

《数据库系统原理》实验报告（二）

题目：上机实验课（二）交互式 SQL（DDL）

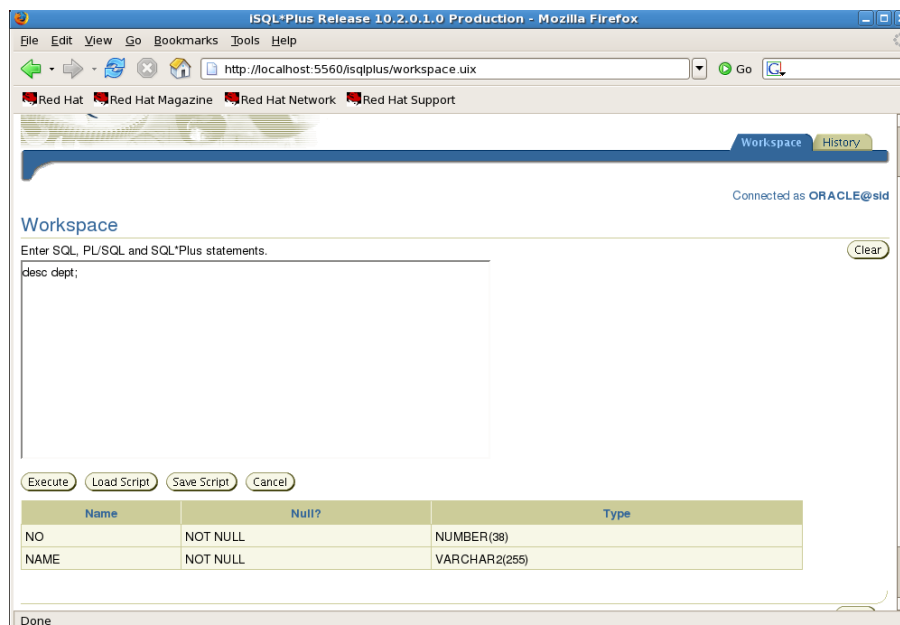
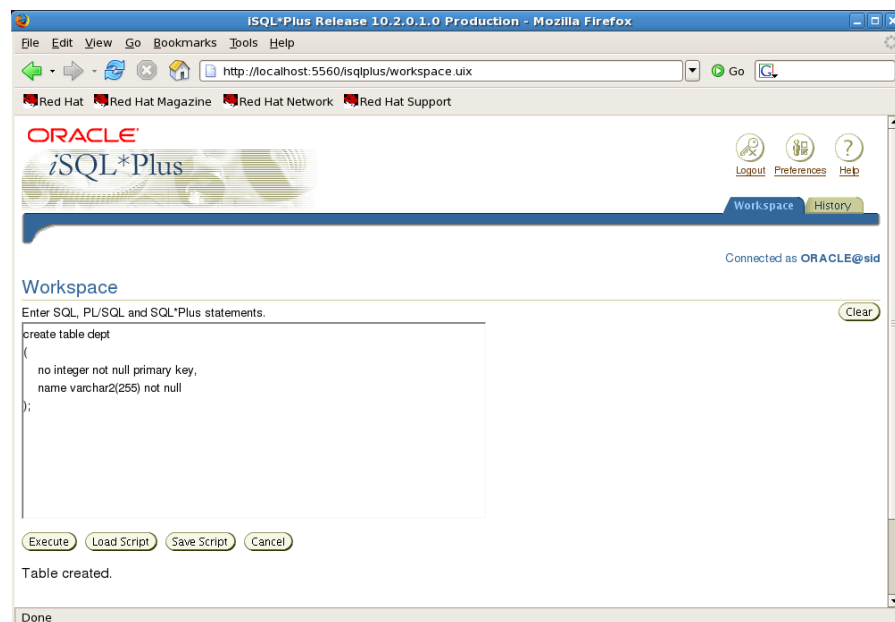
学号	1853790	姓名	庄镇华	日期	2020.10.20
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实验环境：VMware 虚拟机 Red Hat5 系统下的 oracle 环境

