【Experiment name】 Database Experiment 1 - Database Principle Experiment

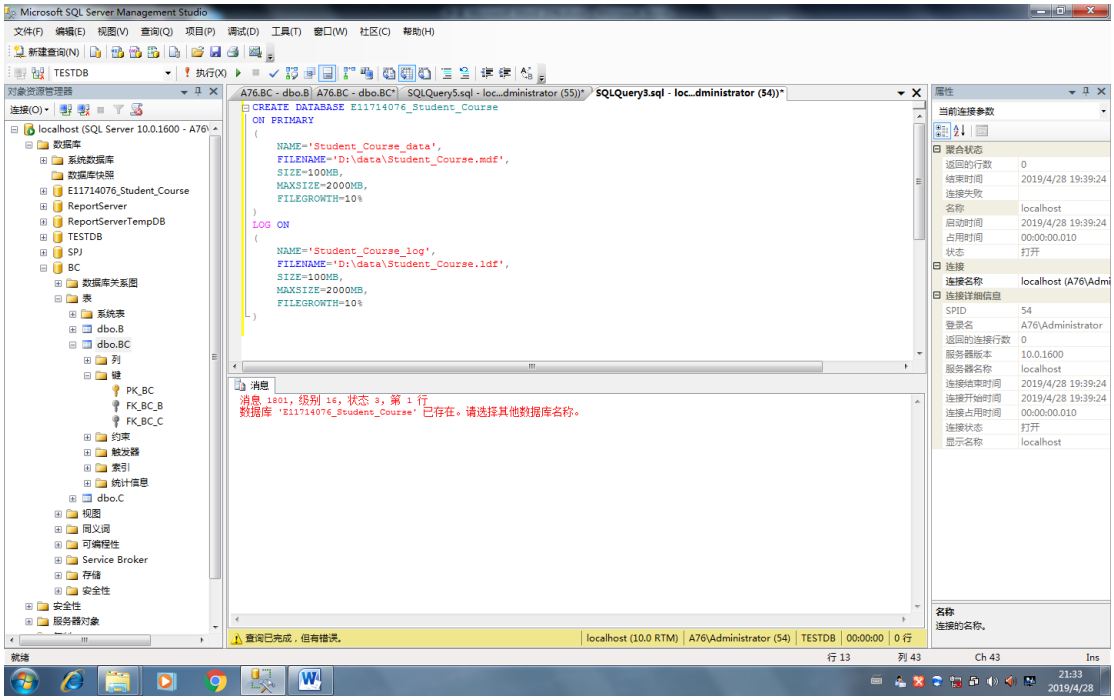
【Experimental Requirements 】

1. Familiar with SQL Server
2. Create a database and its basic tables, give corresponding data constraints based on common sense, and create several indexes; and practice basic table maintenance operations (modify table structure, delete table definition, etc.).

【Experimental content】

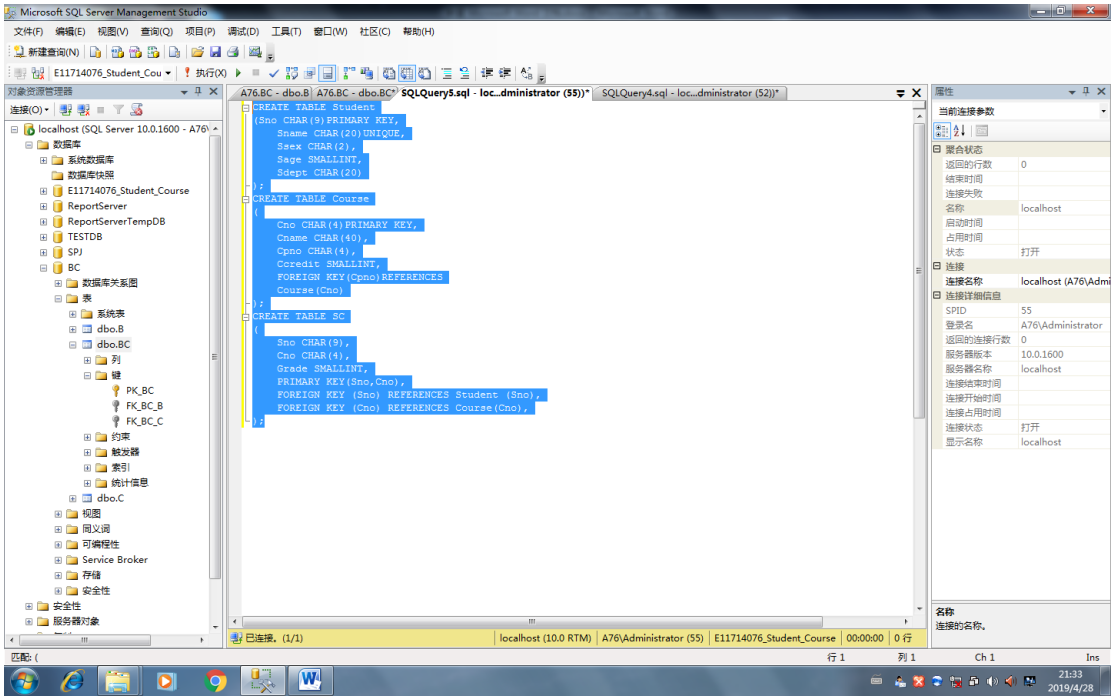
Task: Create a database with SQL statements

```
CREATE DATABASE A101 _Student_Course
ON PRIMARY
(
    NAME = 'Student_Course_data' ,
    FILENAME = 'D:\data\Student_Course.mdf' ,
    SIZE = 100 MB ,
    MAXSIZE = 2000 MB ,
    FILEGROWTH = 10 %
)
LOG ON
(
    NAME = 'Student_Course_log' ,
    FILENAME = 'D:\data\Student_Course.ldf' ,
    SIZE = 100 MB ,
    MAXSIZE = 2000 MB ,
    FILEGROWTH = 10 %
)
```



