



Faculty of Engineering
Computer Engineering Department

2010

Advanced Data Base Project

Oracle Lab - Part (2)

Submitted By:

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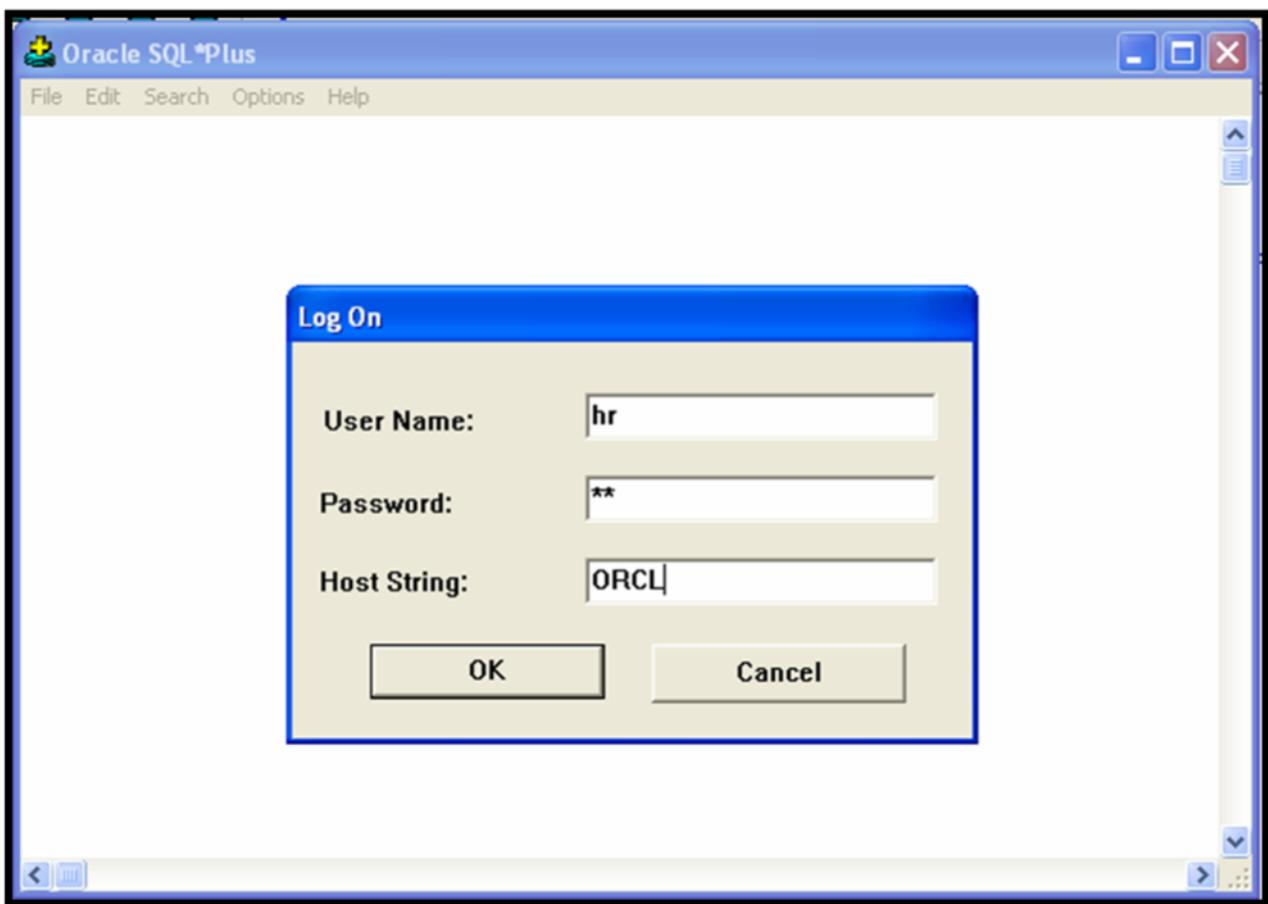
Laila Kh. Al Astal 220060650

Submitted To:

