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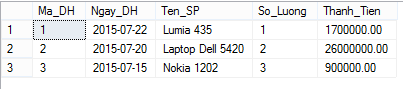
# Question 1

1. Create the tables (with the most appropriate field/column constraints & types) and add at least 3 records into each created table.

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| CREATE TABLE Khach\_Hang  (  Ma\_KH int Identity(1,1) NOT NULL PRIMARY KEY,  Ten\_KH nvarchar(50) NOT NULL,  Phone\_No varchar(15) NOT NULL CHECK(Phone\_No NOT LIKE '%[^0-9]%'),  Ghi\_Chu nvarchar(100)  )  CREATE TABLE San\_Pham  (  Ma\_SP int Identity(1,1) NOT NULL PRIMARY KEY,  Ten\_SP nvarchar(50) NOT NULL,  Don\_Gia money NOT NULL,  Ma\_KH int NOT NULL REFERENCES Khach\_Hang(Ma\_KH)  )  CREATE TABLE Don\_Hang  (  Ma\_DH int Identity(1,1) NOT NULL PRIMARY KEY,  Ngay\_DH date NOT NULL,  Ma\_SP int NOT NULL REFERENCES San\_Pham(Ma\_SP),  So\_Luong int NOT NULL  )  GO  INSERT INTO Khach\_Hang(Ten\_KH, Phone\_No, Ghi\_Chu) VALUES(N'Nguyễn Hải Đăng', '01627927829', N'Vip')  INSERT INTO Khach\_Hang(Ten\_KH, Phone\_No, Ghi\_Chu) VALUES(N'Phạm Thanh Hiền', '0123456789', N'Normal')  INSERT INTO Khach\_Hang(Ten\_KH, Phone\_No, Ghi\_Chu) VALUES(N'Lê Quang Vinh', '01655450125', N'Normal')  INSERT INTO San\_Pham(Ten\_SP, Don\_Gia, Ma\_KH) VALUES(N'Lumia 435', 1700000, 2)  INSERT INTO San\_Pham(Ten\_SP, Don\_Gia, Ma\_KH) VALUES(N'Laptop Dell 5420', 13000000, 1)  INSERT INTO San\_Pham(Ten\_SP, Don\_Gia, Ma\_KH) VALUES(N'Nokia 1202', 300000, 3)  SET DATEFORMAT DMY;  INSERT INTO Don\_Hang(Ngay\_DH, Ma\_SP, So\_Luong) VALUES('22/07/2015', 1, 1)  INSERT INTO Don\_Hang(Ngay\_DH, Ma\_SP, So\_Luong) VALUES('20/07/2015', 2, 2)  INSERT INTO Don\_Hang(Ngay\_DH, Ma\_SP, So\_Luong) VALUES('15/07/2015', 3, 3) |

1. Create an order slip VIEW which has the same number of lines as the Don\_Hang, with the following information: Ten\_KH, Ngay\_DH, Ten\_SP, So\_Luong, Thanh\_Tien

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| CREATE VIEW dbo.view\_Don\_Hang  AS  SELECT Don\_Hang.Ma\_DH  , Don\_Hang.Ngay\_DH  , San\_Pham.Ten\_SP  , Don\_Hang.So\_Luong  , (San\_Pham.Don\_Gia \* Don\_Hang.So\_Luong) AS Thanh\_Tien  FROM Don\_Hang, Khach\_Hang, San\_Pham  WHERE Don\_Hang.Ma\_SP = San\_Pham.Ma\_SP  AND San\_Pham.Ma\_KH = Khach\_Hang.Ma\_KH |



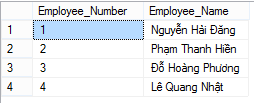
# Question 2

1. Create the tables (with the most appropriate field/column constraints & types) and add at least 3 records into each created table.

