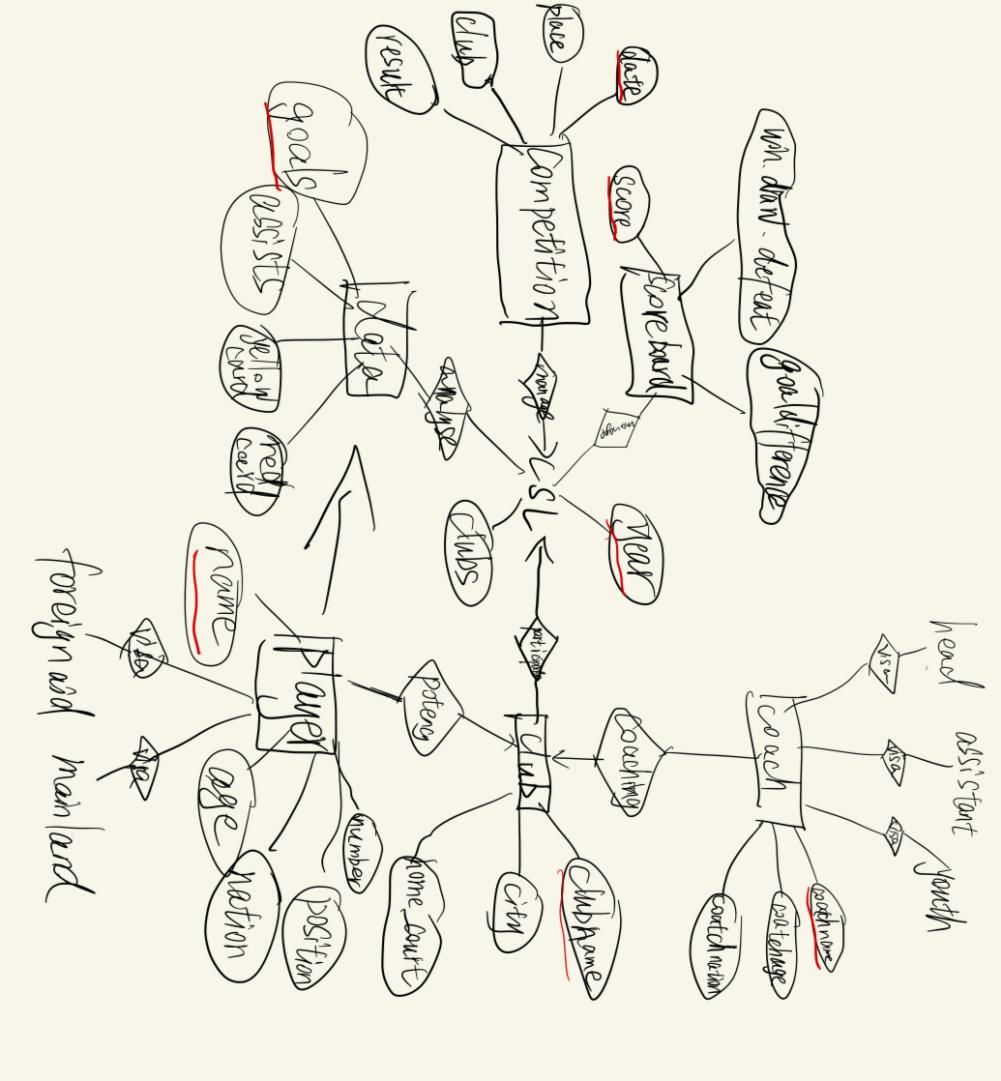
