

SQL SERVER

10-1

Bài giải bài tập ôn tập 01

Tạo Databae QuanLySinhVien với các nội dung

```
--MaSV:
--Tên SV:
--IF EXISTS ( SELECT  name
--              FROM    sys.databases
--              WHERE    name = 'QuanLySinhVien')
--      BEGIN
--          DROP DATABASE QuanLyThuVien;
--      END;
--GO
--Tạo database quản lý sinh viên
--CREATE DATABASE QuanLySinhVien;
GO
USE QuanLySinhVien;
GO
--Drop các khóa ngoại
IF EXISTS ( SELECT  *
            FROM    INFORMATION_SCHEMA.CONSTRAINT_TABLE_USAGE
            WHERE    CONSTRAINT_NAME = 'fk_DiemThi_MonHoc'
            AND CONSTRAINT_SCHEMA = 'dbo' )
    BEGIN
        ALTER TABLE dbo.DiemThi
        DROP CONSTRAINT    fk_DiemThi_MonHoc;
    END;
GO
IF EXISTS ( SELECT  *
            FROM    INFORMATION_SCHEMA.CONSTRAINT_TABLE_USAGE
            WHERE    CONSTRAINT_NAME = 'fk_DiemThi_sinhvien'
            AND CONSTRAINT_SCHEMA = 'dbo' )
    BEGIN
        ALTER TABLE dbo.DiemThi
        DROP CONSTRAINT    fk_DiemThi_sinhvien;
    END;
--Câu 1:
IF EXISTS ( SELECT  *
            FROM    INFORMATION_SCHEMA.TABLES
            WHERE    TABLE_NAME = 'SinhVien'
            AND TABLE_SCHEMA = 'dbo' )
    BEGIN
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        DROP TABLE SinhVien;
    END;
GO
CREATE TABLE SinhVien
(
    MSSV CHAR(9) NOT NULL
        PRIMARY KEY ,
    Lop CHAR(7) NULL ,
    Ho NVARCHAR(30) NOT NULL ,
    Ten NVARCHAR(10) NOT NULL ,
    Ngaysinh DATE NULL ,
    Nu BIT NOT NULL, --1 là nữ - 0 là Nam
);
IF EXISTS ( SELECT *
            FROM INFORMATION_SCHEMA.TABLES
            WHERE TABLE_NAME = 'MonHoc'
              AND TABLE_SCHEMA = 'dbo' )
    BEGIN
        DROP TABLE MonHoc;
    END;
GO
CREATE TABLE MonHoc
(
    MSMon INT IDENTITY(1, 1)
        NOT NULL
        PRIMARY KEY ,
    TenMon NVARCHAR(50)
);
GO
IF EXISTS ( SELECT *
            FROM INFORMATION_SCHEMA.TABLES
            WHERE TABLE_NAME = 'DiemThi'
              AND TABLE_SCHEMA = 'dbo' )
    BEGIN
        DROP TABLE DiemThi;
    END;
GO
CREATE TABLE DiemThi
(
    MSSV CHAR(9) ,
    MSMon INT ,
    LanThi INT ,
    Diem FLOAT ,
    CONSTRAINT fk_DiemThi_MonHoc FOREIGN KEY ( MSMon ) REFERENCES
dbo.MonHoc ( MSMon ) ,
    CONSTRAINT fk_DiemThi_SinhVien FOREIGN KEY ( MSSV ) REFERENCES
dbo.SinhVien ( MSSV ) ,
    CONSTRAINT pk_DiemThi PRIMARY KEY ( MSSV, MSMon, LanThi )
);
-----Câu 2-----
--Thêm ràng buộc cho database QuanLySinhVien
--a: Cột LanThi có giá trị mặc định là 1

ALTER TABLE dbo.DiemThi

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ADD CONSTRAINT df_diemThi DEFAULT 1 FOR LanThi;
GO
--b: Điểm thi nằm trong khoảng 1-10
IF EXISTS ( SELECT *
            FROM INFORMATION_SCHEMA.CHECK_CONSTRAINTS
            WHERE CONSTRAINT_NAME = 'ck_diemthi' )
    BEGIN
        ALTER TABLE dbo.DiemThi
        DROP CONSTRAINT ck_diemthi;
    END;
GO
ALTER TABLE dbo.DiemThi
ADD CONSTRAINT ck_diemthi CHECK (Diem BETWEEN 1 AND 10);
GO
--Thêm Dữ liệu để test
INSERT INTO dbo.MonHoc
    ( TenMon )
VALUES ( N'Toan' -- TenMon - nvarchar(50)
        );
GO
INSERT INTO dbo.MonHoc
    ( TenMon )
VALUES ( N'Hoa' -- TenMon - nvarchar(50)
        );
GO
INSERT INTO dbo.MonHoc
    ( TenMon )
VALUES ( N'Sinh' -- TenMon - nvarchar(50)
        );
GO
--thêm dữ liệu vào sinh viên
INSERT INTO dbo.SinhVien
    ( MSSV ,
      Lop ,
      Ho ,
      Ten ,
      Ngaysinh ,
      Nu
    )
VALUES ( '116000111' , -- MSSV - char(9)
        '16se111' , -- Lop - char(7)
        N'Nguyễn Minh' , -- Ho - nvarchar(30)
        N'Phúc' , -- Ten - nvarchar(10)
        GETDATE() , -- Ngaysinh - date
        0 -- Nu - bit
    );
INSERT INTO dbo.SinhVien
    ( MSSV ,
      Lop ,
      Ho ,
      Ten ,
      Ngaysinh ,
      Nu
    )

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VALUES ( '116000112' , -- MSSV - char(9)
         '16se111' , -- Lop - char(7)
         N'Nguyễn Minh' , -- Ho - nvarchar(30)
         N'Hoàng' , -- Ten - nvarchar(10)
         GETDATE() , -- Ngaysinh - date
         0 -- Nu - bit
       );

INSERT INTO dbo.SinhVien
( MSSV ,
  Lop ,
  Ho ,
  Ten ,
  Ngaysinh ,
  Nu
)
VALUES ( '116000113' , -- MSSV - char(9)
        '16se111' , -- Lop - char(7)
        N'Nguyễn Thị' , -- Ho - nvarchar(30)
        N'Hồng' , -- Ten - nvarchar(10)
        GETDATE() , -- Ngaysinh - date
        1 -- Nu - bit
      );

INSERT INTO dbo.SinhVien
( MSSV ,
  Lop ,
  Ho ,
  Ten ,
  Ngaysinh ,
  Nu
)
VALUES ( '116000114' , -- MSSV - char(9)
        '16se111' , -- Lop - char(7)
        N'Nguyễn Minh' , -- Ho - nvarchar(30)
        N'Khánh' , -- Ten - nvarchar(10)
        GETDATE() , -- Ngaysinh - date
        0 -- Nu - bit
      );

GO
-- them du lieu bang diem
INSERT INTO dbo.DiemThi
( MSSV, MSMon, LanThi, Diem )
VALUES ( '116000111', -- MSSV - char(9)
        1, -- MSMon - int
        1, -- LanThi - int
        3 -- Diem - float
      );

INSERT INTO dbo.DiemThi
( MSSV, MSMon, LanThi, Diem )
VALUES ( '116000111', -- MSSV - char(9)
        1, -- MSMon - int
        2, -- LanThi - int
        8 -- Diem - float
      );