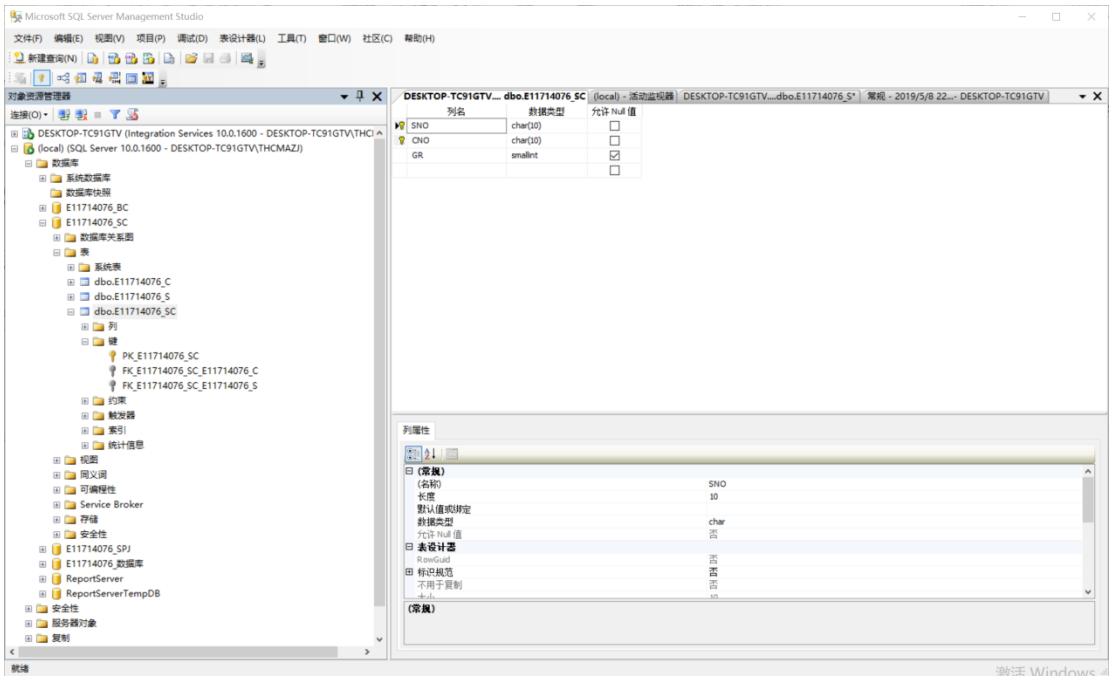
Task: Create basic tables in the SC database