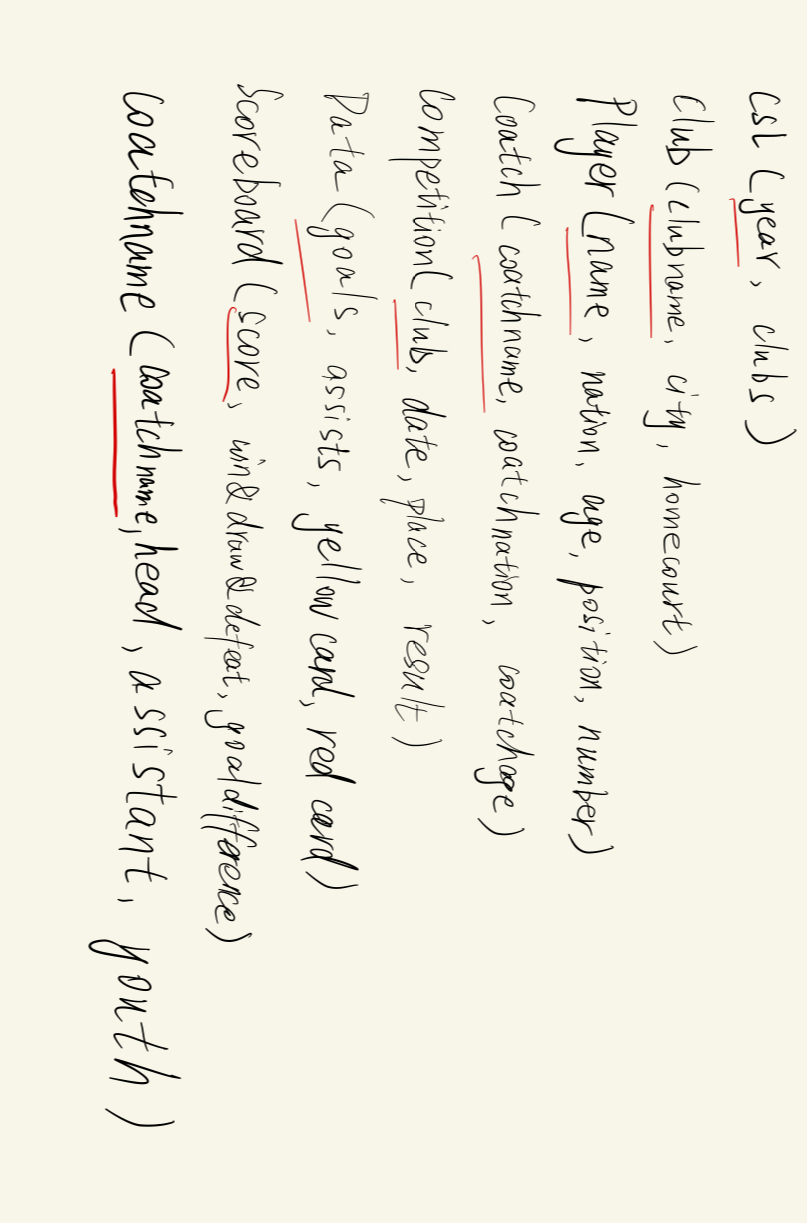
#### 中国足球协会超级联赛（CSL）

