table with one column: 'NAME'.

NAME
Wu
Einstein
Gold
Katz
Singh
Crick
Brandt
Kim

8 rows returned in 0.02 seconds [Download](#)

7/

The screenshot shows the APEX SQL Workshop interface. The SQL command entered is: `SELECT name from teacher where salary >= 55000 and salary <= 85000`. The results are displayed in a table with one column, **NAME**, containing seven rows: Srinivasan, El Said, Katz, Califieri, Singh, Crick, and Kim. The status bar indicates "7 rows returned in 0.00 seconds".

NAME
Srinivasan
El Said
Katz
Califieri
Singh
Crick
Kim

8/

The screenshot shows the APEX SQL Workshop interface. The SQL command entered is: `SELECT distinct dept_name from teacher;`. The results are displayed in a table with one column, **DEPT_NAME**, containing seven rows: Comp. Sci., Biology, History, Finance, Elec. Eng., Music, and Physics. The status bar indicates "7 rows returned in 0.01 seconds".

DEPT_NAME
Comp. Sci.
Biology
History
Finance
Elec. Eng.
Music
Physics

9/

The screenshot shows the APEX SQL Workshop interface. The URL is <https://apex.oracle.com/pls/apex/r/apex/sql-workshop/sqlcomm>. The schema is set to WKSP_CDZLTGASL2ROCA. The language is SQL and the number of rows is set to 10. The query entered is: `1 SELECT name from teacher where salary > 65000`. The results are displayed in a table with one column, NAME, containing the following names: Wu, Einstein, Gold, Katz, Singh, Crick, Brandt, and Kim.

NAME
Wu
Einstein
Gold
Katz
Singh
Crick
Brandt
Kim

10/

The screenshot shows the APEX SQL Workshop interface. The URL is <https://apex.oracle.com/pls/apex/r/apex/sql-workshop/sqlcomm>. The schema is set to WKSP_CDZLTGASL2ROCA. The language is SQL and the number of rows is set to 10. The query entered is: `1 SELECT * from section where semester = 'Spring' and year = '2010'`. The results are displayed in a table with 7 columns: COURSE_ID, SEC_ID, SEMESTER, YEAR, BUILDING, ROOM_NUMBER, and TIME_SLOT_ID. The results show 7 rows of data.

COURSE_ID	SEC_ID	SEMESTER	YEAR	BUILDING	ROOM_NUMBER	TIME_SLOT_ID
CS-101	1	Spring	2010	Packard	101	F
CS-315	1	Spring	2010	Watson	120	D
CS-319	1	Spring	2010	Watson	100	B
CS-319	2	Spring	2010	Taylor	3128	C
FIN-201	1	Spring	2010	Packard	101	B
HIS-351	1	Spring	2010	Painter	514	C
MU-199	1	Spring	2010	Packard	101	D

7 rows returned in 0.03 seconds [Download](#)

11/

← → ↺ https://apex.oracle.com/pls/apex/r/apex/sql-workshop/sqlcomm

APEX App Builder SQL Workshop Team Development Gallery Search ES

↑ SQL Commands Schema WKSP_CDZLTGASL2ROCA

Language SQL Rows 10 Clear Command Find Tables Save Run

1 SELECT title from course c where c.dept_name = 'Comp. Sci.' and credits > 3

Results Explain Describe Saved SQL History

TITLE
Intro. to Computer Science
Game Design

2 rows returned in 0.00 seconds Download

12/

← → ↺ https://apex.oracle.com/pls/apex/r/apex/sql-workshop/sqlcomm

APEX App Builder SQL Workshop Team Development Gallery Search ES

↑ SQL Commands Schema WKSP_CDZLTGASL2ROCA

Language SQL Rows 10 Clear Command Find Tables Save Run

1 SELECT tea.name,tea.dept_name,dept.building from teacher tea,department dept
2 where tea.dept_name = dept.dept_name

Results Explain Describe Saved SQL History

NAME	DEPT_NAME	BUILDING
Srinivasan	Comp. Sci.	Taylor
Wu	Finance	Painter
Mozart	Music	Packard
Einstein	Physics	Watson
El Said	History	Painter
Gold	Physics	Watson
Katz	Comp. Sci.	Taylor
Califieri	History	Painter
Singh	Finance	Painter
Crick	Biology	Watson

More than 10 rows available. Increase rows selector to view more rows.