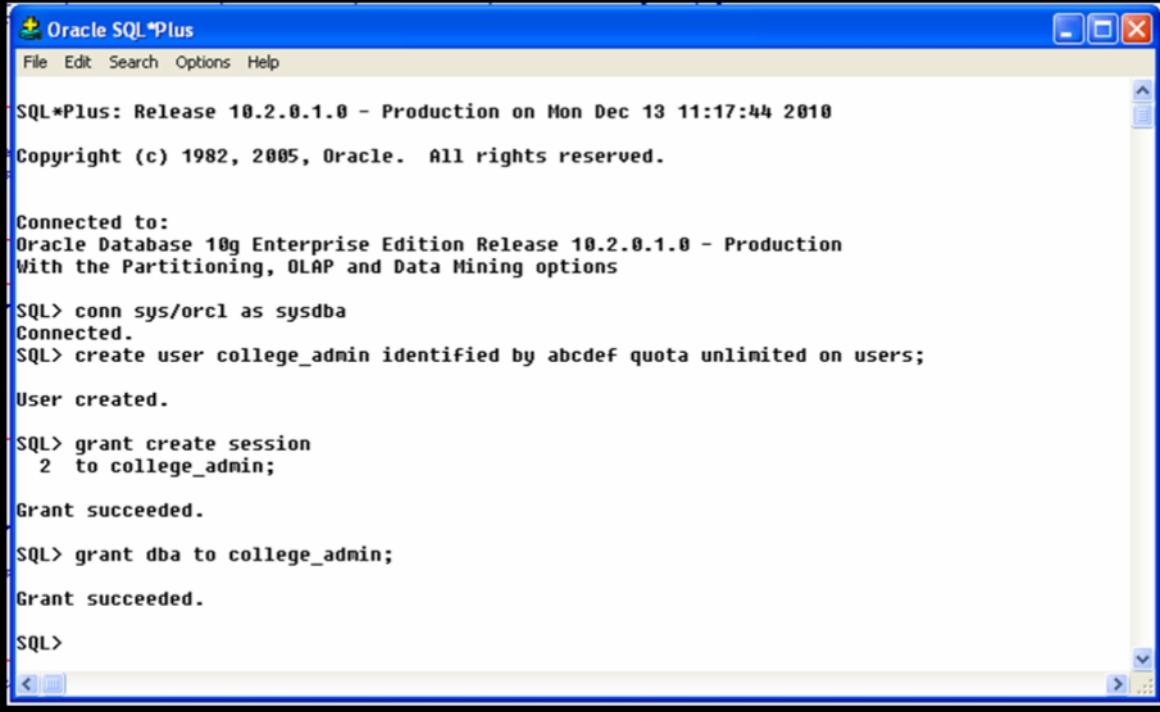
Eng. Doaa Abu Jabal

Dec 15, 2010

First we enter on HR by Oracle SQL * Plus



We create a DBA user is **college_admin** and we give him privileges like create session and DBA proprieties



```
Oracle SQL*Plus
File Edit Search Options Help
SQL*Plus: Release 10.2.0.1.0 - Production on Mon Dec 13 11:17:44 2010
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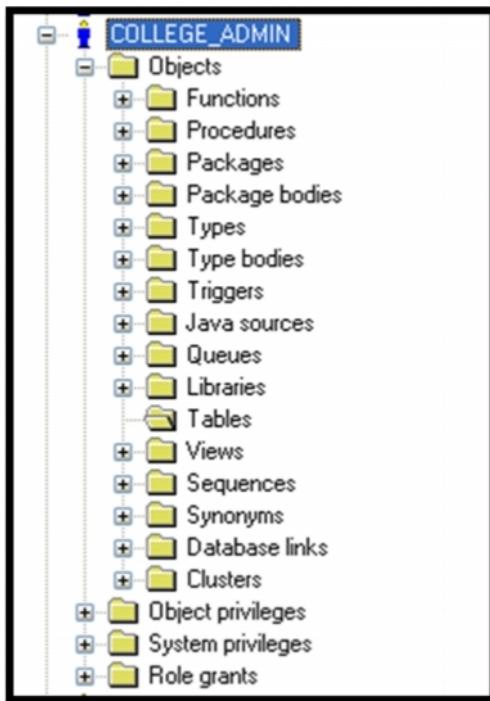