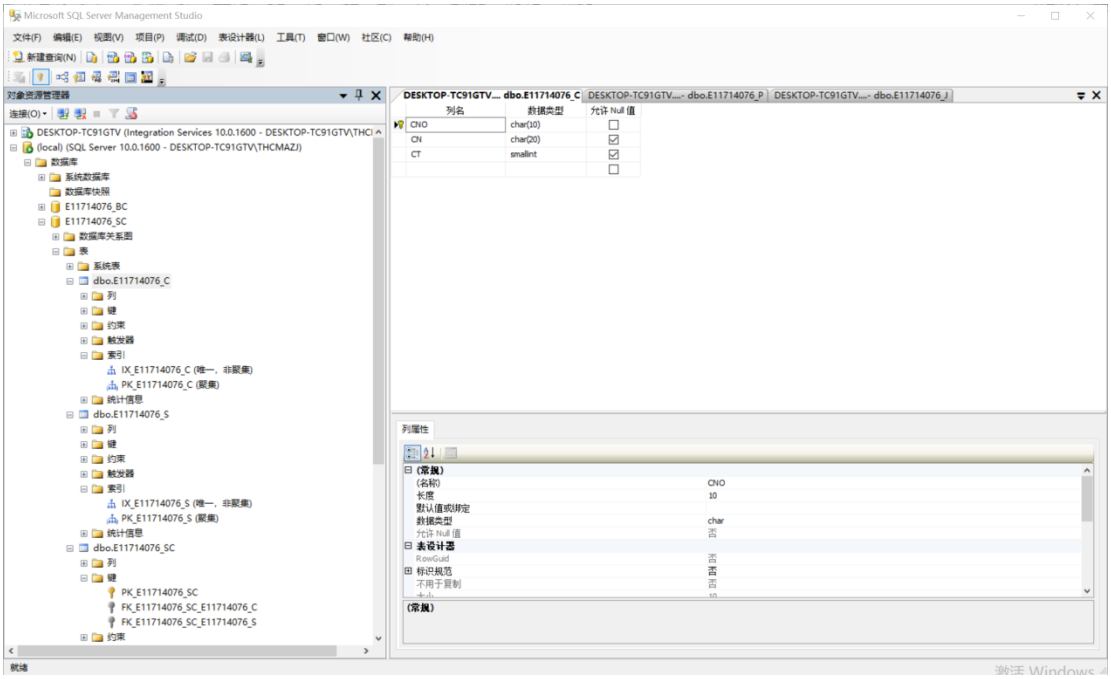
```
CREATE TABLE Student
( Sno CHAR ( 9 ) PRIMARY KEY ,
    Sname CHAR ( 20 ) UNIQUE ,
    Ssex CHAR ( 2 ),
    Sage SMALLINT ,
    Sdept CHAR ( 20 )
);
CREATE TABLE Course
(
    Cno CHAR ( 4 ) PRIMARY KEY ,
    Cname CHAR ( 40 ),
    Cpno CHAR ( 4 ),
    Ccredit SMALLINT ,
    FOREIGN KEY ( Cpno ) REFERENCES
    Course ( Cno )
);
CREATE TABLE SC
(
    Snow CHAR ( 9 ),
    Cno CHAR ( 4 ),
    Grade SMALLINT ,
    PRIMARY KEY ( Sno , Cno ),
    FOREIGN KEY ( Sno ) REFERENCES Student ( Sno ),
    FOREIGN KEY ( Cno ) REFERENCES Course ( Cno ),
);
```