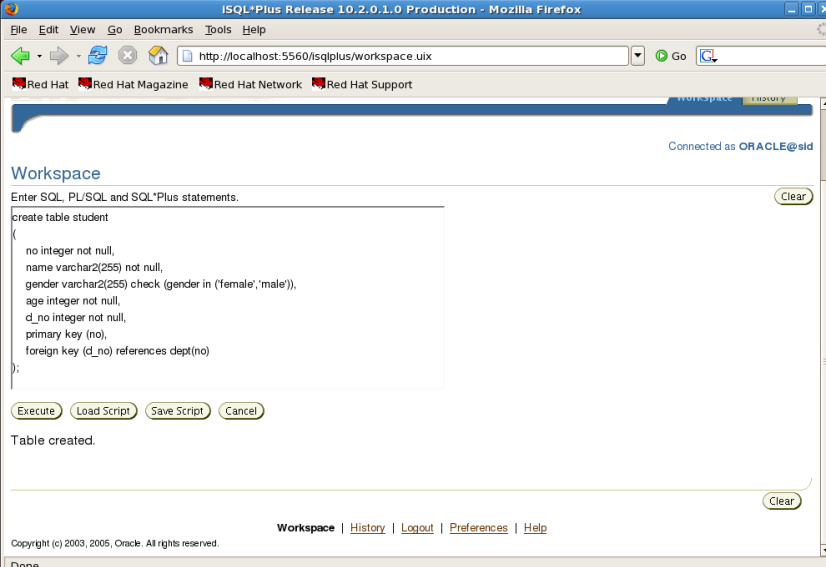
实验步骤及结果截图：

1. 建立四表并查询表结构

建立并查询 dept 表



建立并查询 student 表



iSQL*Plus Release 10.2.0.1.0 Production - Mozilla Firefox

http://localhost:5560/izsqlplus/workspace.uix

Connected as ORACLE@sld

Workspace

Enter SQL, PL/SQL and SQL*Plus statements.

```
create table student
(
  no integer not null,
  name varchar2(255) not null,
  gender varchar2(255) check (gender in ('female','male')),
  age integer not null,
  d_no integer not null,
  primary key (no),
  foreign key (d_no) references dept(no)
);
```

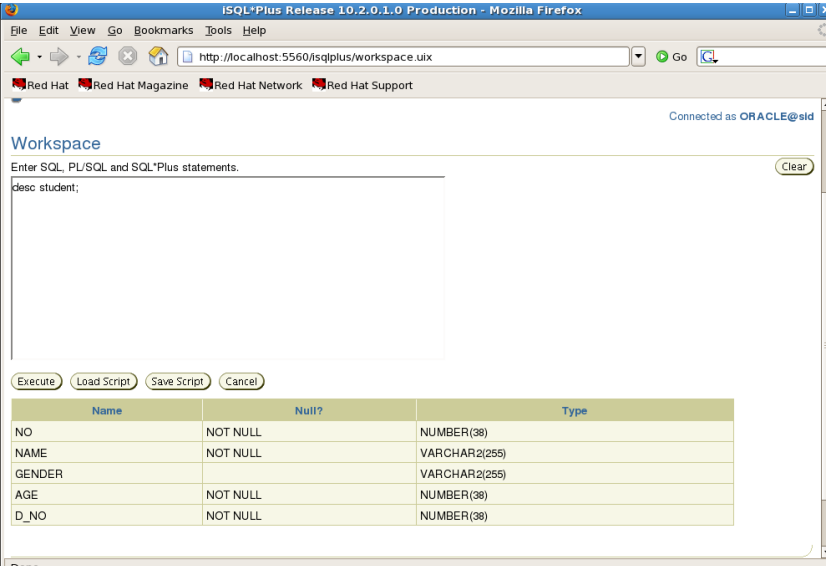
Execute Load Script Save Script Cancel

Table created.