Connected to:
Oracle Database 10g Enterprise Edition Release 10.2.0.1.0 - Production
With the Partitioning, OLAP and Data Mining options

SQL> conn sys/orcl as sysdba
Connected.
SQL> create user college_admin identified by abcdef quota unlimited on users;
User created.

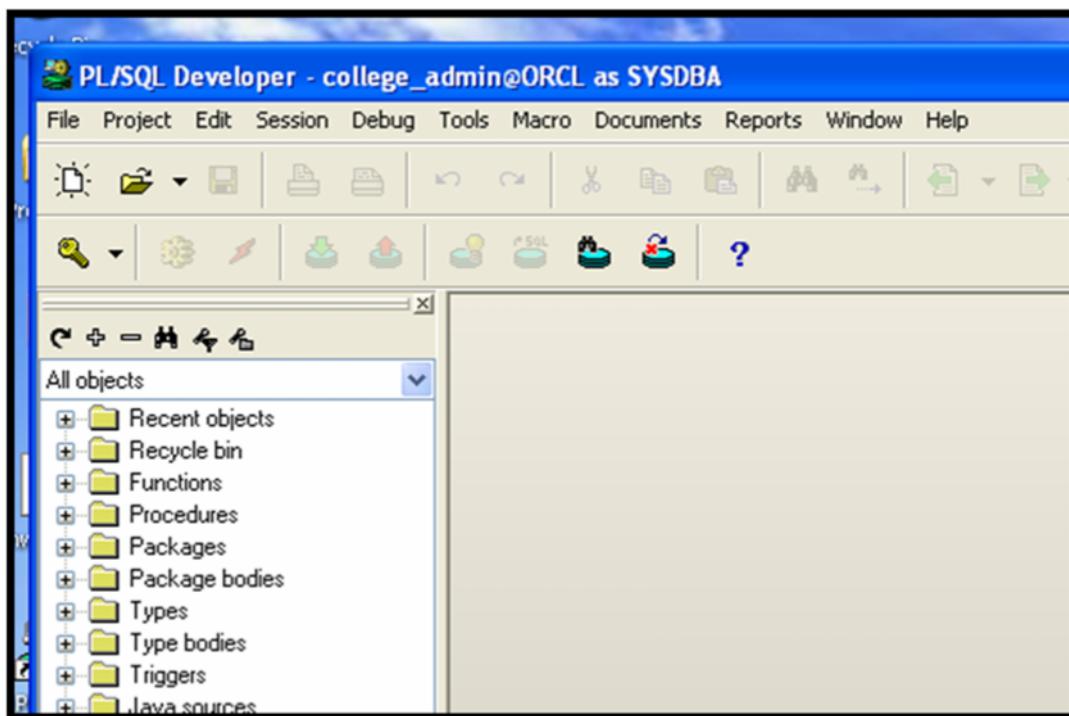
SQL> grant create session
  2  to college_admin;
Grant succeeded.

SQL> grant dba to college_admin;
Grant succeeded.

SQL>
```

