# 数据库原理 课程设计任务书

## 一 题目

学生选课系统

## 二 需求分析

1. 根据学生专业学年学期等信息，录入课程完成课程计划
2. 根据课程计划，录入任课教师信息
3. 学生可以根据学年学期等信息，选择课程完成选课要求

## 三 结构概念设计

计划受众表信息

学生表信息

教师表信息

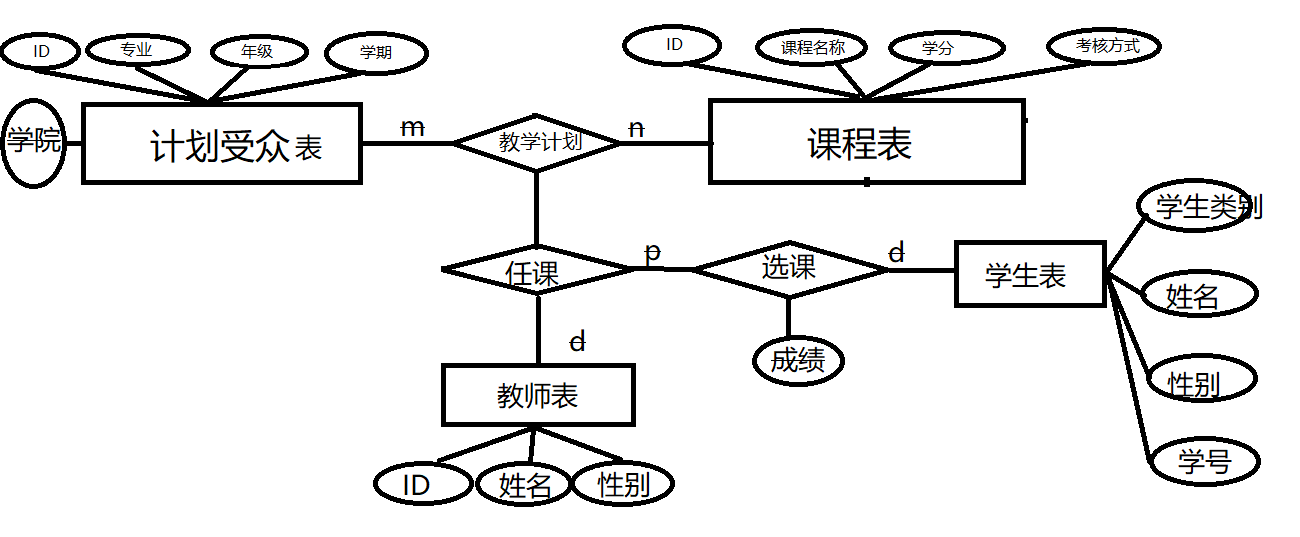
课程表信息

教学计划表信息

任课表信息

学生选课表信息

## 四 ER图



## 五 数据字典

Stdunt表（学生表）

字段名 数据类型 长度 约束 描述

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 字段名 | 数据类型 | 长度 | 约束 | 描述 |
| Student\_id | Nvar char | 50 | 主键 | 学生学号 |
| Gender | Nvarchar | 50 | 无 | 性别 |
| Name | Nvarchar | 50 | 无 | 学生名字 |
| category | Nvarchar | 50 | 无 | 种类 |

Course表（课程表）

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 字段名 | 数据类型 | 长度 | 约束 | 描述 |
| course\_id | Nvarchar | 50 | 主键 | 课程号 |
| Name | Nvarchar | 50 | 唯一键 | 课程名 |
| mode | Nvarchar | 50 | 无 | 考核方式 |
| Credit | Int |  | 无 | 学分 |

Teach表（教师任课表）

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 字段名 | 数据类型 | 长度 | 约束 | 描述 |
| Teach\_id | Nvarchar | 50 | 主键 | 任课号 |
| Plan\_id | Nvarchar | 50 | 外键，组合唯一键 | 教学计划号 |
| Teacher\_id | Nvarchar | 50 | 外键，组合唯一键 | 教师编号 |

