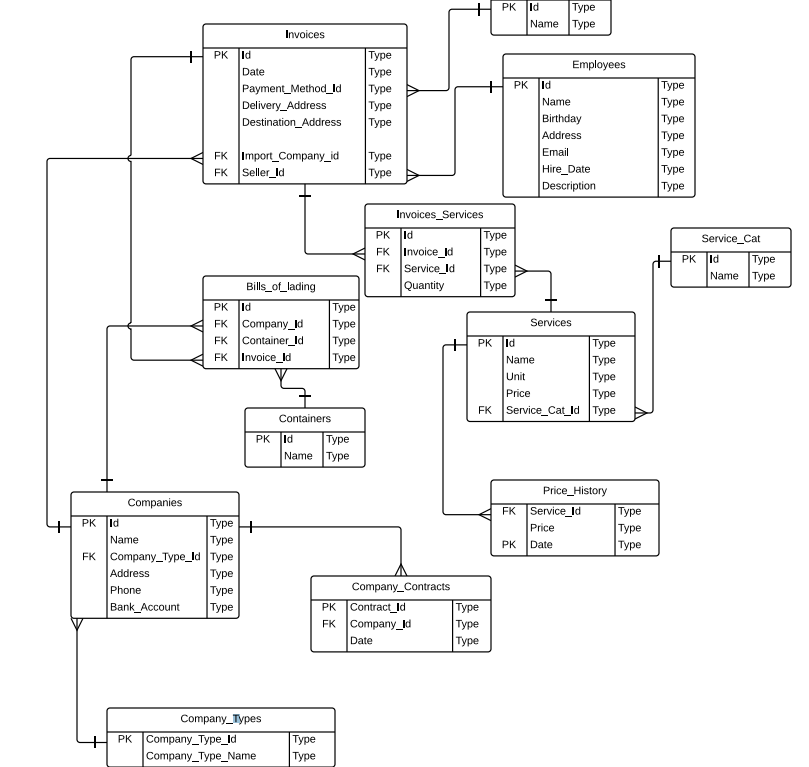
**MSSQL Assignment**

**THÔNG TIN SINH VIÊN**

|  |  |
| --- | --- |
| **Mã số sinh viên:** | GC01081 |
| **Họ và tên:** | Trần Ngọc Sơn |
| **Lớp:** | GC1006 |
| **Mã Assignment** | DBM\_Assignment01 |