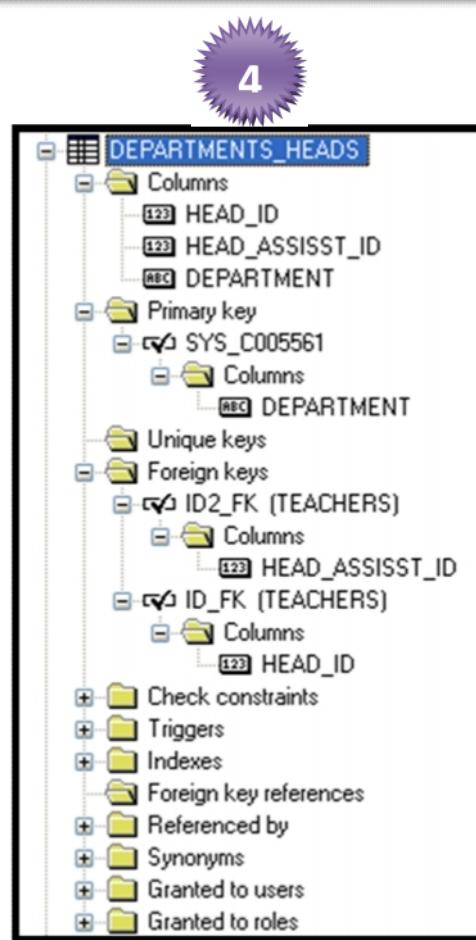
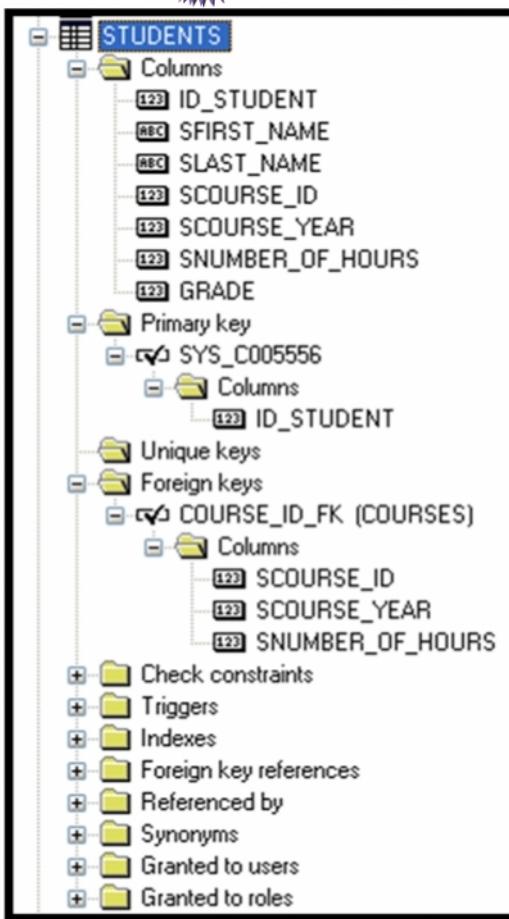
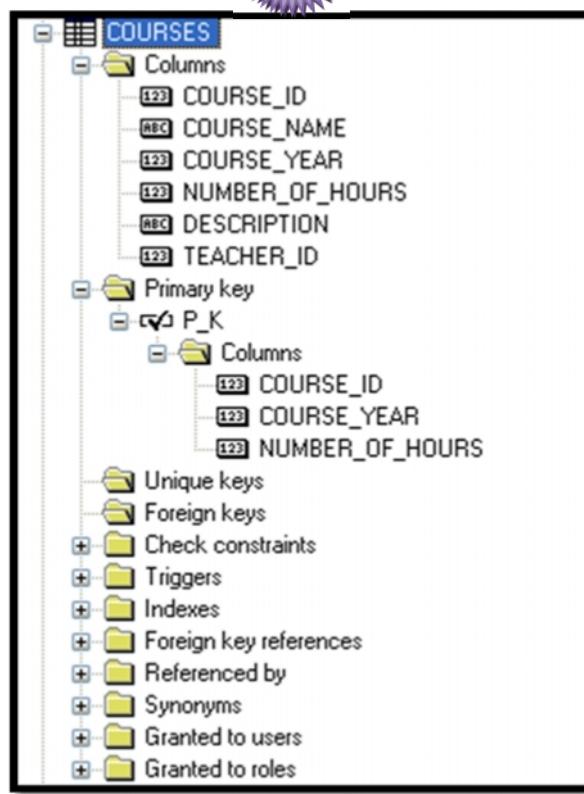
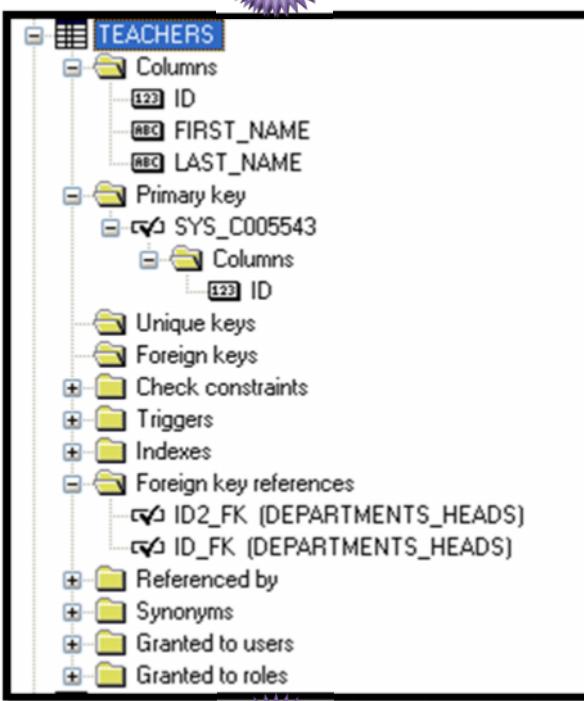