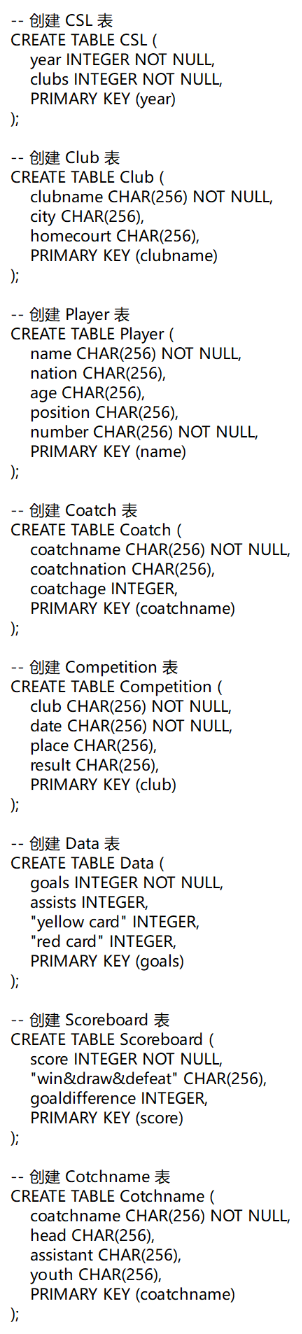
1.概念模型ER图



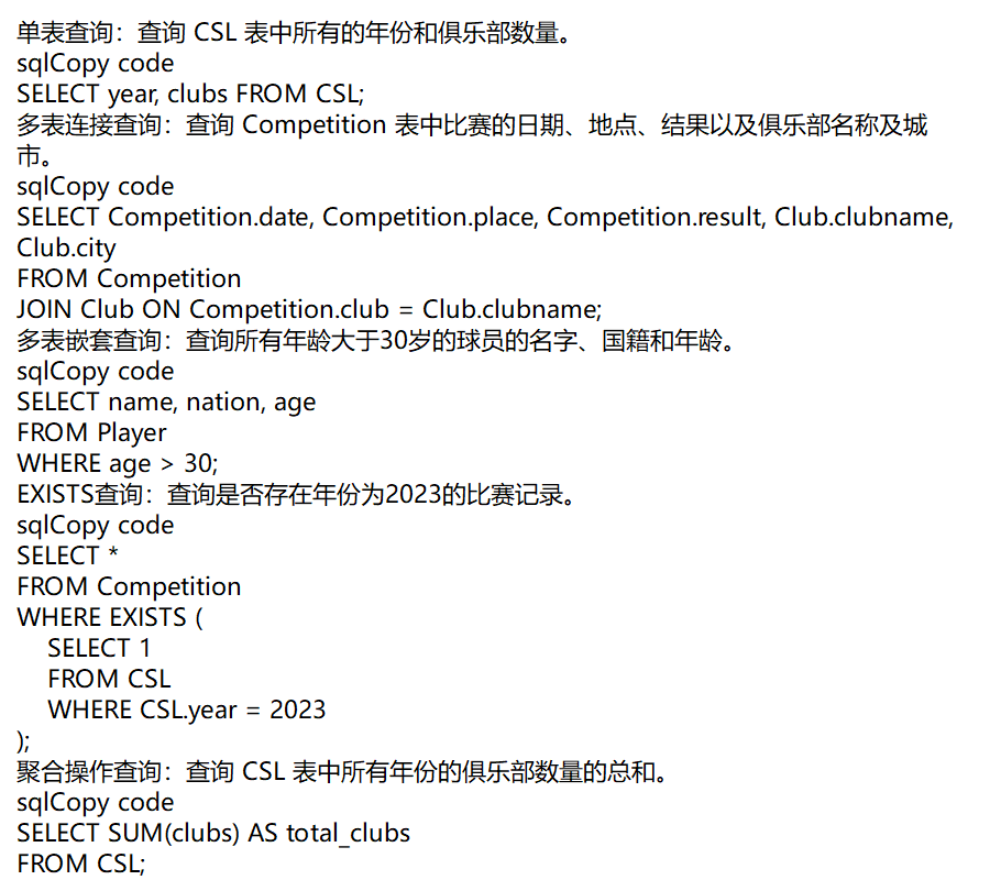
1. 关系模型



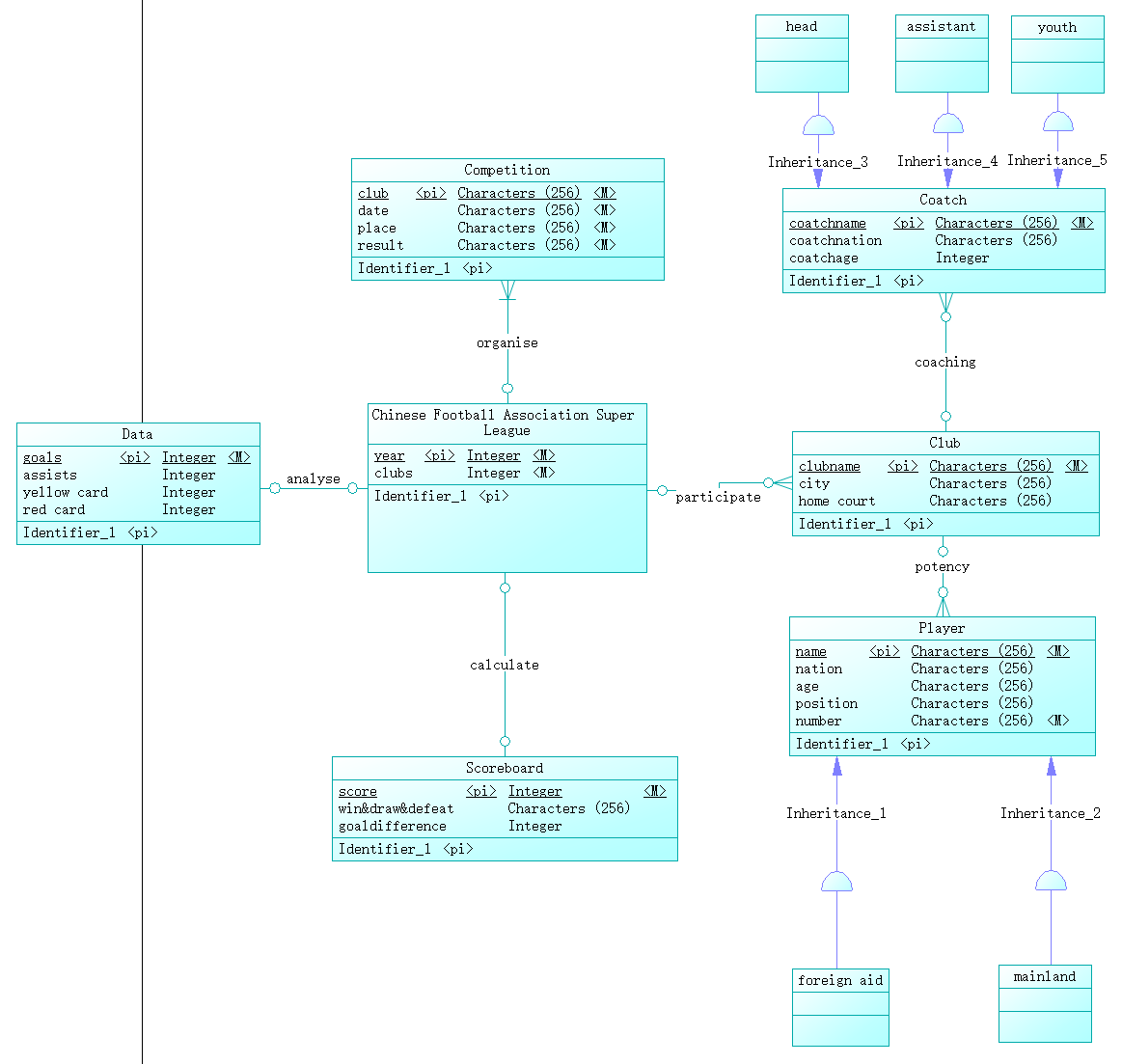
1. 用SQL语句创建关系模型



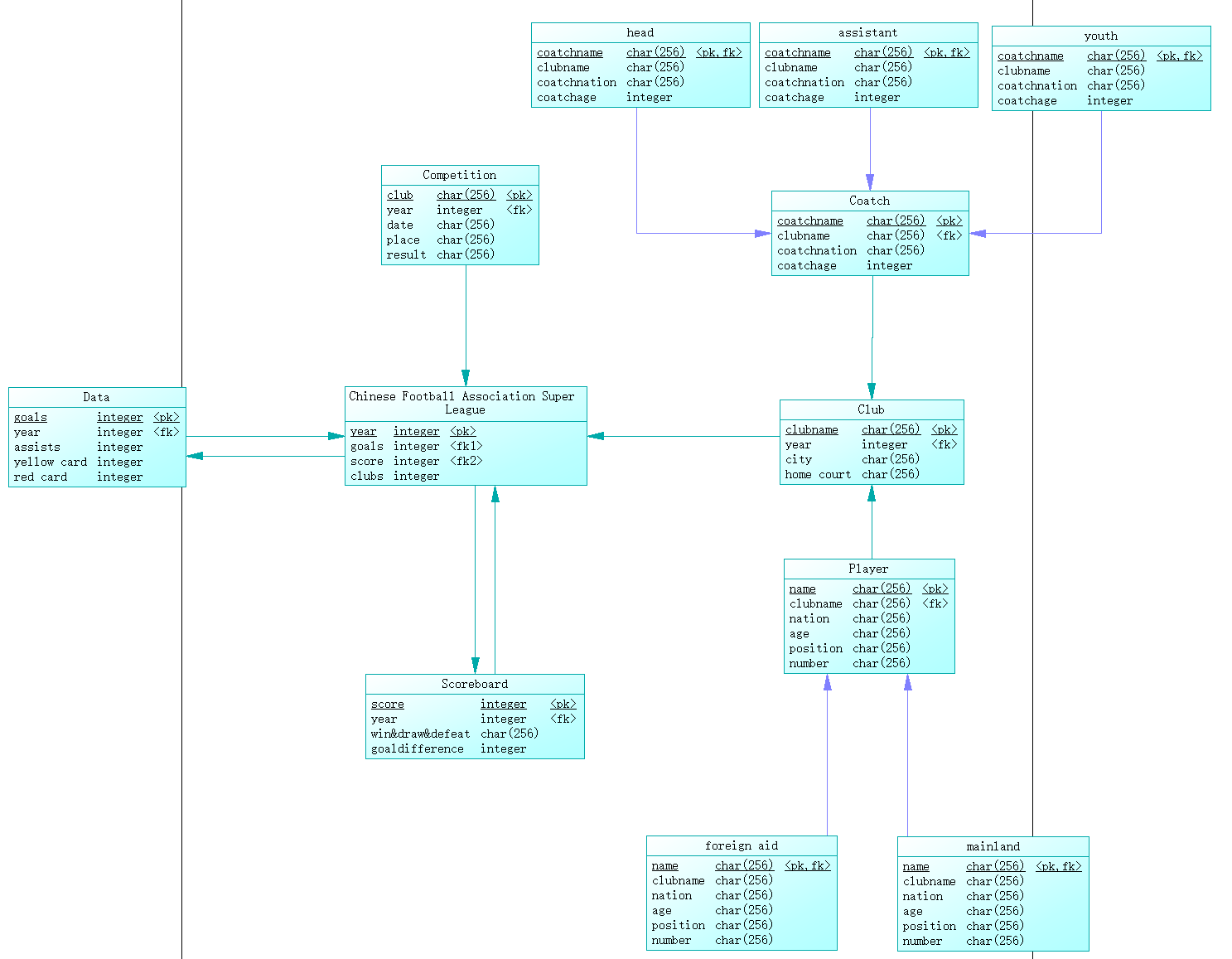
1. 五个查询语句样例



1. power designer画ER图



6.power designer画关系模型



7.power designer生成创建数据库的SQL语句

/\*==============================================================\*/

/\* DBMS name: Sybase SQL Anywhere 12 \*/

/\* Created on: 2024/4/15 19:54:43 \*/

/\*==============================================================\*/

if exists(select 1 from sys.sysforeignkey where role='FK\_CHINESE \_ANALYSE2\_DATA') then

alter table "Chinese Football Association Super League"