Teacher表（教师表）

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 字段名 | 数据类型 | 长度 | 约束 | 描述 |
| Teacher\_id | Nvarchar | 50 | 主键 | 教师编号 |
| Name | Nvarchar | 50 | 无 | 教师名 |
| Gender | Nvarchar | 50 | 无 | 性别 |

Student\_select表（学生选课表）

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 字段名 | 数据类型 | 长度 | 约束 | 描述 |
| Select\_id | Nvarchar | 50 | 主键 | 选课号 |
| Student\_id | Nvarchar | 50 | 外键，组合唯一键 | 学生编号 |
| Teach\_id | Nvarchar | 50 | 外键，组合唯一键 | 排课编号 |

Administrator表

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 字段名 | 数据类型 | 长度 | 约束 | 描述 |
| administrator | Nvarchar | 50 |  | 管理员号 |
| password | Nvarchar | 50 |  | 密码 |

Plan表（教学计划表）

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 字段名 | 数据类型 | 长度 | 约束 | 描述 |
| plan\_id | nvarchar | 50 | 主键 | 教学计划号 |
| audience\_id | nvarchar | 50 | 外键，组合唯一键 | 计划受众号 |
| course\_id | nvarchar | 50 | 外键，组合唯一键 | 课程号 |

audience表（计划受众表）

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 字段名 | 数据类型 | 长度 | 约束 | 描述 |
| auience\_id | nvarchar | 50 | 主键约束 | 计划受众id |
| academy | nvarchar | 50 | 无 | 学院 |
| major | nvarchar | 50 | 无 | 专业 |
| grade | nvarchar | 50 | 无 | 年级 |
| semester | Int |  | 无 | 学期 |

## 六 数据库定义语句

CREATE DATABASE [Student\_Select]

GO

USE [Student\_Select]

GO

/\*\*\*\*\*\* Object: Table [dbo].[Teacher] Script Date: 06/27/2018 10:37:01 \*\*\*\*\*\*/

SET ANSI\_NULLS ON

GO

SET QUOTED\_IDENTIFIER ON

GO

CREATE TABLE [dbo].[Teacher](

[teacher\_id] [nvarchar](50) NOT NULL,

[name] [nvarchar](50) NULL,

[gender] [nchar](10) NULL,

CONSTRAINT [PK\_Teacher] PRIMARY KEY CLUSTERED

(

[teacher\_id] ASC

)WITH (PAD\_INDEX = OFF, STATISTICS\_NORECOMPUTE = OFF, IGNORE\_DUP\_KEY = OFF, ALLOW\_ROW\_LOCKS = ON, ALLOW\_PAGE\_LOCKS = ON) ON [PRIMARY]

) ON [PRIMARY]

GO

INSERT [dbo].[Teacher] ([teacher\_id], [name], [gender]) VALUES (N'1', N'1', N'1 ')

INSERT [dbo].[Teacher] ([teacher\_id], [name], [gender]) VALUES (N'2', N'2', N'2 ')

/\*\*\*\*\*\* Object: Table [dbo].[Course] Script Date: 06/27/2018 10:37:01 \*\*\*\*\*\*/

SET ANSI\_NULLS ON

GO

SET QUOTED\_IDENTIFIER ON

GO

CREATE TABLE [dbo].[Course](

[course\_id] [nvarchar](50) NOT NULL,

[name] [nvarchar](50) NULL,

[mode] [nvarchar](50) NOT NULL,

[credit] [nvarchar](50) NULL,

CONSTRAINT [PK\_Course] PRIMARY KEY CLUSTERED

(

[course\_id] ASC

)WITH (PAD\_INDEX = OFF, STATISTICS\_NORECOMPUTE = OFF, IGNORE\_DUP\_KEY = OFF, ALLOW\_ROW\_LOCKS = ON, ALLOW\_PAGE\_LOCKS = ON) ON [PRIMARY],

CONSTRAINT [IX\_Course] UNIQUE NONCLUSTERED

(

[name] ASC

)WITH (PAD\_INDEX = OFF, STATISTICS\_NORECOMPUTE = OFF, IGNORE\_DUP\_KEY = OFF, ALLOW\_ROW\_LOCKS = ON, ALLOW\_PAGE\_LOCKS = ON) ON [PRIMARY]