10 rows returned in 0.02 seconds Download

13/

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https://apex.oracle.com/pls/apex/r/apex/sql-workshop/sqlcomm

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SQL Workshop

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1

SELECT distinct stu.ID, stu.name, stu.dept_name, stu.tot_cred from student stu, takes ts, course c

2

where stu.ID = ts.ID and ts.course_id = c.course_id and c.dept_name = 'Comp. Sci.';

Results

Explain

Describe

Saved SQL

History

ID

NAME

DEPT_NAME

TOT_CRED

45678

Levy

Physics

46

76543

Brown

Comp. Sci.

58

12345

Shankar

Comp. Sci.

32

54321

Williams

Comp. Sci.

54

98765

Bourikas

Elec. Eng.

98

00128

Zhang

Comp. Sci.

102

6 rows returned in 0.03 seconds

Download

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https://apex.oracle.com/pls/apex/r/apex/sql-workshop/sqlcomm

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1

SELECT distinct stu.name from

2

student stu, takes ta, teaches ts, teacher tea where stu.ID = ta.ID

3

and ta.course_id = ts.course_id and ta.sec_id = ts.sec_id and ta.semester = ts.semester

4

and ts.ID = tea.ID and tea.name = 'Einstein';

5

Results

Explain

Describe

Saved SQL

History

NAME

Peltier

1 rows returned in 0.06 seconds

Download

15/

← → ↺ 🔒 https://apex.oracle.com/pls/apex/r/apex/sql-workshop/sqlcomm... 🌟

APEX App Builder ▾ **SQL Workshop** ▾ Team Development ▾ Gallery 🔍 Search 👤 ? ES

↑ **SQL Commands** Schema WKSP_CDZLTGASL2ROCA ⌵

Language **SQL** ⌵ Rows 10 ⌵ Clear Command Find Tables Save Run

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```
1 SELECT
2   c.course_id,
3   tea.name
4 from course c, teaches ts, teacher tea where
5 c.course_id = ts.course_id and ts.ID = tea.ID;
```

Results Explain Describe Saved SQL History

COURSE_ID	NAME
CS-101	Srinivasan
CS-315	Srinivasan
CS-347	Srinivasan
FIN-201	Wu
MU-199	Mozart
PHY-101	Einstein
HIS-351	El Said
CS-101	Katz
CS-319	Katz
BIO-101	Crick

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↑ **SQL Commands** Schema WKSP_CDZLTGASL2ROCA ⌵

Language **SQL** ⌵ Rows 10 ⌵ Clear Command Find Tables Save Run

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```
1 SELECT sec.course_id, sec.sec_id, count(ts.ID)
2 from
3   section sec, takes ts
4 where
5   sec.course_id = ts.course_id and sec.sec_id = ts.sec_id and sec.semester = 'Spring'
6   and sec.year = 2010
7 group by sec.course_id, sec.sec_id
```

Results Explain Describe Saved SQL History

COURSE_ID	SEC_ID	COUNT(T.ID)
CS-101	1	7
CS-315	1	2
CS-319	1	1
CS-319	2	1
FIN-201	1	1
HIS-351	1	1
MU-199	1	1

7 rows returned in 0.05 seconds Download

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⚙

1 SELECT dept.dept_name,max(tea.salary) as max_salary from department dept, teacher tea

2 where dept.dept_name = tea.dept_name group by dept.dept_name;

Results Explain Describe Saved SQL History

DEPT_NAME	MAX_SALARY
Comp. Sci.	92000
Biology	72000
History	62000
Finance	90000
Elec. Eng.	80000
Music	40000
Physics	95000

7 rows returned in 0.01 seconds Download

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⚙

1 SELECT ts.course_id,ts.sec_id,ts.semester,ts.year,count(ts.ID) as number_of_teachers

2 from takes ts group by ts.course_id, ts.sec_id, ts.semester, ts.year

Results Explain Describe Saved SQL History

COURSE_ID	SEC_ID	SEMESTER	YEAR	NUMBER_OF_TEACHERS
CS-190	2	Spring	2009	2
CS-319	1	Spring	2010	1
CS-347	1	Fall	2009	2
MU-199	1	Spring	2010	1
CS-101	1	Fall	2009	6
CS-101	1	Spring	2010	1
FIN-201	1	Spring	2010	1
BIO-101	1	Summer	2009	1
CS-315	1	Spring	2010	2
HIS-351	1	Spring	2010	1

More than 10 rows available. Increase rows selector to view more rows.

