USE MASTER

GO

IF EXISTS (SELECT \* FROM SYSDATABASES WHERE NAME = 'QLSV\_N06')

DROP DATABASE QLSV\_N06

GO

SET DATEFORMAT DMY

CREATE DATABASE QLSV\_N06

GO

USE QLSV\_N06

GO

CREATE TABLE DMKHOA

(

MAKHOA VARCHAR(2) NOT NULL,

TENKHOA NVARCHAR(20) NOT NULL,

CONSTRAINT PK\_DMKHOA PRIMARY KEY(MAKHOA)

)

GO

CREATE TABLE DMMH

(

MAMH VARCHAR(2) NOT NULL,

TENMH NVARCHAR(30) NOT NULL,

SOTIET TINYINT,

CONSTRAINT PK\_DMMH PRIMARY KEY(MAMH)

)

GO

CREATE TABLE DMSV

(

MASV VARCHAR(3) NOT NULL,

HOSV NVARCHAR(30) NOT NULL,

TENSV NVARCHAR(10) NOT NULL,

PHAI BIT,

NGAYSINH DATE,

NOISINH NVARCHAR(25) NOT NULL,

MAKHOA VARCHAR(2) NOT NULL,

HOCBONG FLOAT,

CONSTRAINT PK\_DMSV PRIMARY KEY(MASV),

CONSTRAINT FK\_DMSV\_DMKHOA FOREIGN KEY(MAKHOA) REFERENCES DMKHOA(MAKHOA)

)

GO

CREATE TABLE KETQUA

(

MASV VARCHAR(3) NOT NULL,

MAMH VARCHAR(2) NOT NULL,

LANTHI TINYINT,

DIEM DECIMAL(3, 2),

CONSTRAINT PK\_KETQUA PRIMARY KEY(MASV, MAMH, LANTHI),

CONSTRAINT FK\_KETQUA\_DMMH FOREIGN KEY(MAMH) REFERENCES DMMH(MAMH),

CONSTRAINT FK\_KETQUA\_DMSV FOREIGN KEY(MASV) REFERENCES DMSV(MASV)

)

GO

-- Insert data into DMKHOA

INSERT INTO DMKHOA(MAKHOA, TENKHOA) VALUES

('AV', N'Anh Văn'),

('TH', N'Tin Học'),

('TR', N'Triết'),

('VL', N'Vật Lý');

GO

-- Insert data into DMMH

INSERT INTO DMMH(MAMH, TENMH, SOTIET) VALUES

('01', N'Cơ sở dữ liệu', 45),

('02', N'Trí tuệ nhân tạo', 45),

('03', N'Truyền tin', 45),

('04', N'Đồ hoạ', 60),

('05', N'Văn phạm', 60),

('06', N'Kỹ thuật lập trình', 45);

GO

-- Insert data into DMSV

INSERT INTO DMSV(MASV, HOSV, TENSV, PHAI, NGAYSINH, NOISINH, MAKHOA, HOCBONG) VALUES

('A01', N'Nguyễn thị', N'Hải', 1, '20230223', N'Hà Nội', 'TH', 130000),

('A02', N'Trần văn', N'Chính', 0, '20221224', N'Bình Định', 'VL', 150000),

('A03', N'Lê thu bạch', N'Yến', 1, '20230221', N'Tp HCM', 'TH', 170000),

('A04', N'Trần anh', N'Tuấn', 0, '20241220', N'Hà Nội', 'AV', 80000),

('B01', N'Trần thanh', N'Mai', 1, '20230812', N'Hài Phòng', 'TR', 0),

('B02', N'Trần thị thu', N'Thuỷ', 1, '20240102', N'Tp HCM', 'AV', 0);

GO

-- Insert data into KETQUA

INSERT INTO KETQUA(MASV, MAMH, LANTHI, DIEM) VALUES

('A01', '01', 1, 3),

('A01', '01', 2, 6);

GO

SELECT \* FROM KETQUA

SELECT \* FROM DMSV

SELECT \* FROM DMMH

SELECT \* FROM DMKHOA

--2.2...................................