delete foreign key "FK\_CHINESE \_ANALYSE2\_DATA"

end if;

if exists(select 1 from sys.sysforeignkey where role='FK\_CHINESE \_CALCULATE\_SCOREBOA') then

alter table "Chinese Football Association Super League"

delete foreign key "FK\_CHINESE \_CALCULATE\_SCOREBOA"

end if;

if exists(select 1 from sys.sysforeignkey where role='FK\_CLUB\_PARTICIPA\_CHINESE') then

alter table Club

delete foreign key FK\_CLUB\_PARTICIPA\_CHINESE

end if;

if exists(select 1 from sys.sysforeignkey where role='FK\_COATCH\_COACHING\_CLUB') then

alter table Coatch

delete foreign key FK\_COATCH\_COACHING\_CLUB

end if;

if exists(select 1 from sys.sysforeignkey where role='FK\_COMPETIT\_ORGANISE\_CHINESE') then

alter table Competition

delete foreign key FK\_COMPETIT\_ORGANISE\_CHINESE

end if;

if exists(select 1 from sys.sysforeignkey where role='FK\_DATA\_ANALYSE\_CHINESE') then

alter table Data

delete foreign key FK\_DATA\_ANALYSE\_CHINESE

end if;

if exists(select 1 from sys.sysforeignkey where role='FK\_PLAYER\_POTENCY\_CLUB') then

alter table Player

delete foreign key FK\_PLAYER\_POTENCY\_CLUB

end if;

if exists(select 1 from sys.sysforeignkey where role='FK\_SCOREBOA\_CALCULATE\_CHINESE') then

alter table Scoreboard

delete foreign key FK\_SCOREBOA\_CALCULATE\_CHINESE

end if;