**THIẾT KẾ CƠ SỞ DỮ LIỆU**

* Diagram



* Các bảng trong CSDL

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Companies | | | | |
| Têntrường | **Kiểudữliệu** | **Kíchthước** | **Ràngbuộc** | **Ghichú** |
| Id | Varchar | 5 | PRIMARI KEY |  |
| Name | Varchar | 30 | NOT NULL |  |
| Address | Varchar | 100 |  |  |
| Phone | Varchar | 20 |  |  |
| Bank\_Account | Varchar | 20 |  |  |
| Company\_Type | Varchar | 5 | FOREIGN KEY |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Company\_Types | | | | |
| Têntrường | **Kiểudữliệu** | **Kíchthước** | **Ràngbuộc** | **Ghichú** |
| Id | Varchar | 5 | PRIMARY KEY |  |
| Name | Varchar | 30 | NOT NULL |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Containers | | | | |
| Têntrường | **Kiểudữliệu** | **Kíchthước** | **Ràngbuộc** | **Ghichú** |
| Id | Varchar | 5 | PRIMARY KEY |  |
| Name | Varchar | 30 | NOT NULL |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Employees | | | | |
| Têntrường | **Kiểudữliệu** | **Kíchthước** | **Ràngbuộc** | **Ghichú** |
| Id | Varchar | 5 | PRIMARY KEY |  |
| Name | Varchar | 30 | NOT NULL |  |
| Birthday | Date |  |  |  |
| Address | Varchar | 100 |  |  |
| Email | Varchar | 100 |  |  |
| Hire\_Date | Date |  |  |  |
| Description | Varchar | 200 |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Services | | | | |
| Têntrường | **Kiểudữliệu** | **Kíchthước** | **Ràngbuộc** | **Ghichú** |
| Id | Varchar | 5 | PRIMARY KEY |  |
| Name | Varchar | 30 | NOT NULL |  |
| Unit | Varchar | 30 |  |  |
| Price | Money |  |  |  |
| Service\_Cat\_Id | Varchar | 5 | FOREIGN KEY |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Service\_Cat | | | | |
| Têntrường | **Kiểudữliệu** | **Kíchthước** | **Ràngbuộc** | **Ghichú** |
| Id | Varchar | 5 | PRIMARY KEY |  |
| Name | Varchar | 30 | NOT NULL |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Price\_History | | | | |
| Têntrường | **Kiểudữliệu** | **Kíchthước** | **Ràngbuộc** | **Ghichú** |
| Service\_Id | Varchar | 5 | FOREIGN KEY |  |
| Date | Date |  |  |  |
| Price | Money |  |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Payment\_Methods | | | | |
| Têntrường | **Kiểudữliệu** | **Kíchthước** | **Ràngbuộc** | **Ghichú** |
| Id | Varchar | 5 | PRIMARY KEY |  |
| Name | Varchar | 30 | NOT NULL |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Bill\_Of\_Lading | | | | |
| Têntrường | **Kiểudữliệu** | **Kíchthước** | **Ràngbuộc** | **Ghichú** |
| Id | Varchar | 5 | PRIMARY KEY |  |
| Company\_Id | Varchar | 5 | FOREIGN KEY |  |
| Container\_Id | Varchar | 5 | FOREIGN KEY |  |
| Invoice\_Id | Varchar | 5 | FOREIGN KEY |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Invoices | | | | |
| Têntrường | **Kiểudữliệu** | **Kíchthước** | **Ràngbuộc** | **Ghichú** |
| Id | Varchar | 5 | PRIMARY KEY |  |
| Date | Date |  |  |  |
| Payment\_Method\_Id | Varchar | 5 | FOREIGN KEY |  |
| Delivery\_Address | Varchar | 100 |  |  |
| Destination\_Address | Varchar | 100 |  |  |
| Import\_Company | Varchar | 5 | FOREIGN KEY |  |
| Seller\_Id | Varchar | 5 | FOREIGN KEY |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Invoices\_Services | | | | |
| Têntrường | **Kiểudữliệu** | **Kíchthước** | **Ràngbuộc** | **Ghichú** |
| Id | Varchar | 5 | PRIMARY KEY |  |
| Invoice\_Id | Varchar | 5 | FOREIGN KEY |  |
| Service\_Id | Varchar | 5 | FOREIGN KEY |  |
| Quantity | Int |  |  |  |

**CÁC CÂU LỆNH SQL**

* Tạo CSDL:

use master

go

IF EXISTS(SELECT\*FROM sys.databases WHERE name='Assignment')

DROP DATABASE Assignment

GO

CREATE DATABASE Assignment

GO

USE Assignment

GO

--Tạocácbảng:

CREATE TABLE Payment\_Methods

(

Id varchar(5)NOT NULL,

CONSTRAINT PK\_Payment\_Methods PRIMARY KEY(Id),

Name varchar(30)

)

GO

CREATE TABLE Employees

(

Id varchar(5)NOT NULL,

CONSTRAINT PK\_Employees PRIMARY KEY(Id),

Name varchar(30),

Birthday Date,

Address varchar(100),

Email varchar(100),

Hire\_Date Date,

[Description]varchar(200)

)

GO

CREATE TABLE Service\_Cat

(

Id varchar(5)NOT NULL,

CONSTRAINT PK\_Service\_Cat PRIMARY KEY(Id),

Name varchar(30)

)

GO

CREATE TABLE Services

(

Id varchar(5)NOT NULL,

CONSTRAINT PK\_Services PRIMARY KEY(Id),

Name varchar(30),

Unit varchar(30),

Price money,

Service\_Cat\_Id varchar(5),

CONSTRAINT FK\_Service\_Cat\_Services FOREIGN KEY(Service\_Cat\_Id)REFERENCES Service\_Cat(Id)