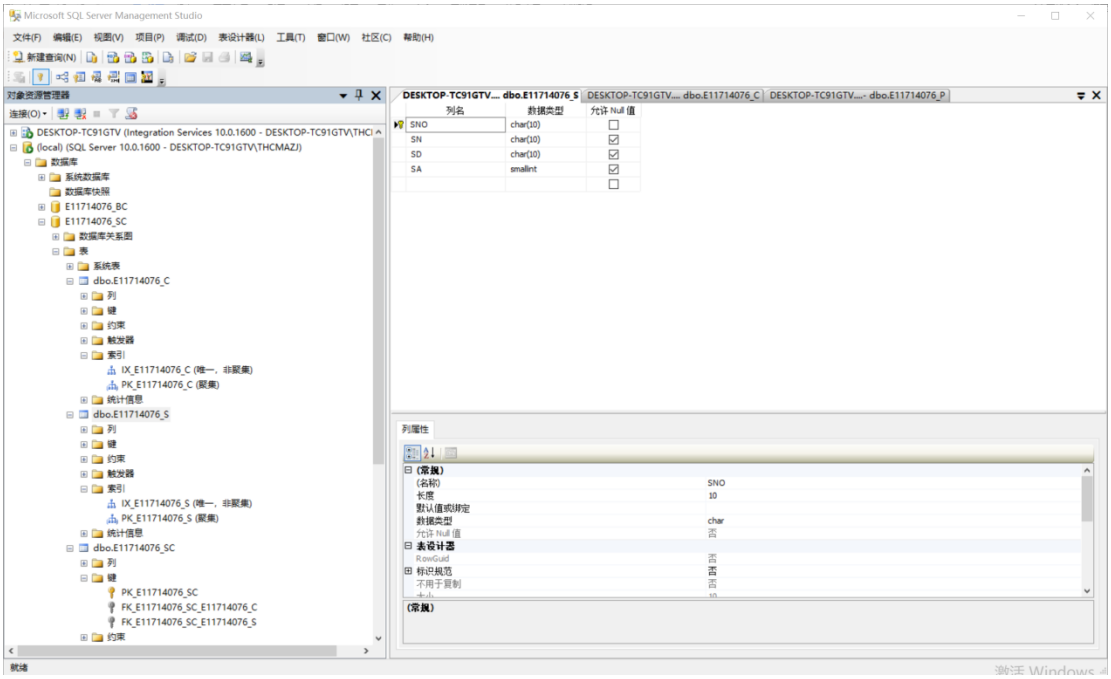


Task: Student Relationship S (SNO, SN, SD, SA)
Each attribute represents the student ID, name, department, age;
Course Relationship C (CNO, CN, CT)
Each attribute represents the course number, course name and class hours respectively;
Course selection relationship SC (SNO, CNO, GR)
Each attribute represents the student number, elective course number, and grade respectively;

SC screenshot:







Task: Create the SPJ database and the basic tables in the second chapter of the job