SP\_TABLES

GO

SP\_COLUMNS KETQUA

GO

SP\_COLUMNS DMSV

GO

SP\_COLUMNS DMMH

GO

SP\_COLUMNS DMKHOA

GO

SP\_PKEYS KETQUA

GO

SP\_PKEYS DMSV

GO

SP\_PKEYS DMMH

GO

SP\_PKEYS DMKHOA

GO

SP\_HELPCONSTRAINT KETQUA

GO

SP\_HELPCONSTRAINT DMSV

GO

SP\_HELPCONSTRAINT DMMH

GO

SP\_HELPCONSTRAINT DMKHOA

GO

--2.3...................................

ALTER TABLE DMKHOA ADD NamTL int

GO

ALTER TABLE DMKHOA

ALTER COLUMN NamTL smallint

GO

EXEC SP\_RENAME 'DMKHOA.NamTL', 'NamThanhLap'

GO

ALTER TABLE DMKHOA DROP COLUMN NamThanhLap

GO

ALTER TABLE DMSV DROP FK\_DMSV\_DMKHOA

GO

ALTER TABLE DMSV ADD CONSTRAINT FK\_DMSV\_DMKHOA FOREIGN KEY(MaKH)

REFERENCES DMKHOA (MaKH)

GO

--2.4...................................

UPDATE DMMH

SET SoTiet = 45

WHERE TenMH = N'Văn phạm'

GO

UPDATE DMSV

SET TENSV = N'Kỳ'

WHERE HOSV = N'Trần thanh' AND TENSV = N'Mai';

GO

UPDATE DMSV

SET PHAI = 0

WHERE HOSV = N'Trần thanh' AND TENSV = N'Kỳ';

GO

UPDATE DMSV

SET NGAYSINH = '1990/07/05'

WHERE HOSV = N'Trần thị thu' AND TENSV = N'Thuỷ';

GO

UPDATE DMSV

SET HocBong = HocBong + 100000

WHERE MAKHOA = 'AV'

GO

DELETE FROM KETQUA

WHERE LANTHI = 2 AND DIEM < 5

GO

-- C: TRUY VAN SQL

--------------------------------------------------------

-- 1. TRUY VAN DON GIAN

-- 1.1:

SELECT MaMH, TenMH, SoTiet

FROM DMMH

WHERE TenMH like N'T%'

GO

-- 1.2:

SELECT HOSV, TENSV, NGAYSINH, PHAI

FROM DMSV

WHERE TENSV like N'%I'

GO

-- 1.3:

SELECT MAKHOA, TENKHOA

FROM DMKHOA

WHERE SUBSTRING(TENKHOA, 2, 1) = 'N';

GO

-- 1.4:

SELECT HOSV, TENSV, NGAYSINH, PHAI

FROM DMSV

WHERE HOSV like N'%thị%'

GO

-- 1.5:

SELECT MASV, HOSV, PHAI, HOCBONG

FROM DMSV

WHERE UNICODE(LEFT(TENSV, 1)) BETWEEN UNICODE('a') AND UNICODE('m');

GO

-- 1.6

SELECT HOSV, TENSV, MAKHOA, NOISINH, HOCBONG

FROM DMSV

WHERE HOCBONG >= 150000

GO

-- 1.7:

SELECT MASV, MAKHOA, PHAI

FROM DMSV

WHERE MAKHOA IN ('AV', 'VL')

GO

-- 1.8:

SELECT MASV, NGAYSINH, NOISINH, HOCBONG

FROM DMSV

WHERE NGAYSINH BETWEEN '1992-01-01' AND '1993-06-05';

GO

-- 1.9:

SELECT MASV, NGAYSINH, PHAI, MAKHOA

FROM DMSV

WHERE HOCBONG BETWEEN 80000 AND 150000;

GO

-- 1.10:

SELECT MAMH, TENMH, SOTIET

FROM DMMH

WHERE SOTIET > 30 AND SOTIET < 45;

GO

-- 1.11:

SELECT MASV+' '+HOSV, TENSV, TENKHOA, PHAI

FROM DMSV, DMKHOA

WHERE DMKHOA.MAKHOA = DMSV.MAKHOA AND DMKHOA.TENKHOA IN (N'Anh Văn', N'Tin Học')

AND PHAI = 0;