We enter in the **oracle** by the user we are created



Now we are create the tables (**Teachers, Courses, students, departments_heads**) and we enter the data for each of them.

```
--Part(1)--  
create table Teachers(  
ID Number Primary key not null,  
First_Name Varchar(30) not null,  
Last_Name Varchar(30) not null);  
  
select * from Teachers;  
  
create table Courses(  
Course_Id Number not null ,  
Course_Name Varchar(30) not null,  
Course_Year Number not null check (course_year between 1 and 5),  
Number_of_hours Number(2) not null check (number_of_hours between 0 and 4),  
Description Varchar(100),  
Teacher_Id Number,  
constraint p_k primary key (Course_Id , Course_Year , Number_of_hours ));  
  
select * from Courses;  
  
create table students(  
Id_Student Number not null primary key,  
SFirst_Name Varchar(30) not null,  
SLast_Name Varchar(30) not null,  
SCourse_Id Number not null,  
SCourse_Year Number,  
SNumber_of_hours Number ,  
grade number(2) check (grade between 40 and 100),  
constraint Course_Id_FK Foreign key (SCourse_Id,SCourse_Year,SNumber_of_Hours) references Courses  
(Course_Id,Course_Year,Number_of_Hours));  
  
select * from students;  
  
create table departments_heads(  
head_id number not null,  
head_assisst_id number not null,  
department varchar(30) not null primary key,  
constraint ID_FK Foreign key (head_id) references Teachers(ID),  
constraint ID2_FK Foreign key (head_assisst_id) references Teachers(ID)  
);  
  
select * from departments_heads;
```



```

insert into teachers(id,first_name,last_name)
values(1,'Ahmad','Saleem');

insert into teachers(id,first_name,last_name)
values(2,'Mahmoud','Ali');

insert into teachers(id,first_name,last_name)
values(3,'Fouad','Kamel');

insert into teachers(id,first_name,last_name)
values(4,'Waleed','Soliman');

insert into teachers(id,first_name,last_name)
values(5,'Ali','Wesam');

insert into teachers(id,first_name,last_name)
values(6,'Ahmad','Waleed');

select * from teachers;

```



ID	FIRST_NAME	LAST_NAME
1	Ahmad	Saleem
2	Mahmoud	Ali
3	Fouad	Kamel
4	Waleed	Soliman
5	Ali	Wesam
6	Ahmad	Waleed

```

insert into courses(course_id,course_name,course_year,number_of_hours,description,teacher_id)
values(10,'Programming',2,3,'Study Programming concepts: data types, arrays, methods',1);

insert into courses(course_id,course_name,course_year,number_of_hours,description,teacher_id)
values(10,'Programming lab',2,1,'Practices the concepts in programming course',2);

insert into courses(course_id,course_name,course_year,number_of_hours,description,teacher_id)
values(12,'Algorithms',3,3,'Study how to design an algorithm',3);

insert into courses(course_id,course_name,course_year,number_of_hours,description,teacher_id)
values(12,'algorithms discussion',3,0,'',5);

insert into courses(course_id,course_name,course_year,number_of_hours,description,teacher_id)
values(14,'Database',4,3,'Study Basic concepts of database design',6);

insert into courses(course_id,course_name,course_year,number_of_hours,description,teacher_id)
values(14,'Database lab',4,1,'Study how to write SQL',2);

insert into courses(course_id,course_name,course_year,number_of_hours,description,teacher_id)
values(14,'Database discussion',4,0,'',2);

insert into courses(course_id,course_name,course_year,number_of_hours,description,teacher_id)
values(15,'Advance Database',5,4,'Advance topics in database',4);

select * from courses;