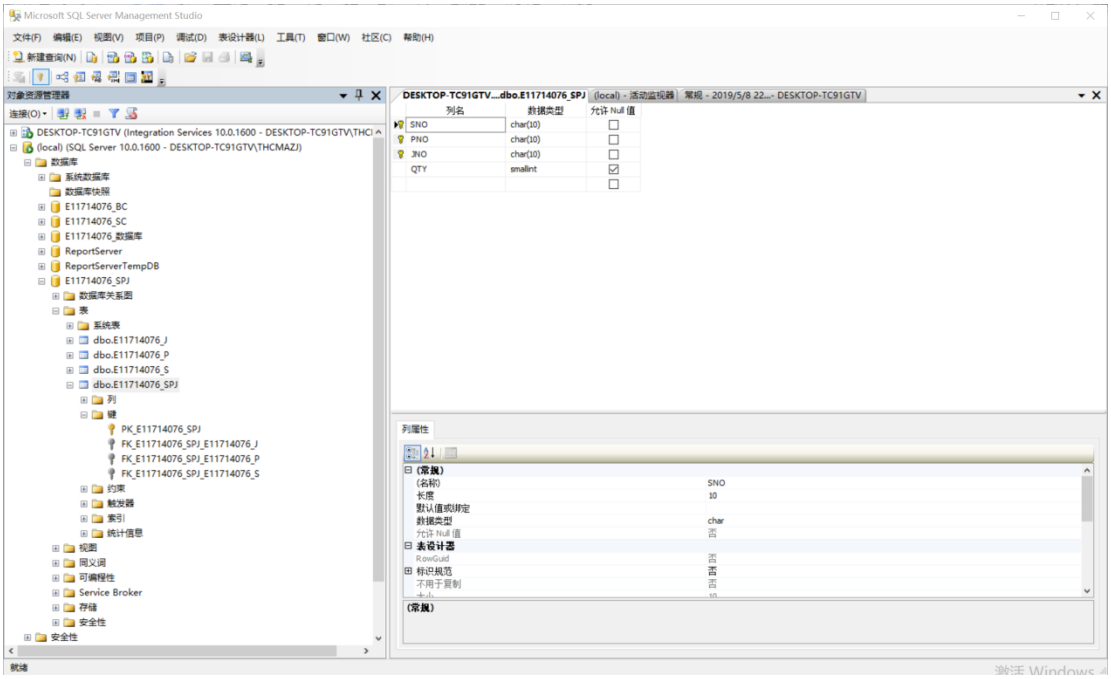
supplier

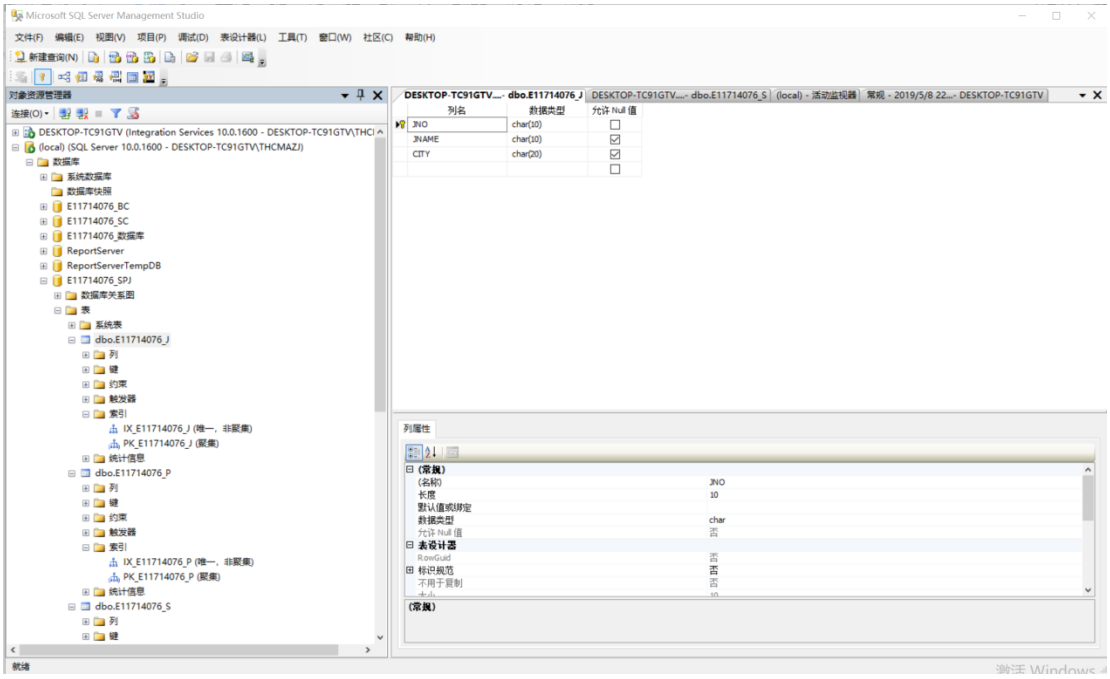
Part P

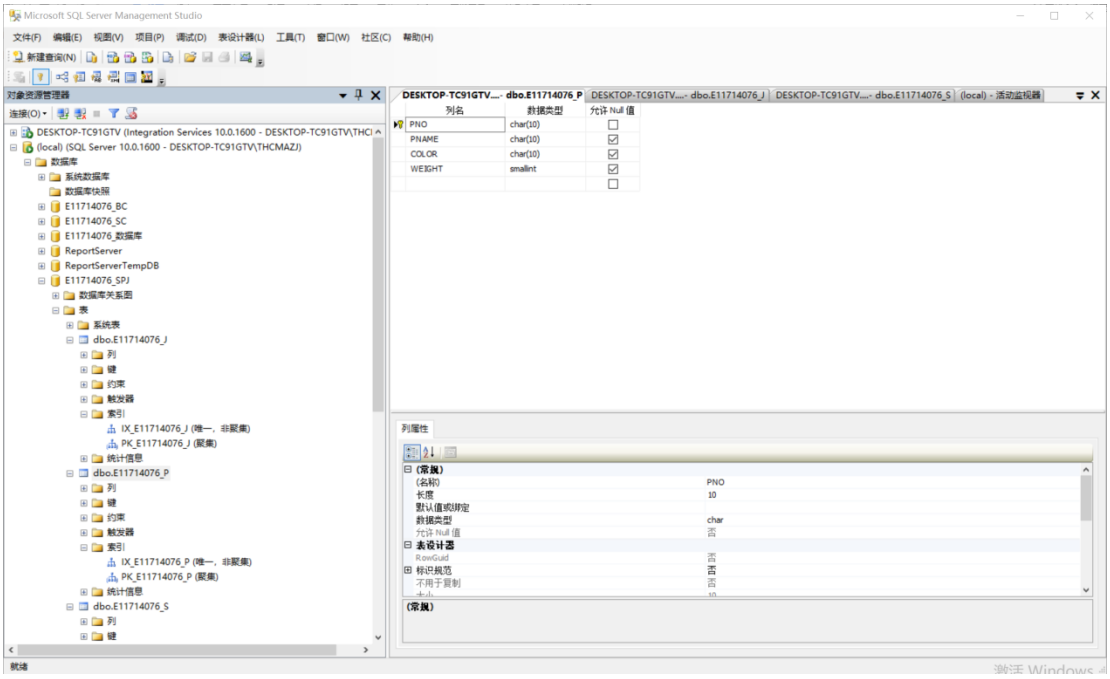
engineering

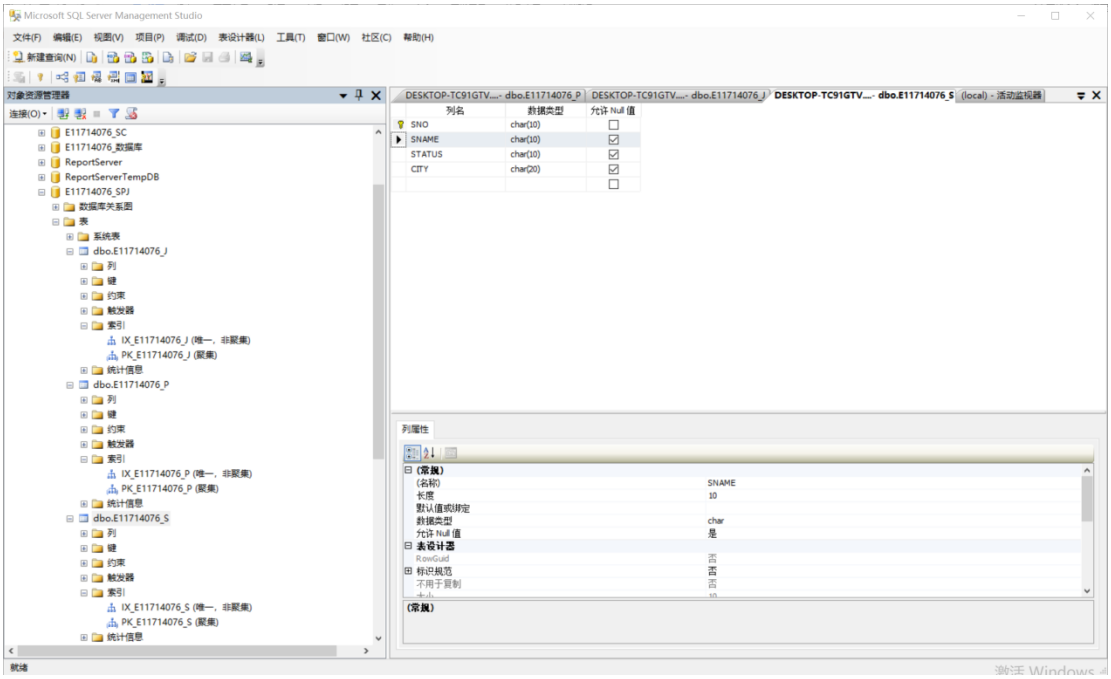
Supply SPJ

SPJ :


Microsoft SQL Server Management Studio
文件(F) 编辑(E) 视图(V) 项目(P) 调试(D) 表设计器(L) 工具(T) 窗口(W) 社区(C) 帮助(H)
新建查询(N)
对象资源管理器
连接(O)
DESKTOP-TC91GTV (Integration Services 10.0.1600 - DESKTOP-TC91GTV\THCI
(local) (SQL Server 10.0.1600 - DESKTOP-TC91GTV\THCMAZJ)
数据库
系统数据库
数据库快照
E11714076_BC
E11714076_SC
E11714076_数据库
ReportServer
ReportServerTempDB
E11714076_SPJ
数据库关系图
表
系统表
dbo.E11714076_J
dbo.E11714076_P
dbo.E11714076_S
dbo.E11714076_SPJ
列
键
PK_E11714076_SPJ
FK_E11714076_SPJ_E11714076_J
FK_E11714076_SPJ_E11714076_P
FK_E11714076_SPJ_E11714076_S
约束
触发器
索引
统计信息
视图
同义词
可编程性
Service Broker
存储
安全性
安全性
DESKTOP-TC91GTV....dbo.E11714076_SPJ
(local) - 活动监视器
常规 - 2019/5/8 22...- DESKTOP-TC91GTV
列名
数据类型
允许 Null 值
SNO
char(10)
PNO
char(10)