Workspace | History | Logout | Preferences | Help

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Done



iSQL*Plus Release 10.2.0.1.0 Production - Mozilla Firefox

http://localhost:5560/izsqlplus/workspace.uix

Connected as ORACLE@sld

Workspace

Enter SQL, PL/SQL and SQL*Plus statements.

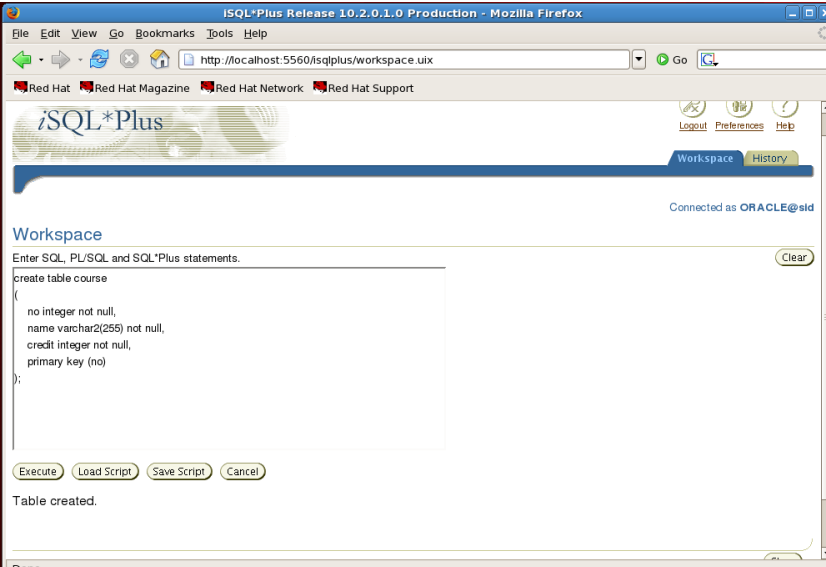
```
desc student;
```

Execute Load Script Save Script Cancel

Name	Null?	Type
NO	NOT NULL	NUMBER(38)
NAME	NOT NULL	VARCHAR2(255)
GENDER		VARCHAR2(255)
AGE	NOT NULL	NUMBER(38)
D_NO	NOT NULL	NUMBER(38)

Done

建立并查询 course 表



iSQL*Plus Release 10.2.0.1.0 Production - Mozilla Firefox

http://localhost:5560/izsqlplus/workspace.uix

Connected as ORACLE@sld

Workspace

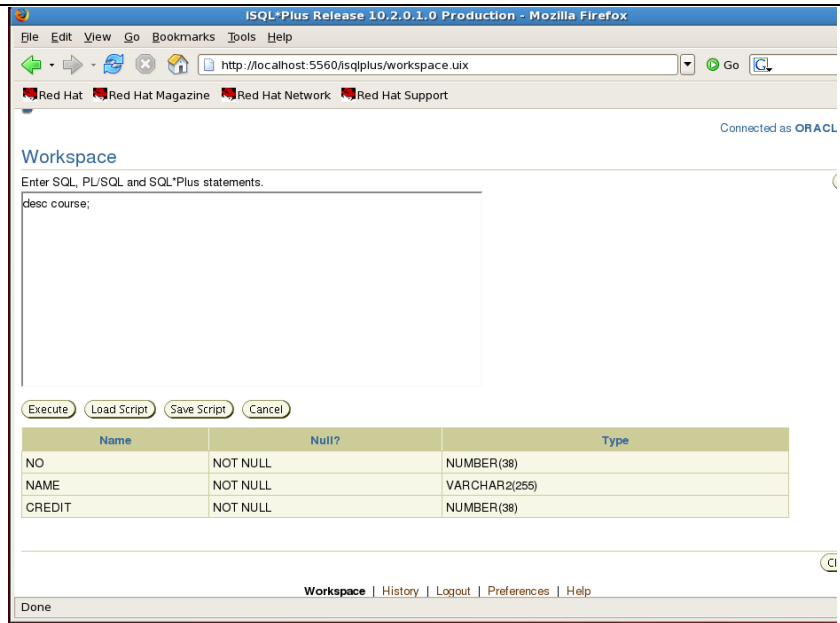
Enter SQL, PL/SQL and SQL*Plus statements.

```
create table course
(
  no integer not null,
  name varchar2(255) not null,
  credit integer not null,
  primary key (no)
);
```