```

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INSERT INTO dbo.DiemThi
( MSSV, MSMon, LanThi, Diem )
VALUES ( '116000112', -- MSSV - char(9)
        1, -- MSMon - int
        1, -- LanThi - int
        5 -- Diem - float
        );

INSERT INTO dbo.DiemThi
( MSSV, MSMon, LanThi, Diem )
VALUES ( '116000113', -- MSSV - char(9)
        1, -- MSMon - int
        1, -- LanThi - int
        6 -- Diem - float
        );

INSERT INTO dbo.DiemThi
( MSSV, MSMon, LanThi, Diem )
VALUES ( '116000111', -- MSSV - char(9)
        2, -- MSMon - int
        1, -- LanThi - int
        7 -- Diem - float
        );
GO

```

=====câu 03 Tạo view=====

--a. vw_lanthicuoi

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IF EXISTS ( SELECT *
            FROM INFORMATION_SCHEMA.VIEWS
            WHERE TABLE_NAME = 'vw_LanThiCuoi' )
BEGIN
    DROP VIEW vw_LanThiCuoi;
END;

GO
CREATE VIEW vw_LanThiCuoi
AS
    SELECT MSSV ,
           MSMon ,
           MAX(LanThi) AS MaxLanThi
    FROM   dbo.DiemThi
    GROUP BY MSSV ,
           MSMon;