JNO
char(10)
QTY
smallint
列属性
(常规)
(名称)
SNO
长度
10
默认值或绑定
数据类型
char
允许 Null 值
否
表设计器
RowGuid
否
标识规范
否
不用于复制
否
(常规)
就绪


Microsoft SQL Server Management Studio
文件(F) 编辑(E) 视图(V) 项目(P) 调试(D) 表设计器(L) 工具(T) 窗口(W) 社区(C) 帮助(H)
新建查询(N)
对象资源管理器
连接(O)
DESKTOP-TC91GTV (Integration Services 10.0.1600 - DESKTOP-TC91GTV\THCI
(local) (SQL Server 10.0.1600 - DESKTOP-TC91GTV\THCMAZJ)
数据库
系统数据库
数据库快照
E11714076_BC
E11714076_SC
E11714076_数据库
ReportServer
ReportServerTempDB
E11714076_SPJ
数据库关系图
表
系统表
dbo.E11714076_J
列
键
约束
触发器
索引
IX_E11714076_J (唯一，非聚集)
PK_E11714076_J (聚集)
统计信息
dbo.E11714076_P
列
键
约束
触发器
索引
IX_E11714076_P (唯一，非聚集)
PK_E11714076_P (聚集)
统计信息
dbo.E11714076_S
列
键
DESKTOP-TC91GTV....- dbo.E11714076_J
DESKTOP-TC91GTV....- dbo.E11714076_S
(local) - 活动监视器
常规 - 2019/5/8 22...- DESKTOP-TC91GTV
列名
数据类型
允许 Null 值
JNO
char(10)
JNAME
char(10)
CITY
char(20)
列属性
(常规)
(名称)
JNO
长度
10
默认值或绑定
数据类型
char
允许 Null 值
否
表设计器
RowGuid
否
标识规范
否
不用于复制
否
(常规)
就绪