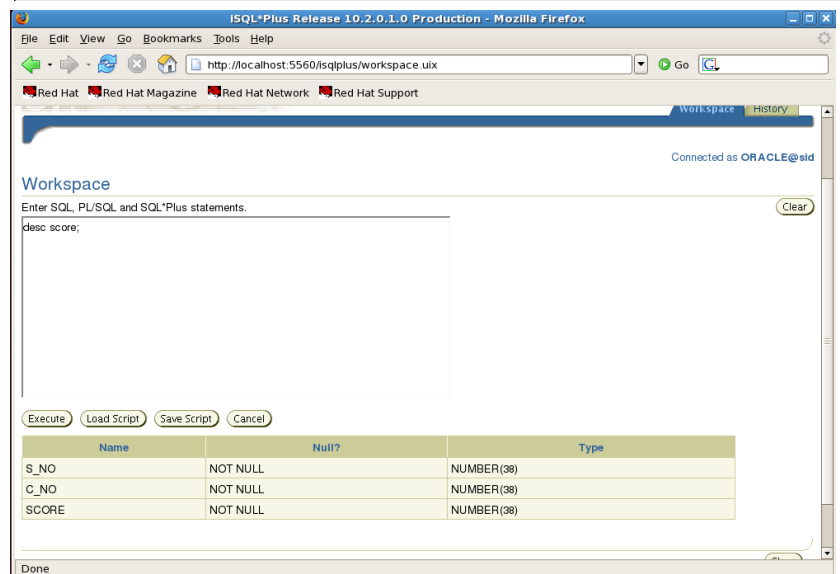
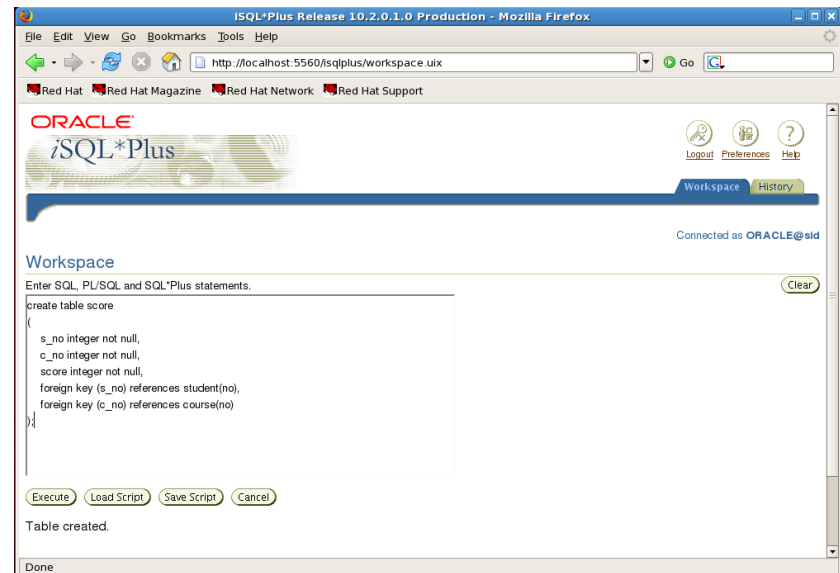
Execute Load Script Save Script Cancel

Table created.