```



COURSE_ID	COURSE_NAME	COURSE_YEAR	NUMBER_OF_HOURS	DESCRIPTION	TEACHER_ID
1	10 Programming	2	3	Study Programming concepts: data types, arrays, methods	1
2	10 Programming lab	2	1	Practices the concepts in programming course	2
3	12 Algorithms	3	3	Study how to design an algorithm	3
4	12 algorithms discussion	3	0		5
5	14 Database	4	3	Study Basic concepts of database design	6
6	14 Database lab	4	1	Study how to write SQL	2
7	14 Database discussion	4	0		2
8	15 Advance Database	5	4	Advance topics in database	4

```

insert into students(id_student,sfirst_name,slast_name,scourse_id,scourse_year,snumber_of_hours,grade)
values(1,'Ahmad','Fahd',14,4,3,87);

insert into students(id_student,sfirst_name,slast_name,scourse_id,scourse_year,snumber_of_hours,grade)
values(2,'Kmal','Raed',15,5,4,92);

insert into students(id_student,sfirst_name,slast_name,scourse_id,scourse_year,snumber_of_hours,grade)
values(3,'Wesam','Ahmad',12,3,3,84);

insert into students(id_student,sfirst_name,slast_name,scourse_id,scourse_year,snumber_of_hours,grade)
values(4,'Ali','Ismaeel',10,2,3,85);

insert into students(id_student,sfirst_name,slast_name,scourse_id,scourse_year,snumber_of_hours,grade)
values(5,'Ahmad','Fahd',14,4,1,87);

insert into students(id_student,sfirst_name,slast_name,scourse_id,scourse_year,snumber_of_hours,grade)
values(6,'Ahmad','Fahd',14,4,0,'');

insert into students(id_student,sfirst_name,slast_name,scourse_id,scourse_year,snumber_of_hours,grade)
values(7,'Ali','Ismaael',10,2,1,88);

insert into students(id_student,sfirst_name,slast_name,scourse_id,scourse_year,snumber_of_hours,grade)
values(8,'Wesam','Ahmad',12,3,0,'');

select * from students;

```



ID_STUDENT	SFIRST_NAME	SLAST_NAME	SCOURSE_ID	SCOURSE_YEAR	SNUMBER_OF_HOURS	GRADE
1	Ahmad	Fahd	14	4	3	87
2	Kmal	Raed	15	5	4	92
3	Wesam	Ahmad	12	3	3	84
4	Ali	Ismaael	10	2	3	85
5	Ahmad	Fahd	14	4	1	87
6	Ahmad	Fahd	14	4	0	
7	Ali	Ismaael	10	2	1	88
8	Wesam	Ahmad	12	3	0	

```

insert into departments_heads(head_id,head_assisst_id,department)
values(6,4,'Compute');

select * from departments_heads;

```



HEAD_ID	HEAD_ASSISST_ID	DEPARTMENT
1	6	4 Compute

We are created views (**Teachers_Courses**, **Students_Courses**, **Teacher_Course_Students**)

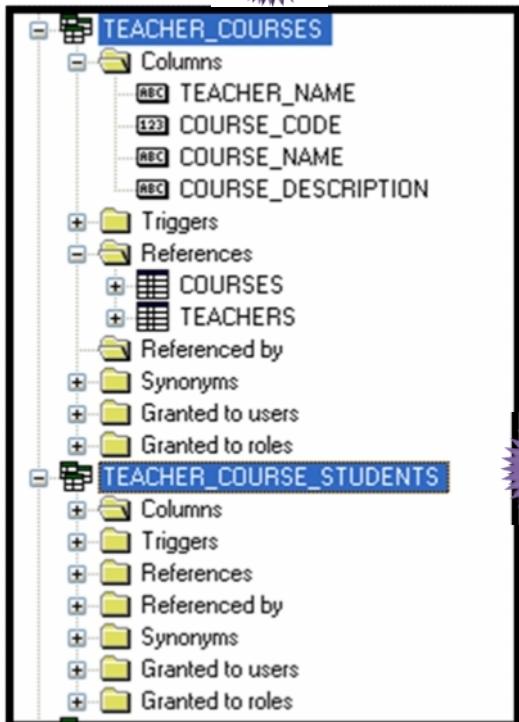
```
create view Teacher_Courses(Teacher_Name, Course_code, Course_Name ,Course_description)
as select First_Name||Last_Name,Course_Year|| Number_Of_hours|| Course_Id , Course_Name,Description
from teachers, courses

create or replace view Teacher_Courses(Teacher_Name, Course_code, Course_Name ,Course_description)
as select First_Name||Last_Name,Course_Id , Course_Name,Description
from teachers, courses
with read only;

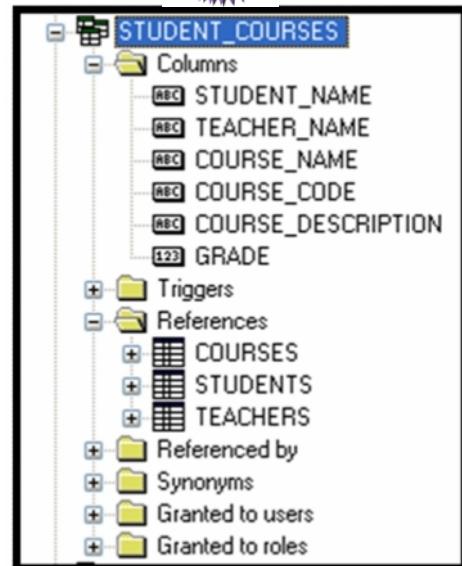
create view Student_Courses (Student_Name , Teacher_Name , Course_Name, Course_code, Course_description, grade)
as select SFirst_Name||SLast_Name , First_Name||Last_Name , Course_Name,SCourse_Year|| SNumber_Of_hours|| SCourse_Id
, Description , grade
from students,courses,teachers
with read only ;

create view Teacher_Course_Students
(Teacher_Name,Course_code,Student_Number,Student_Name,grade)
as select First_Name||Last_Name , Course_Year|| Number_Of_hours|| Course_Id , Id_Student,SFirst_Name||SLast_Name ,grade
from students,courses,teachers
with read only;
```