Task: The textbook management database consists of the following three relational schemas, create the database and its basic tables.

Textbooks (ISBN, Book Title, Author, Publisher)

B (Bno, Bname, Author, pub)

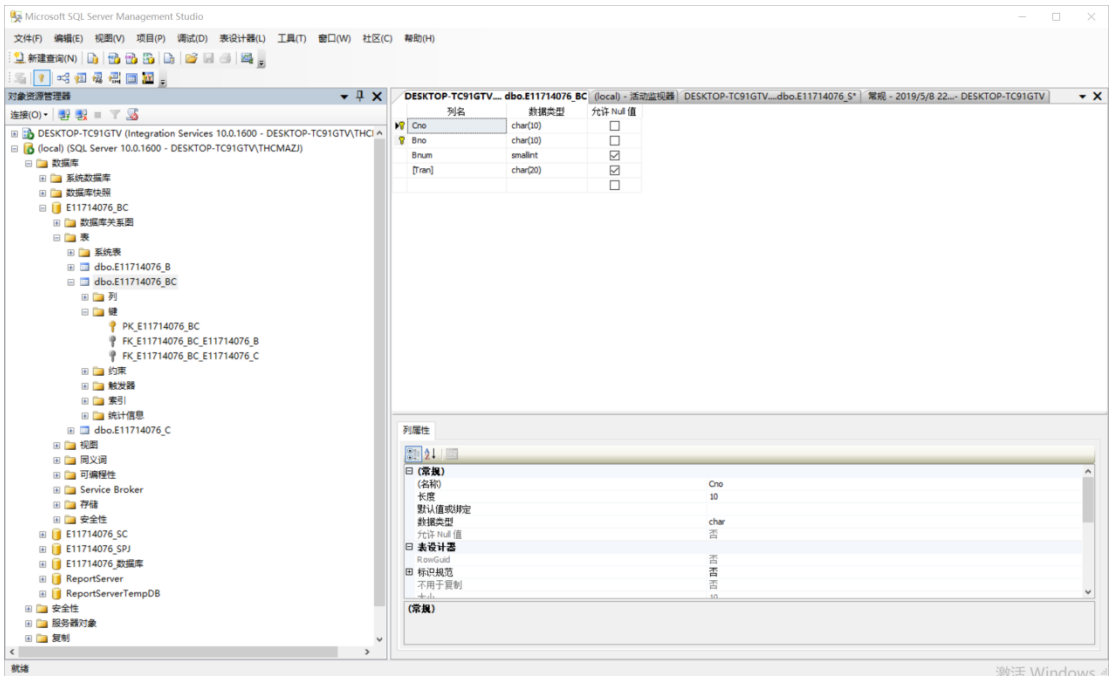
Class (class number, major, department, number of people)