Done



建立并查询 score 表



2. 查询建立的约束

查询 student 表的约束

Enter SQL, PL/SQL and SQL*Plus statements.

```
select table_name,constraint_type,constraint_name
from user_constraints
where table_name=upper('student');
```

Execute Load Script Save Script Cancel

TABLE_NAME	CON	CONSTRAINT_NAME
STUDENT	C	SYS_C005170
STUDENT	C	SYS_C005171
STUDENT	C	SYS_C005172
STUDENT	C	SYS_C005173
STUDENT	C	SYS_C005174
STUDENT	P	SYS_C005175
STUDENT	R	SYS_C005176

7 rows selected.
Done

查询 dept 表的约束

Enter SQL, PL/SQL and SQL*Plus statements.

```
select table_name,constraint_type,constraint_name
from user_constraints
where table_name=upper('dept');
```

Execute Load Script Save Script Cancel

TABLE_NAME	CON	CONSTRAINT_NAME
DEPT	C	SYS_C005167
DEPT	C	SYS_C005168
DEPT	P	SYS_C005169

Done

查询 course 表的约束

Enter SQL, PL/SQL and SQL*Plus statements.

```
select table_name,constraint_type,constraint_name
from user_constraints
where table_name=upper('course');
```

Execute Load Script Save Script Cancel

TABLE_NAME	CON	CONSTRAINT_NAME
COURSE	C	SYS_C005198
COURSE	C	SYS_C005199
COURSE	C	SYS_C005200
COURSE	P	SYS_C005201

Done

查询 score 表的约束

ISQL*Plus Release 10.2.0.1.0 Production - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://localhost:5560/isqlplus/workspace.uix

Connected as ORACLE@sid

Workspace

Enter SQL, PL/SQL and SQL*Plus statements.

```
select table_name,constraint_type,constraint_name
from user_constraints
where table_name=upper('score');
```

Execute Load Script Save Script Cancel

TABLE_NAME	CON	CONSTRAINT_NAME
SCORE	C	SYS_C005202
SCORE	C	SYS_C005203
SCORE	C	SYS_C005204
SCORE	R	SYS_C005205
SCORE	R	SYS_C005206

Done

3.将 student 中的 name 列属性由 varchar2 改为 char(15)

ISQL*Plus Release 10.2.0.1.0 Production - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://localhost:5560/isqlplus/workspace.uix

Connected as ORACLE@sid

Workspace

Enter SQL, PL/SQL and SQL*Plus statements.

```
alter table student
modify name char(15);
desc student;
```

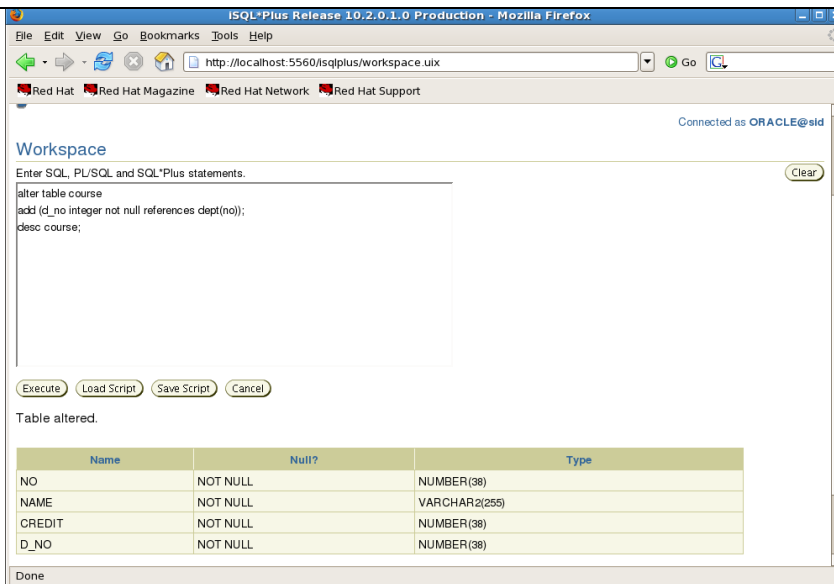
Execute Load Script Save Script Cancel

Table altered.