if exists(select 1 from sys.sysforeignkey where role='FK\_ASSISTAN\_INHERITAN\_COATCH') then

alter table assistant

delete foreign key FK\_ASSISTAN\_INHERITAN\_COATCH

end if;

if exists(select 1 from sys.sysforeignkey where role='FK\_FOREIGN \_INHERITAN\_PLAYER') then

alter table "foreign aid"

delete foreign key "FK\_FOREIGN \_INHERITAN\_PLAYER"

end if;

if exists(select 1 from sys.sysforeignkey where role='FK\_HEAD\_INHERITAN\_COATCH') then

alter table head

delete foreign key FK\_HEAD\_INHERITAN\_COATCH

end if;

if exists(select 1 from sys.sysforeignkey where role='FK\_MAINLAND\_INHERITAN\_PLAYER') then

alter table mainland

delete foreign key FK\_MAINLAND\_INHERITAN\_PLAYER

end if;

if exists(select 1 from sys.sysforeignkey where role='FK\_YOUTH\_INHERITAN\_COATCH') then

alter table youth

delete foreign key FK\_YOUTH\_INHERITAN\_COATCH

end if;

drop index if exists "Chinese Football Association Super League".calculate\_FK;

drop index if exists "Chinese Football Association Super League".analyse2\_FK;

drop index if exists "Chinese Football Association Super League"."Chinese Football Association Super League\_PK";

drop table if exists "Chinese Football Association Super League";

drop index if exists Club.participate\_FK;

drop index if exists Club.Club\_PK;

drop table if exists Club;

drop index if exists Coatch.coaching\_FK;

drop index if exists Coatch.Coatch\_PK;

drop table if exists Coatch;

drop index if exists Competition.organise\_FK;

drop index if exists Competition.Competition\_PK;

drop table if exists Competition;

drop index if exists Data.analyse\_FK;

drop index if exists Data.Data\_PK;

drop table if exists Data;

drop index if exists Player.potency\_FK;

drop index if exists Player.Player\_PK;

drop table if exists Player;

drop index if exists Scoreboard.calculate2\_FK;

drop index if exists Scoreboard.Scoreboard\_PK;

drop table if exists Scoreboard;

drop index if exists assistant.assistant\_PK;

drop table if exists assistant;

drop index if exists "foreign aid"."foreign aid\_PK";

drop table if exists "foreign aid";

drop index if exists head.head\_PK;

drop table if exists head;

drop index if exists mainland.mainland\_PK;

drop table if exists mainland;

drop index if exists youth.youth\_PK;

drop table if exists youth;

/\*==============================================================\*/

/\* Table: "Chinese Football Association Super League" \*/

/\*==============================================================\*/

create table "Chinese Football Association Super League"

(

year integer not null,

goals integer null,

score integer null,

clubs integer not null,

constraint "PK\_CHINESE FOOTBALL ASSOCIATIO" primary key (year)

);

/\*==============================================================\*/

/\* Index: "Chinese Football Association Super League\_PK" \*/

/\*==============================================================\*/

create unique index "Chinese Football Association Super League\_PK" on "Chinese Football Association Super League" (

year ASC

);

/\*==============================================================\*/

/\* Index: analyse2\_FK \*/

/\*==============================================================\*/

create index analyse2\_FK on "Chinese Football Association Super League" (

goals ASC

);

/\*==============================================================\*/

/\* Index: calculate\_FK \*/

/\*==============================================================\*/

create index calculate\_FK on "Chinese Football Association Super League" (

score ASC

);

/\*==============================================================\*/

/\* Table: Club \*/

/\*==============================================================\*/

create table Club

(

clubname char(256) not null,

year integer null,

city char(256) null,

"home court" char(256) null,

constraint PK\_CLUB primary key (clubname)

);

/\*==============================================================\*/

/\* Index: Club\_PK \*/

/\*==============================================================\*/

create unique index Club\_PK on Club (

clubname ASC

);

/\*==============================================================\*/

/\* Index: participate\_FK \*/

/\*==============================================================\*/

create index participate\_FK on Club (

year ASC

);