) ON [PRIMARY]

GO

EXEC sys.sp\_addextendedproperty @name=N'MS\_Description', @value=N'考核方式' , @level0type=N'SCHEMA',@level0name=N'dbo', @level1type=N'TABLE',@level1name=N'Course', @level2type=N'COLUMN',@level2name=N'mode'

GO

INSERT [dbo].[Course] ([course\_id], [name], [mode], [credit]) VALUES (N'1', N'1', N'1', N'1')

INSERT [dbo].[Course] ([course\_id], [name], [mode], [credit]) VALUES (N'2', N'2', N'2', N'2')

/\*\*\*\*\*\* Object: Table [dbo].[audience] Script Date: 06/27/2018 10:37:01 \*\*\*\*\*\*/

SET ANSI\_NULLS ON

GO

SET QUOTED\_IDENTIFIER ON

GO

CREATE TABLE [dbo].[audience](

[audience\_id] [nvarchar](50) NOT NULL,

[academy] [nvarchar](50) NULL,

[major] [nvarchar](50) NULL,

[grade] [nvarchar](50) NULL,

[semester] [int] NULL,

CONSTRAINT [PK\_audience] PRIMARY KEY CLUSTERED

(

[audience\_id] ASC

)WITH (PAD\_INDEX = OFF, STATISTICS\_NORECOMPUTE = OFF, IGNORE\_DUP\_KEY = OFF, ALLOW\_ROW\_LOCKS = ON, ALLOW\_PAGE\_LOCKS = ON) ON [PRIMARY]

) ON [PRIMARY]

GO

EXEC sys.sp\_addextendedproperty @name=N'MS\_Description', @value=N'受众ID' , @level0type=N'SCHEMA',@level0name=N'dbo', @level1type=N'TABLE',@level1name=N'audience', @level2type=N'COLUMN',@level2name=N'audience\_id'

GO

EXEC sys.sp\_addextendedproperty @name=N'MS\_Description', @value=N'学院' , @level0type=N'SCHEMA',@level0name=N'dbo', @level1type=N'TABLE',@level1name=N'audience', @level2type=N'COLUMN',@level2name=N'academy'

GO

EXEC sys.sp\_addextendedproperty @name=N'MS\_Description', @value=N'年级' , @level0type=N'SCHEMA',@level0name=N'dbo', @level1type=N'TABLE',@level1name=N'audience', @level2type=N'COLUMN',@level2name=N'grade'

GO

EXEC sys.sp\_addextendedproperty @name=N'MS\_Description', @value=N'学期' , @level0type=N'SCHEMA',@level0name=N'dbo', @level1type=N'TABLE',@level1name=N'audience', @level2type=N'COLUMN',@level2name=N'semester'

GO

INSERT [dbo].[audience] ([audience\_id], [academy], [major], [grade], [semester]) VALUES (N'1', N'1', N'1', N'1', 1)

INSERT [dbo].[audience] ([audience\_id], [academy], [major], [grade], [semester]) VALUES (N'2', N'2', N'2', N'2', 2)

/\*\*\*\*\*\* Object: Table [dbo].[Administrator] Script Date: 06/27/2018 10:37:01 \*\*\*\*\*\*/

SET ANSI\_NULLS ON

GO

SET QUOTED\_IDENTIFIER ON

GO

CREATE TABLE [dbo].[Administrator](

[administrator] [nvarchar](50) NULL,

[password] [nvarchar](50) NULL

) ON [PRIMARY]

GO

/\*\*\*\*\*\* Object: Table [dbo].[Student] Script Date: 06/27/2018 10:37:01 \*\*\*\*\*\*/

SET ANSI\_NULLS ON

GO

SET QUOTED\_IDENTIFIER ON

GO

CREATE TABLE [dbo].[Student](

[student\_id] [nvarchar](50) NOT NULL,

[gender] [nchar](10) NULL,

[name] [nvarchar](50) NULL,

[category] [nvarchar](50) NOT NULL,

CONSTRAINT [PK\_Student] PRIMARY KEY CLUSTERED

(

[student\_id] ASC

)WITH (PAD\_INDEX = OFF, STATISTICS\_NORECOMPUTE = OFF, IGNORE\_DUP\_KEY = OFF, ALLOW\_ROW\_LOCKS = ON, ALLOW\_PAGE\_LOCKS = ON) ON [PRIMARY]