GO

-- 1.12:

SELECT DMSV.MASV+' '+HOSV, TENSV, PHAI, DIEM

FROM DMSV, KETQUA, DMMH

WHERE DMSV.MASV = KETQUA.MASV

AND KETQUA.DIEM > 5

AND KETQUA.MAMH = DMMH.MAMH AND DMMH.TENMH IN ('Cơ sở dữ liệu');

GO

-- 1.13:

SELECT MASV, HOSV+' '+TENSV, TENKHOA, NOISINH, HOCBONG

FROM DMSV, DMKHOA

WHERE DMKHOA.MAKHOA = DMSV.MAKHOA AND DMKHOA.TENKHOA IN (N'Anh Văn')

AND HOCBONG = 0;

GO

-- C: TRUY VAN SQL

--------------------------------------------------------

-- 2. SAP XEP ORDERBY

-- 2.1

SELECT HoSV+' '+TenSV as HoTenSV, NgaySinh, NoiSinh, HocBong

FROM DMSV

WHERE TenSV like '%[a-m]%'

ORDER BY TenSV ASC

GO

-- 2.2

SELECT MASV, HoSV+' '+TenSV as HoTenSV, HocBong

FROM DMSV

ORDER BY MASV ASC

GO

-- 2.3

SELECT MASV, HoSV+' '+TenSV as HoTenSV, PHAI, NGAYSINH

FROM DMSV

ORDER BY PHAI ASC

GO

-- 3. TRUY VAN HAM

-- 3.1

SELECT HOSV, TENSV, NOISINH, NGAYSINH

FROM DMSV

WHERE NOISINH like N'Hà Nội' AND MONTH(NGAYSINH) = 2

GO

-- 3.2

SELECT HOSV, TENSV, YEAR(GETDATE()) - YEAR(NGAYSINH) AS TUOI, HOCBONG

FROM DMSV

WHERE YEAR(GETDATE()) - YEAR(NGAYSINH) >= 20;

GO

-- 3.3

SELECT HOSV, TENSV, YEAR(GETDATE()) - YEAR(NGAYSINH) AS TUOI, HOCBONG

FROM DMSV

WHERE YEAR(GETDATE()) - YEAR(NGAYSINH) >= 20 AND YEAR(GETDATE()) - YEAR(NGAYSINH) <= 25;

GO

-- 3.5

SELECT MASV, PHAI, MAKHOA,

MucHocBong =

CASE

WHEN HocBong > 100000 THEN 'Hoc bong cao'

ELSE 'Muc trung binh'

END

FROM DMSV

GO

-- 4. Truy vấn sử dụng hàm kết hợp: max, min, count, sum, avg và gom nhóm

-- 4.1

SELECT Count(\*) AS SLSV

FROM DMSV

GO

-- 4.2

SELECT Count(\*) AS SLSV

FROM DMSV

WHERE PHAI = 1;

GO

-- 4.3

SELECT s.MAKHOA, TENKHOA, COUNT(MaSV) As SoSV

FROM DMSV s, DMKHOA k

WHERE s.MAKHOA = k.MAKHOA

GROUP BY s.MAKHOA, TENKHOA

GO

-- 4.4

SELECT M.MAMH, TENMH, COUNT(Distinct MASV) As SoMH

FROM DMMH M, KETQUA K

WHERE M.MAMH = K.MAMH

GROUP BY M.MAMH, TENMH

GO

-- 4.5

SELECT KETQUA.MASV, COUNT(DMMH.MAMH) AS SO\_MON\_HOC

FROM DMSV, DMMH, KETQUA

WHERE DMSV.MASV = KETQUA.MASV AND KETQUA.MAMH = DMMH.MAMH

GROUP BY KETQUA.MASV;

GO

-- 4.7

SELECT K.MAKHOA,TENKHOA,

SUM(CASE WHEN PHAI=0 THEN 1 ELSE 0 END ) AS TNAM,

SUM(CASE WHEN PHAI =1 THEN 1 ELSE 0 END ) AS TNU

FROM DMKHOA K,DMSV SV

WHERE K.MAKHOA=SV.MAKHOA

GROUP BY K.MAKHOA,TENKHOA

GO