)

GO

CREATE TABLE Price\_History

(

Service\_Id varchar(5)NOT NULL,

CONSTRAINT FK\_Services\_Price\_History FOREIGN KEY(Service\_Id)REFERENCES Services(Id),

[Date]Date NOT NULL PRIMARY KEY,

Price money

)

GO

CREATE TABLE Company\_Types

(

Id varchar(5)PRIMARY KEY,

Name varchar(30)NOT NULL

)

GO

CREATE TABLE Companies

(

Id varchar(5)PRIMARY KEY,

Name varchar(30)NOT NULL,

Address varchar(100),

Phone varchar(20),

Bank\_Account varchar(20),

Company\_Type\_Id varchar(5)

CONSTRAINT FK\_Company\_Types\_Companies FOREIGN KEY(Company\_Type\_Id)REFERENCES Company\_Types(Id)

)

GO

CREATE TABLE Containers

(

Id varchar(5)PRIMARY KEY,

Name varchar(30)

)

GO

CREATE TABLE Invoices

(

Id varchar(5)PRIMARY KEY,

[Date]Date,

Payment\_Method\_Id varchar(5),

CONSTRAINT FK\_Payment\_Methods\_Invoices FOREIGN KEY(Payment\_Method\_Id) REFERENCES Payment\_Methods(Id),

Delivery\_Address varchar(100),

Destination\_Address varchar(100),

Import\_Company\_Id varchar(5),

CONSTRAINT FK\_Import\_Company\_Invoices FOREIGN KEY(Import\_Company\_Id)REFERENCES Companies(Id),

Seller\_Id varchar(5),

CONSTRAINT FK\_Employees\_Invoices FOREIGN KEY(Seller\_Id)REFERENCES Employees(Id)

)

GO

CREATE TABLE Bills\_Of\_Lading

(

Id varchar(5)PRIMARY KEY,

Company\_Id varchar(5),

CONSTRAINT FK\_Companies\_BOL FOREIGN KEY(Company\_Id)REFERENCES Companies(Id),

Container\_Id varchar(5),

CONSTRAINT FK\_Containers\_BOL FOREIGN KEY(Container\_Id)REFERENCES Containers(Id),

Invoice\_Id varchar(5),

CONSTRAINT FK\_Invoices\_BOL FOREIGN KEY(Invoice\_Id)REFERENCES Invoices(Id)

)

GO

CREATE TABLE Invoices\_Services

(

Id varchar(5)PRIMARY KEY,

Invoice\_Id varchar(5),

CONSTRAINT FK\_Invoices\_Invoice\_Services FOREIGN KEY(Invoice\_Id)REFERENCES Invoices(Id),

Service\_Id varchar(5),

CONSTRAINT FK\_Services\_Invoice\_Services FOREIGN KEY(Service\_Id)REFERENCES Services(Id),

Quantity int

)

GO

--Thêmcácràngbuộc:

ALTER TABLE Companies

ADD CONSTRAINT Chk\_Company\_Phone CHECK (Phone LIKE'[0-9][0-9][0-9][0-9].[0-9][0-9][0-9][0-9][0-9][0-9][0-9]'OR PHONE LIKE'[0-9][0-9][0-9][0-9].[0-9][0-9][0-9][0-9][0-9][0-9]')

GO

-- Email

ALTER TABLE Employees

ADD CONSTRAINT Chk\_Employee\_Email CHECK (Email LIKE '%@%')

GO

-- Price > 0

ALTER TABLE Services

ADD CONSTRAINT Chk\_Service\_Price\_Greater\_Than\_0 CHECK (Price > 0)

GO

-- Quantity > 0

ALTER TABLE Invoices\_Services

ADD CONSTRAINT Chk\_Invoice\_Service\_Quantity\_Greater\_Than\_0 CHECK (Quantity > 0)

GO

--Tạo INDEX

CREATE INDEX IX\_Service\_Name ON Services(Name)

GO

CREATE INDEX IX\_Companies ON Companies(Name)

GO