) ON [PRIMARY]

GO

INSERT [dbo].[Student] ([student\_id], [gender], [name], [category]) VALUES (N'1', N'1 ', N'1', N'1')

INSERT [dbo].[Student] ([student\_id], [gender], [name], [category]) VALUES (N'2', N'2 ', N'2', N'2')

/\*\*\*\*\*\* Object: Table [dbo].[Plan] Script Date: 06/27/2018 10:37:01 \*\*\*\*\*\*/

SET ANSI\_NULLS ON

GO

SET QUOTED\_IDENTIFIER ON

GO

CREATE TABLE [dbo].[Plan](

[plan\_id] [nvarchar](50) NOT NULL,

[audience\_id] [nvarchar](50) NOT NULL,

[course\_id] [nvarchar](50) NOT NULL,

CONSTRAINT [PK\_Plan] PRIMARY KEY CLUSTERED

(

[plan\_id] ASC

)WITH (PAD\_INDEX = OFF, STATISTICS\_NORECOMPUTE = OFF, IGNORE\_DUP\_KEY = OFF, ALLOW\_ROW\_LOCKS = ON, ALLOW\_PAGE\_LOCKS = ON) ON [PRIMARY],

CONSTRAINT [IX\_Plan] UNIQUE NONCLUSTERED

(

[audience\_id] ASC,

[course\_id] ASC

)WITH (PAD\_INDEX = OFF, STATISTICS\_NORECOMPUTE = OFF, IGNORE\_DUP\_KEY = OFF, ALLOW\_ROW\_LOCKS = ON, ALLOW\_PAGE\_LOCKS = ON) ON [PRIMARY]

) ON [PRIMARY]

GO

INSERT [dbo].[Plan] ([plan\_id], [audience\_id], [course\_id]) VALUES (N'1', N'1', N'1')

INSERT [dbo].[Plan] ([plan\_id], [audience\_id], [course\_id]) VALUES (N'2', N'2', N'2')

/\*\*\*\*\*\* Object: Table [dbo].[Teach] Script Date: 06/27/2018 10:37:01 \*\*\*\*\*\*/

SET ANSI\_NULLS ON

GO

SET QUOTED\_IDENTIFIER ON

GO

CREATE TABLE [dbo].[Teach](

[teach\_id] [nvarchar](50) NOT NULL,

[plan\_id] [nvarchar](50) NULL,

[teacher\_id] [nvarchar](50) NULL,

CONSTRAINT [PK\_Teach] PRIMARY KEY CLUSTERED

(

[teach\_id] ASC

)WITH (PAD\_INDEX = OFF, STATISTICS\_NORECOMPUTE = OFF, IGNORE\_DUP\_KEY = OFF, ALLOW\_ROW\_LOCKS = ON, ALLOW\_PAGE\_LOCKS = ON) ON [PRIMARY],

CONSTRAINT [IX\_Teach\_1] UNIQUE NONCLUSTERED

(

[teach\_id] ASC,

[plan\_id] ASC

)WITH (PAD\_INDEX = OFF, STATISTICS\_NORECOMPUTE = OFF, IGNORE\_DUP\_KEY = OFF, ALLOW\_ROW\_LOCKS = ON, ALLOW\_PAGE\_LOCKS = ON) ON [PRIMARY]

) ON [PRIMARY]

GO

INSERT [dbo].[Teach] ([teach\_id], [plan\_id], [teacher\_id]) VALUES (N'1', N'1', N'1')

INSERT [dbo].[Teach] ([teach\_id], [plan\_id], [teacher\_id]) VALUES (N'2', N'2', N'2')

/\*\*\*\*\*\* Object: Table [dbo].[Student\_Selete] Script Date: 06/27/2018 10:37:01 \*\*\*\*\*\*/