```

```

GO
SELECT *
FROM   dbo.vw_LanThiCuoi;

```

--b Tạo View lấy thông tin điểm thi cuối cùng

```

GO
IF EXISTS ( SELECT *
            FROM INFORMATION_SCHEMA.VIEWS
            WHERE TABLE_NAME = 'vw_DiemThiCuoi' )
BEGIN
    DROP VIEW vw_DiemThiCuoi;
END;

GO
CREATE VIEW vw_DiemThiCuoi

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```

AS
    SELECT    DT.MSSV ,
              DT.MSMon ,
              DT.Diem ,
              MaxLanThi
    FROM      dbo.DiemThi DT
              JOIN vw_LanThiCuoi vwLTC ON vwLTC.MSMon = DT.MSMon
                                              AND vwLTC.MSSV = DT.MSSV

    WHERE     DT.LanThi = vwLTC.MaxLanThi;
GO
SELECT *
FROM      dbo.vw_DiemThiCuoi;

--cách 2
GO
IF EXISTS ( SELECT *
            FROM    INFORMATION_SCHEMA.VIEWS
            WHERE    TABLE_NAME = 'vw_DiemThiCuoiNew' )
    BEGIN
        DROP VIEW vw_DiemThiCuoiNew;
    END;
GO

CREATE VIEW vw_DiemThiCuoiNew
AS
    WITH      CTEs_Lanthicuai
              AS ( SELECT    MSSV ,
                          MSMon ,
                          MAX(LanThi) AS MaxLanThi
                    FROM      dbo.DiemThi
                    GROUP BY  MSSV ,
                          MSMon
              )

    SELECT    DT.MSSV ,
              DT.MSMon ,
              DT.Diem ,
              MaxLanThi
    FROM      dbo.DiemThi DT
              JOIN CTEs_Lanthicuai CTEs ON CTEs.MSMon = DT.MSMon
                                              AND CTEs.MSSV = DT.MSSV

    WHERE     DT.LanThi = CTEs.MaxLanThi;

GO
SELECT *
FROM      dbo.vw_DiemThiCuoiNew;
GO

--câu 4–Viết trigger để tự động điền dữ liệu cho cột lần thi.
CREATE TRIGGER tg_AutoLanThi ON DiemThi
    FOR INSERT
AS
    DECLARE @MSSV CHAR(9);
    DECLARE @MSMon INT;
    SELECT    @MSSV = MSSV ,
              @MSMon = MSMon

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FROM    inserted;
IF NOT EXISTS ( SELECT *
                FROM    DiemThi
                WHERE    MSSV = @MSSV
                        AND MSMon = @MSMon )
    BEGIN
        PRINT 'MSSV Thêm vào không tồn tại';
        ROLLBACK TRAN;
        RETURN;
    END;
UPDATE  DiemThi
SET      DiemThi.LanThi = DiemThi.LanThi + 1
FROM    INSERTED I
WHERE    I.MSSV = @MSSV
        AND I.MSMon = @MSMon;
GO

INSERT INTO dbo.DiemThi
( MSSV, MSMon, LanThi, Diem )
VALUES ( '116000114', -- MSSV - char(9)
        1, -- MSMon - int
        0, -- LanThi - int
        5  -- Diem - float
        );
GO
--Câu 5: Tạo thủ tục lấy danh sách sinh viên cùng điểm thi cuối cùng
CREATE PROC SP_LietKetDiem @MSSV CHAR(9)
AS
    SELECT  dt.MSSV ,
            sv.Ten ,
            dt.MSMon ,
            mh.TenMon ,
            LanThi ,
            Diem
    FROM    dbo.DiemThi dt
            JOIN dbo.MonHoc mh ON mh.MSMon = dt.MSMon
            JOIN dbo.SinhVien sv ON sv.MSSV = dt.MSSV
    WHERE    dt.MSSV = @MSSV
GO

EXEC  dbo.SP_LietKetDiem @MSSV = '116000111' -- char(9)

```