1



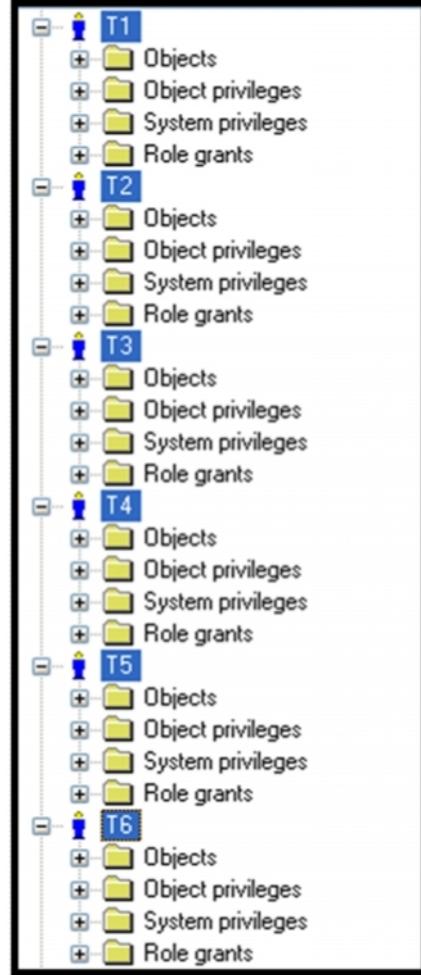
2



3

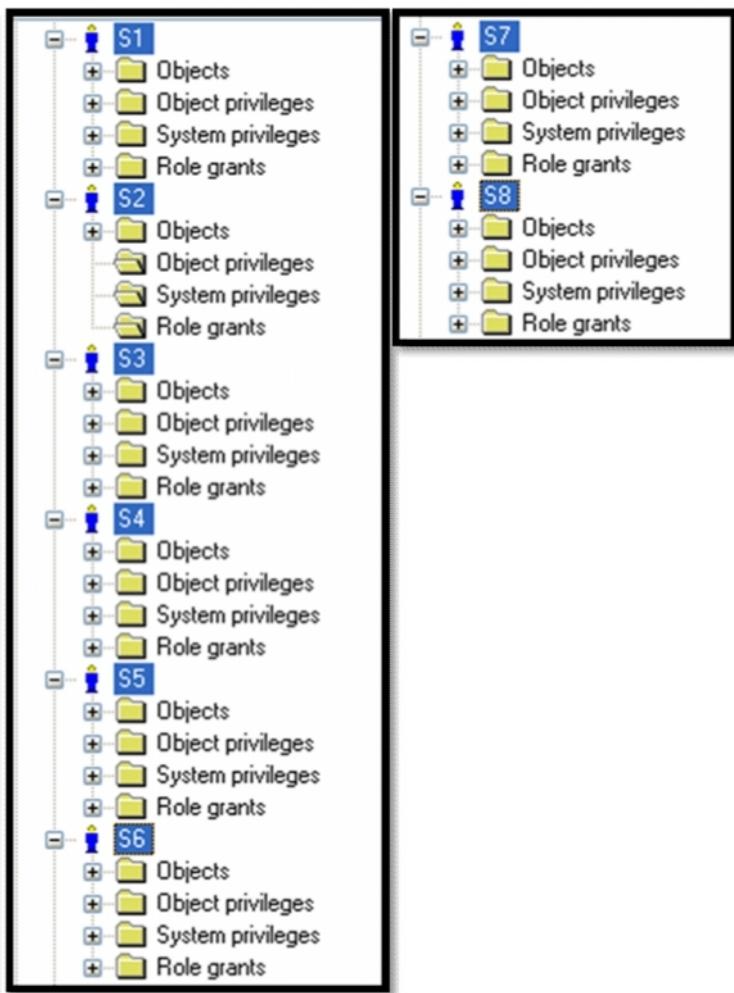
We are created users and they are teachers

```
SQL> create user T1 identified by Ahmad;  
User created.  
  
SQL> create user T2 identified by Mahmoud;  
User created.  
  
SQL> create user T3 identified by Fouad;  
User created.  
  
SQL> create user T4 identified by Waleed;  
User created.  
  
SQL> create user T5 identified by Ali;  
User created.  
  
SQL> create user T6 identified by Ahmad;  
User created.  
  
SQL>
```