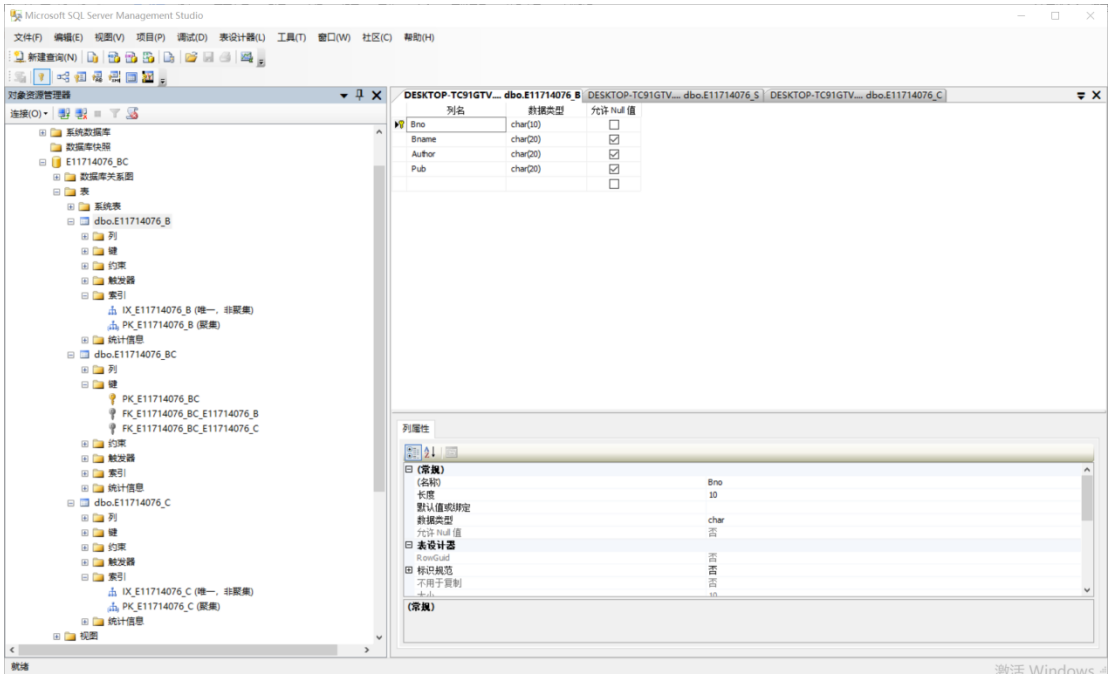
C (Cno, Spe, Dept, Cnum)

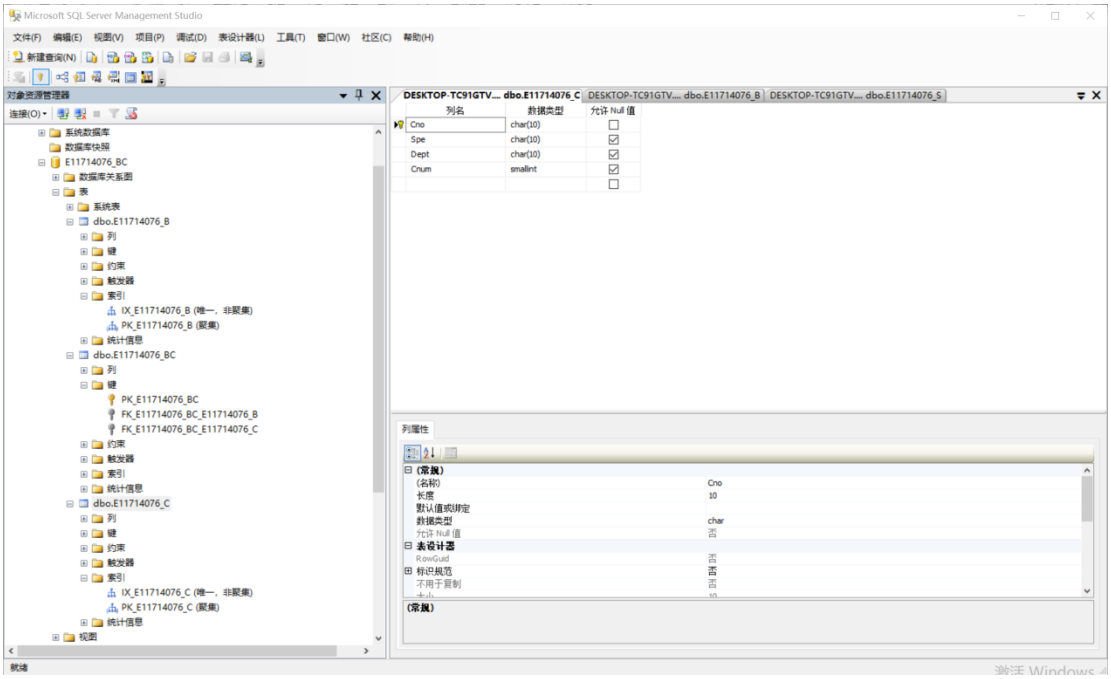
Receive (class number, book number, quantity, handler)

BC (Cno, Bno, Bnum, Tran)

BC screenshot:







summary:

Through this experiment, I have experienced the five main characteristics of SQL database in detail: 1. Comprehensive and unified; 2. Highly non-procedural; 3. Set-oriented operation; Easy to learn and use.

Learned basic operations such as creating a database, building tables, setting primary keys, creating indexes, setting foreign keys, etc., familiarized with the use of SQL Server, learned the methods and related operations of creating a database and the basic tables in it, and laid a solid foundation for future database experiments.