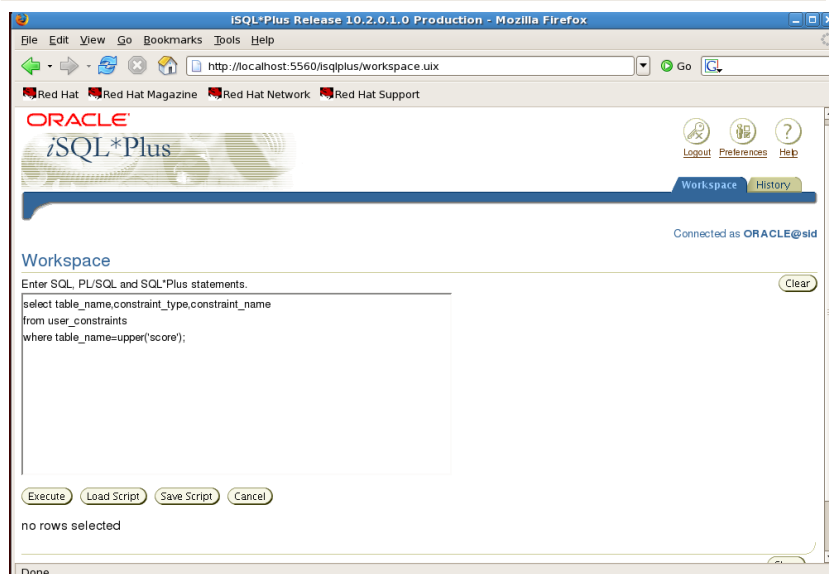
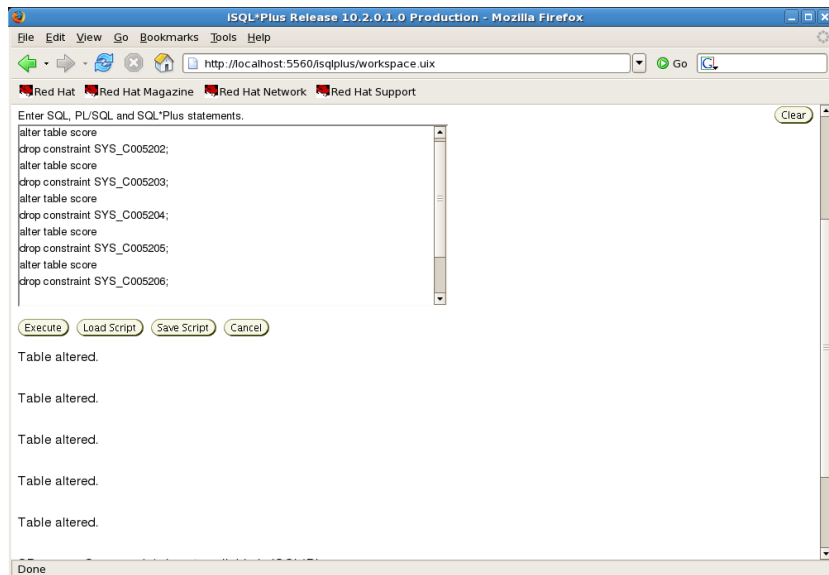
Name	Null?	Type
NO	NOT NULL	NUMBER(38)
NAME	NOT NULL	CHAR(15)
GENDER		VARCHAR2(255)
AGE	NOT NULL	NUMBER(38)
D_NO	NOT NULL	NUMBER(38)