/\*==============================================================\*/

/\* Table: Coatch \*/

/\*==============================================================\*/

create table Coatch

(

coatchname char(256) not null,

clubname char(256) null,

coatchnation char(256) null,

coatchage integer null,

constraint PK\_COATCH primary key (coatchname)

);

/\*==============================================================\*/

/\* Index: Coatch\_PK \*/

/\*==============================================================\*/

create unique index Coatch\_PK on Coatch (

coatchname ASC

);

/\*==============================================================\*/

/\* Index: coaching\_FK \*/

/\*==============================================================\*/

create index coaching\_FK on Coatch (

clubname ASC

);

/\*==============================================================\*/

/\* Table: Competition \*/

/\*==============================================================\*/

create table Competition

(

club char(256) not null,

year integer null,

"date" char(256) not null,

place char(256) not null,

result char(256) not null,

constraint PK\_COMPETITION primary key (club)

);

/\*==============================================================\*/

/\* Index: Competition\_PK \*/

/\*==============================================================\*/

create unique index Competition\_PK on Competition (

club ASC

);

/\*==============================================================\*/

/\* Index: organise\_FK \*/

/\*==============================================================\*/

create index organise\_FK on Competition (

year ASC

);

/\*==============================================================\*/

/\* Table: Data \*/

/\*==============================================================\*/

create table Data

(

goals integer not null,

year integer null,

assists integer null,

"yellow card" integer null,

"red card" integer null,

constraint PK\_DATA primary key (goals)

);

/\*==============================================================\*/

/\* Index: Data\_PK \*/

/\*==============================================================\*/

create unique index Data\_PK on Data (

goals ASC

);

/\*==============================================================\*/

/\* Index: analyse\_FK \*/

/\*==============================================================\*/

create index analyse\_FK on Data (

year ASC

);

/\*==============================================================\*/

/\* Table: Player \*/

/\*==============================================================\*/

create table Player

(

name char(256) not null,

clubname char(256) null,

nation char(256) null,

age char(256) null,

position char(256) null,

number char(256) not null,

constraint PK\_PLAYER primary key (name)

);

/\*==============================================================\*/

/\* Index: Player\_PK \*/

/\*==============================================================\*/

create unique index Player\_PK on Player (

name ASC

);

/\*==============================================================\*/

/\* Index: potency\_FK \*/

/\*==============================================================\*/

create index potency\_FK on Player (

clubname ASC

);

/\*==============================================================\*/

/\* Table: Scoreboard \*/

/\*==============================================================\*/

create table Scoreboard

(

score integer not null,

year integer null,

win&draw&defeat char(256) null,

goaldifference integer null,

constraint PK\_SCOREBOARD primary key (score)

);

/\*==============================================================\*/

/\* Index: Scoreboard\_PK \*/

/\*==============================================================\*/

create unique index Scoreboard\_PK on Scoreboard (

score ASC

);

/\*==============================================================\*/

/\* Index: calculate2\_FK \*/

/\*==============================================================\*/

create index calculate2\_FK on Scoreboard (

year ASC

);

/\*==============================================================\*/

/\* Table: assistant \*/

/\*==============================================================\*/

create table assistant

(

coatchname char(256) not null,

clubname char(256) null,

coatchnation char(256) null,

coatchage integer null,

constraint PK\_ASSISTANT primary key clustered (coatchname)

);

/\*==============================================================\*/

/\* Index: assistant\_PK \*/

/\*==============================================================\*/

create unique clustered index assistant\_PK on assistant (

coatchname ASC

);

/\*==============================================================\*/

/\* Table: "foreign aid" \*/

/\*==============================================================\*/

create table "foreign aid"

(

name char(256) not null,

clubname char(256) null,

nation char(256) null,

age char(256) null,

position char(256) null,

number char(256) not null,

constraint "PK\_FOREIGN AID" primary key clustered (name)

);

/\*==============================================================\*/

/\* Index: "foreign aid\_PK" \*/

/\*==============================================================\*/

create unique clustered index "foreign aid\_PK" on "foreign aid" (

name ASC

);

/\*==============================================================\*/

/\* Table: head \*/

/\*==============================================================\*/

create table head

(

coatchname char(256) not null,

clubname char(256) null,

coatchnation char(256) null,

coatchage integer null,

constraint PK\_HEAD primary key clustered (coatchname)

);