10 rows returned in 0.01 seconds Download

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The screenshot shows the APEX SQL Workshop interface. The top navigation bar includes 'APEX', 'App Builder', 'SQL Workshop', 'Team Development', and 'Gallery'. The 'SQL Commands' tab is active, showing a query in the 'Language' field. The 'Schema' dropdown is set to 'WKSP_CDZLTGASL2ROCA'. The query is as follows:

```
1 SELECT sec.building, count(*)
2 from section sec
3 where (sec.semester = 'Fall' AND sec.year = 2009) or (sec.semester = 'Spring' AND sec.year = 2010)
4 group by sec.building
```

The 'Results' tab is selected, displaying a table with two columns: 'BUILDING' and 'COUNT(*)'. The table contains four rows of data. Below the table, it states '4 rows returned in 0.02 seconds' and provides a 'Download' link.

BUILDING	COUNT(*)
Watson	3
Packard	4
Taylor	2
Painter	1

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The screenshot shows the APEX SQL Workshop interface. The top navigation bar is the same as in the previous screenshot. The 'SQL Commands' tab is active, showing a more complex query in the 'Language' field. The 'Schema' dropdown is set to 'WKSP_CDZLTGASL2ROCA'. The query is as follows:

```
1 SELECT dept.dept_name, count(*) AS number_of_courses
2 from department dept, course c, teaches ts, section sec
3 where dept.dept_name = c.dept_name and c.course_id = ts.course_id
4 and ts.course_id = sec.course_id and ts.sec_id = sec.sec_id and ts.semester = sec.semester
5 and ts.year = sec.year and sec.building = dept.building
6 group by dept.dept_name
```

The 'Results' tab is selected, displaying a table with two columns: 'DEPT_NAME' and 'NUMBER_OF_COURSES'. The table contains five rows of data. Below the table, it states '5 rows returned in 0.08 seconds' and provides a 'Download' link.

DEPT_NAME	NUMBER_OF_COURSES
Comp. Sci.	4
History	1
Elec. Eng.	1
Music	1
Physics	1

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↑ **SQL Commands** Schema WKSP_CDZLTGASL2ROCA ▾ ?

Language SQL ▾ ? Rows 10 ▾ ? Clear Command Find Tables Save Run

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```
1 SELECT c.title,ts.ID,tea.name
2 from course c, teaches ts, teacher tea
3 where c.course_id = ts.course_id and ts.ID = tea.ID;
```

Results Explain Describe Saved SQL History

TITLE	ID	NAME
Intro. to Biology	76766	Crick
Genetics	76766	Crick
Intro. to Computer Science	10101	Srinivasan
Intro. to Computer Science	45565	Katz
Game Design	83821	Brandt
Game Design	83821	Brandt
Robotics	10101	Srinivasan
Image Processing	45565	Katz
Image Processing	83821	Brandt
Database System Concepts	10101	Srinivasan

More than 10 rows available. Increase rows selector to view more rows.

10 rows returned in 0.04 seconds Download

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Language SQL ▾ ? Rows 10 ▾ ? Clear Command Find Tables Save Run

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```
1 SELECT sec.semester,COUNT(*) as number_of_courses
2 from section sec
3 where sec.semester IN ('Summer', 'Fall', 'Spring') group by sec.semester
```

Results Explain Describe Saved SQL History

SEMESTER	NUMBER_OF_COURSES
Fall	3
Summer	2
Spring	10

3 rows returned in 0.00 seconds Download

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↑ **SQL Commands** Schema **WKSP_CDZLTGASL2ROCA** ⓘ

Language **SQL** ⓘ Rows **10** ⓘ **Clear Command** **Find Tables** **Save** **Run**

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```

1 SELECT stu.ID,stu.name,SUM(c.credits) AS all_credits
2 from student stu, takes ts, course c, department dept
3 where stu.ID = ts.ID and ts.course_id = c.course_id and c.dept_name != stu.dept_name
4      and c.dept_name = dept.dept_name
5 group by stu.ID, stu.name

```

Results Explain Describe Saved SQL History

ID	NAME	ALL_CREDITS
45678	Levy	11
98765	Bourikas	7

2 rows returned in 0.05 seconds [Download](#)

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↑ **SQL Commands** Schema **WKSP_CDZLTGASL2ROCA** ⓘ

Language **SQL** ⓘ Rows **10** ⓘ **Clear Command** **Find Tables** **Save** **Run**

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```

1 SELECT dept.dept_name,SUM(c.credits) as all_credits
2 from department dept, course c, section sec
3 where c.dept_name = dept.dept_name and c.course_id = sec.course_id
4 group by dept.dept_name

```

Results Explain Describe Saved SQL History

DEPT_NAME	ALL_CREDITS
Comp. Sci.	28
Biology	8
History	3
Elec. Eng.	3
Finance	3
Music	3
Physics	4

7 rows returned in 0.01 seconds [Download](#)