Done

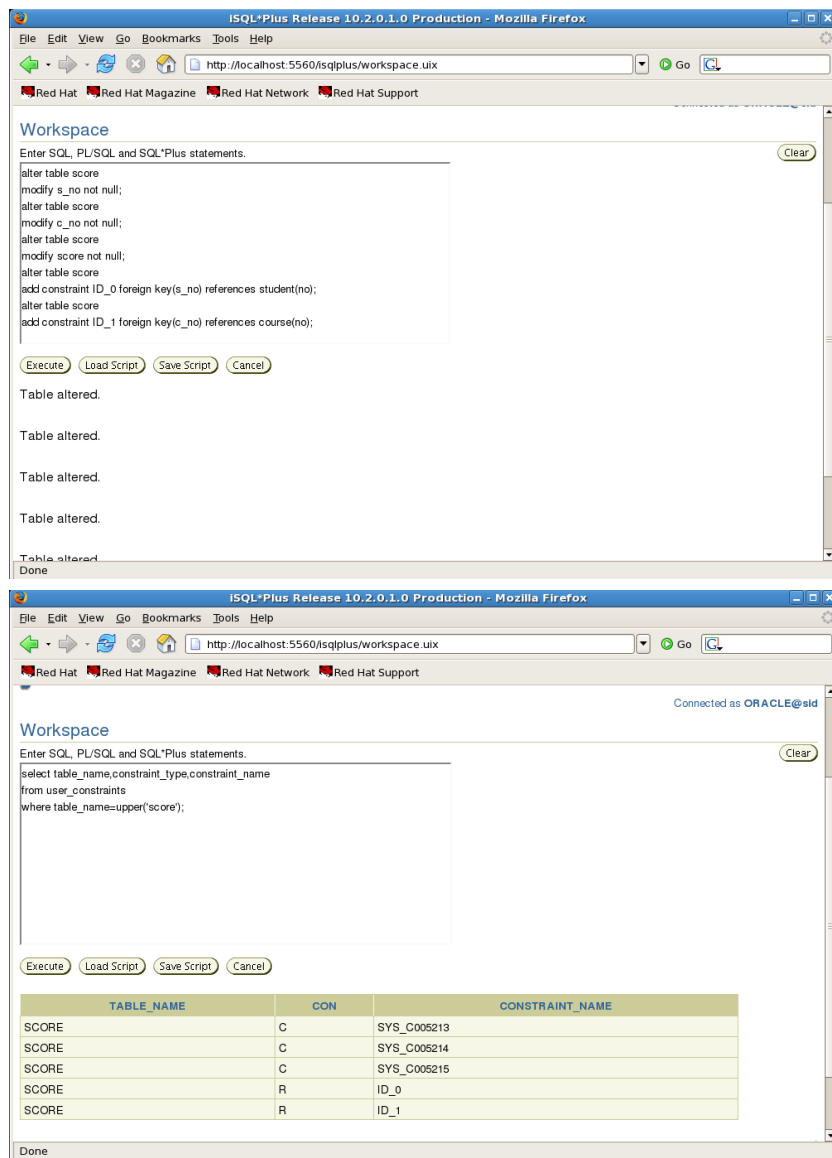
4.使用 alter 添加 course.d_no 及其约束



4. 将 score 表中所有约束删除后再建立一次 删除所有约束



重新建立一次



The top screenshot shows the iSQL*Plus workspace with the following SQL statements entered:

```
alter table score
modify s_no not null;
alter table score
modify c_no not null;
alter table score
modify score not null;
alter table score
add constraint ID_0 foreign key(s_no) references student(no);
alter table score
add constraint ID_1 foreign key(c_no) references course(no);
```

The bottom screenshot shows the result of the query:

```
select table_name,constraint_type,constraint_name
from user_constraints
where table_name=upper('score');
```

TABLE_NAME	CON	CONSTRAINT_NAME
SCORE	C	SYS_C005213
SCORE	C	SYS_C005214
SCORE	C	SYS_C005215
SCORE	R	ID_0
SCORE	R	ID_1

出现的问题:

1. 删除含有外键的表时，由于外键的存在，直接使用命令 `drop table xxx` 会报错并且无法成功删除。
2. 给表属性追加约束时，不同约束有不同的写法，不能一概而论。

解决方案：

1. 利用 `drop table t cascade constraints` 可以删除关联 table t 的 constraint 来达到 `drop table t` 的目的，原来属于 t1 的 foreign key constraint 跟随着被删除掉，但是储存在 table t1 的资料不会被删除。
2. 添加非空约束：`alter table score modify c_no not null;`
添加主键约束：`alter table score add constraint id primary key(id);`
添加外键约束：`alter table score add constraint id foreign key(s_no) references student(no);`