/\*==============================================================\*/

/\* Index: head\_PK \*/

/\*==============================================================\*/

create unique clustered index head\_PK on head (

coatchname ASC

);

/\*==============================================================\*/

/\* Table: mainland \*/

/\*==============================================================\*/

create table mainland

(

name char(256) not null,

clubname char(256) null,

nation char(256) null,

age char(256) null,

position char(256) null,

number char(256) not null,

constraint PK\_MAINLAND primary key clustered (name)

);

/\*==============================================================\*/

/\* Index: mainland\_PK \*/

/\*==============================================================\*/

create unique clustered index mainland\_PK on mainland (

name ASC

);

/\*==============================================================\*/

/\* Table: youth \*/

/\*==============================================================\*/

create table youth

(

coatchname char(256) not null,

clubname char(256) null,

coatchnation char(256) null,

coatchage integer null,

constraint PK\_YOUTH primary key clustered (coatchname)

);

/\*==============================================================\*/

/\* Index: youth\_PK \*/

/\*==============================================================\*/

create unique clustered index youth\_PK on youth (

coatchname ASC

);

alter table "Chinese Football Association Super League"

add constraint "FK\_CHINESE \_ANALYSE2\_DATA" foreign key (goals)

references Data (goals)

on update restrict

on delete restrict;

alter table "Chinese Football Association Super League"

add constraint "FK\_CHINESE \_CALCULATE\_SCOREBOA" foreign key (score)

references Scoreboard (score)

on update restrict

on delete restrict;

alter table Club

add constraint FK\_CLUB\_PARTICIPA\_CHINESE foreign key (year)

references "Chinese Football Association Super League" (year)

on update restrict

on delete restrict;

alter table Coatch

add constraint FK\_COATCH\_COACHING\_CLUB foreign key (clubname)

references Club (clubname)

on update restrict

on delete restrict;

alter table Competition

add constraint FK\_COMPETIT\_ORGANISE\_CHINESE foreign key (year)

references "Chinese Football Association Super League" (year)

on update restrict

on delete restrict;

alter table Data

add constraint FK\_DATA\_ANALYSE\_CHINESE foreign key (year)

references "Chinese Football Association Super League" (year)

on update restrict

on delete restrict;

alter table Player

add constraint FK\_PLAYER\_POTENCY\_CLUB foreign key (clubname)

references Club (clubname)

on update restrict

on delete restrict;

alter table Scoreboard

add constraint FK\_SCOREBOA\_CALCULATE\_CHINESE foreign key (year)

references "Chinese Football Association Super League" (year)

on update restrict

on delete restrict;

alter table assistant

add constraint FK\_ASSISTAN\_INHERITAN\_COATCH foreign key (coatchname)

references Coatch (coatchname)

on update restrict

on delete restrict;

alter table "foreign aid"

add constraint "FK\_FOREIGN \_INHERITAN\_PLAYER" foreign key (name)

references Player (name)

on update restrict

on delete restrict;

alter table head

add constraint FK\_HEAD\_INHERITAN\_COATCH foreign key (coatchname)

references Coatch (coatchname)

on update restrict

on delete restrict;

alter table mainland

add constraint FK\_MAINLAND\_INHERITAN\_PLAYER foreign key (name)

references Player (name)

on update restrict

on delete restrict;

alter table youth

add constraint FK\_YOUTH\_INHERITAN\_COATCH foreign key (coatchname)

references Coatch (coatchname)

on update restrict

on delete restrict;

8.两种关系模式的设计存在的差异：

属性约束：第一种只能显示多对多关系的约束和具有其他属性的约束。

会对后期实验产生一些影响，比如数据一致性、SQL查询语句的编写等。

9.PowerDesigner生成的SQL 语句具有规范性、完整性、可读性和自动化等特点，能够有效地帮助开发人员快速生成符合要求的数据库对象定义和操作语句，提高了数据库设计和开发的效率和质量。

PowerDesigner生成的SQL语句中可能会出现一些附加语句，例如创建表之前可能会先删除已存在的同名表，或者创建外键之前会先删除已存在的同名外键等。这些附加语句的作用主要是为了保证生成的SQL能够在目标数据库上正确执行，避免出现重复对象或约束的情况，确保数据库的一致性和完整性。