We are created users and they are students

```
SQL> create user S1 identified by Ahmad;  
User created.  
  
SQL> create user S2 identified by Kmal;  
User created.  
  
SQL> create user S3 identified by Wesam;  
User created.  
  
SQL> create user S4 identified by Ali;  
User created.  
  
SQL> create user S5 identified by Ahmad;  
User created.  
  
SQL> create user S6 identified by Ahmad;  
User created.  
  
SQL> create user S7 identified by Ali;  
User created.  
  
SQL> create user S8 identified by Wesam;  
User created.  
  
SQL> |
```



We are given the privileges for teachers and students

```
SQL> GRANT insert
  2 ON Teachers
  3 TO T6;
Grant succeeded.

SQL> GRANT insert
  2 ON courses
  3 TO T6;
Grant succeeded.

SQL> GRANT select
  2 ON Teacher_Course_Students
  3 TO T6;
Grant succeeded.

SQL> GRANT update (description, Teacher_id)
  2 ON Courses
  3 TO T4;
Grant succeeded.

SQL> grant insert(grade)
  2 on Teacher_Course_Students
  3 to T1,T2,T3,T4,T5,T6;
Grant succeeded.

SQL> grant select
  2 on Student_Courses
  3 to S1,S2,S3,S4,S5,S6,S7,S8;
Grant succeeded.
```

- Allow any department head to :
 - insert in courses table the courses that belongs to his department.

Enter SQL Statement:

```

CREATE OR REPLACE FORCE VIEW
"SYSTEM"."HEAD_COURSES" ("Course ID", "Course Name", "Course Year", "Number of hours",
"Description", "teacher ID") AS
(
  select "Course ID", "Course Name", "Course Year", "Number of hours", "Description", "teacher ID"
  from courses
  where "teacher ID" in
  ( select ID from "SYSTEM"."HEAD_COURSES2"

  ))with check option;

CREATE OR REPLACE FORCE VIEW "SYSTEM"."HEAD_COURSES2" ("ID", "First Name", "Last Name",
"HEAD_ID") AS
  select "ID", "First Name", "Last Name", "HEAD_ID" from head_teacher
  where Head_ID = substr(user,2,length(user))with check option;

grant insert on "SYSTEM"."HEAD_COURSES" to T6;

```

Results Script Output Explain Autotrace DBMS Output OWA Output

CREATE OR REPLACE FORCE succeeded.
CREATE OR REPLACE FORCE succeeded.
grant insert succeeded.

- insert in teacher table his teachers only.

Grant insert on "SYSTEM."HEAD_teacher" to T6;

Where HEAD_teacher is a view that has the same condition .

- Allow any students to :
 - only view his data from student_courses.

Enter SQL Statement:

```

create or replace view v as
select * from teacher_course_students natural join student_courses
where "Student Number" = substr(user,2,length(user)) with check option;

create or replace view v2 as
select distinct "Student Name", "TeacherName", "Course Code", "Course Name", "Description", "grade"
from v;

grant select on v2 to S9;

```

Results Script Output Explain Autotrace DBMS Output OWA Output

create or replace succeeded.
create or replace succeeded.
grant select succeeded.