SET ANSI\_NULLS ON

GO

SET QUOTED\_IDENTIFIER ON

GO

CREATE TABLE [dbo].[Student\_Selete](

[selete\_id] [nvarchar](50) NOT NULL,

[student\_id] [nvarchar](50) NOT NULL,

[teach\_id] [nvarchar](50) NOT NULL,

CONSTRAINT [PK\_Student\_Selete] PRIMARY KEY CLUSTERED

(

[selete\_id] ASC

)WITH (PAD\_INDEX = OFF, STATISTICS\_NORECOMPUTE = OFF, IGNORE\_DUP\_KEY = OFF, ALLOW\_ROW\_LOCKS = ON, ALLOW\_PAGE\_LOCKS = ON) ON [PRIMARY],

CONSTRAINT [IX\_Student\_Selete\_1] UNIQUE NONCLUSTERED

(

[student\_id] ASC,

[teach\_id] ASC

)WITH (PAD\_INDEX = OFF, STATISTICS\_NORECOMPUTE = OFF, IGNORE\_DUP\_KEY = OFF, ALLOW\_ROW\_LOCKS = ON, ALLOW\_PAGE\_LOCKS = ON) ON [PRIMARY]

) ON [PRIMARY]

GO

/\*\*\*\*\*\* Object: ForeignKey [audience\_id] Script Date: 06/27/2018 10:37:01 \*\*\*\*\*\*/

ALTER TABLE [dbo].[Plan] WITH CHECK ADD CONSTRAINT [audience\_id] FOREIGN KEY([audience\_id])

REFERENCES [dbo].[audience] ([audience\_id])

GO

ALTER TABLE [dbo].[Plan] CHECK CONSTRAINT [audience\_id]

GO

/\*\*\*\*\*\* Object: ForeignKey [course\_id] Script Date: 06/27/2018 10:37:01 \*\*\*\*\*\*/

ALTER TABLE [dbo].[Plan] WITH CHECK ADD CONSTRAINT [course\_id] FOREIGN KEY([course\_id])

REFERENCES [dbo].[Course] ([course\_id])

GO

ALTER TABLE [dbo].[Plan] CHECK CONSTRAINT [course\_id]

GO

/\*\*\*\*\*\* Object: ForeignKey [plan\_id] Script Date: 06/27/2018 10:37:01 \*\*\*\*\*\*/

ALTER TABLE [dbo].[Teach] WITH CHECK ADD CONSTRAINT [plan\_id] FOREIGN KEY([plan\_id])

REFERENCES [dbo].[Plan] ([plan\_id])

GO

ALTER TABLE [dbo].[Teach] CHECK CONSTRAINT [plan\_id]

GO

/\*\*\*\*\*\* Object: ForeignKey [teacher\_id] Script Date: 06/27/2018 10:37:01 \*\*\*\*\*\*/

ALTER TABLE [dbo].[Teach] WITH CHECK ADD CONSTRAINT [teacher\_id] FOREIGN KEY([teacher\_id])

REFERENCES [dbo].[Teacher] ([teacher\_id])

GO

ALTER TABLE [dbo].[Teach] CHECK CONSTRAINT [teacher\_id]

GO

/\*\*\*\*\*\* Object: ForeignKey [student\_zhujian] Script Date: 06/27/2018 10:37:01 \*\*\*\*\*\*/

ALTER TABLE [dbo].[Student\_Selete] WITH CHECK ADD CONSTRAINT [student\_zhujian] FOREIGN KEY([student\_id])

REFERENCES [dbo].[Student] ([student\_id])

GO

ALTER TABLE [dbo].[Student\_Selete] CHECK CONSTRAINT [student\_zhujian]

GO

/\*\*\*\*\*\* Object: ForeignKey [teach\_zhujian] Script Date: 06/27/2018 10:37:01 \*\*\*\*\*\*/

ALTER TABLE [dbo].[Student\_Selete] WITH CHECK ADD CONSTRAINT [teach\_zhujian] FOREIGN KEY([teach\_id])

REFERENCES [dbo].[Teach] ([teach\_id])

GO

ALTER TABLE [dbo].[Student\_Selete] CHECK CONSTRAINT [teach\_zhujian]

GO

## 七 数据库关系图