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| CREATE TABLE Department  (  Department\_Number tinyint Identity(1,1) NOT NULL PRIMARY KEY,  Department\_Name nvarchar(50) NOT NULL  )  CREATE TABLE Employee\_Table  (  Employee\_Number int Identity(1,1) NOT NULL PRIMARY KEY,  Employee\_Name nvarchar(50) NOT NULL,  Department\_Number tinyint NOT NULL FOREIGN KEY REFERENCES Department(Department\_Number)  )  CREATE TABLE Employee\_Skill\_Table  (  Employee\_Number int NOT NULL FOREIGN KEY REFERENCES Employee\_Table(Employee\_Number),  Skill\_Code varchar(10) NOT NULL,  Date\_Registered date NOT NULL  CONSTRAINT PK\_Employee\_Skill\_Table PRIMARY KEY(Employee\_Number, Skill\_Code)  )  GO  INSERT INTO Department(Department\_Name) VALUES(N'Software Engineering')  INSERT INTO Department(Department\_Name) VALUES(N'Network and Telecommunication')  INSERT INTO Department(Department\_Name) VALUES(N'Information System')  INSERT INTO Department(Department\_Name) VALUES(N'Computer Engineering')  INSERT INTO Department(Department\_Name) VALUES(N'Computer Science')  INSERT INTO Employee\_Table(Employee\_Name, Department\_Number) VALUES(N'Nguyễn Hải Đăng', 1)  INSERT INTO Employee\_Table(Employee\_Name, Department\_Number) VALUES(N'Phạm Thanh Hiền', 4)  INSERT INTO Employee\_Table(Employee\_Name, Department\_Number) VALUES(N'Đỗ Hoàng Phương', 1)  INSERT INTO Employee\_Table(Employee\_Name, Department\_Number) VALUES(N'Lê Quang Nhật', 1)  SET DATEFORMAT DMY;  INSERT INTO Employee\_Skill\_Table(Employee\_Number, Skill\_Code, Date\_Registered) VALUES(1, '.NET', '06/07/2015')  INSERT INTO Employee\_Skill\_Table(Employee\_Number, Skill\_Code, Date\_Registered) VALUES(1, 'JAVA', '13/07/2015')  INSERT INTO Employee\_Skill\_Table(Employee\_Number, Skill\_Code, Date\_Registered) VALUES(3, '.NET', '06/07/2015')  INSERT INTO Employee\_Skill\_Table(Employee\_Number, Skill\_Code, Date\_Registered) VALUES(3, 'JAVA', '13/07/2015')  INSERT INTO Employee\_Skill\_Table(Employee\_Number, Skill\_Code, Date\_Registered) VALUES(2, 'JAVA', '13/07/2015')  INSERT INTO Employee\_Skill\_Table(Employee\_Number, Skill\_Code, Date\_Registered) VALUES(4, '.NET', '06/07/2015')  INSERT INTO Employee\_Skill\_Table(Employee\_Number, Skill\_Code, Date\_Registered) VALUES(4, 'JAVA', '13/07/2015') |

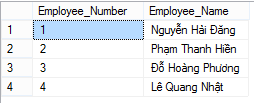
1. Specify the names of the employees whore have skill of ‘Java’ – give >=2 solutions:
   1. Use JOIN selection

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| SELECT Employee\_Table.Employee\_Number, Employee\_Table.Employee\_Name  FROM Employee\_Table  INNER JOIN Employee\_Skill\_Table  ON (Employee\_Table.Employee\_Number = Employee\_Skill\_Table.Employee\_Number)  WHERE Employee\_Skill\_Table.Skill\_Code = 'JAVA' |



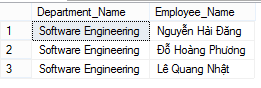
* 1. Use sub query.

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| SELECT Employee\_Table.Employee\_Number, Employee\_Table.Employee\_Name  FROM Employee\_Table  WHERE Employee\_Table.Employee\_Number  IN  (  SELECT Employee\_Skill\_Table.Employee\_Number  FROM Employee\_Skill\_Table  WHERE Employee\_Skill\_Table.Skill\_Code = 'JAVA'  ) |



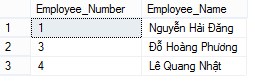
1. Specify the departments which have >=3 employees, print out the list of departments’ employees right after each department.

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| SELECT dpm1.Department\_Name, emp1.Employee\_Name  FROM Department dpm1  INNER JOIN Employee\_Table emp1  ON (emp1.Department\_Number = dpm1.Department\_Number)  WHERE dpm1.Department\_Number  IN  (  SELECT dpm2.Department\_Number  FROM Department dpm2  INNER JOIN Employee\_Table emp2  ON (emp2.Department\_Number = dpm2.Department\_Number)  GROUP BY dpm2.Department\_Number  HAVING (COUNT(emp2.Employee\_Number) >= 3)  ) |



1. Use SUB-QUERY technique to list out the different employees (include employee number and employee names) who have multiple skills.

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| SELECT emp1.Employee\_Number, emp1.Employee\_Name  FROM Employee\_Table emp1  WHERE emp1.Employee\_Number IN  (  SELECT emp2.Employee\_Number  FROM Employee\_Table emp2, Employee\_Skill\_Table emp\_skill  WHERE emp\_skill.Employee\_Number = emp2.Employee\_Number  GROUP BY (emp2.Employee\_Number)  HAVING COUNT(emp\_skill.Skill\_Code) > 1  ) |



1. Create a view to show different employees (with following information: employee number and employee name, department name) who have multiple skills.

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| CREATE VIEW dbo.\_view\_MULTISKILLS\_EMPLOYEE  AS  SELECT emp1.Employee\_Number, emp1.Employee\_Name, dpm.Department\_Name  FROM Employee\_Table emp1  INNER JOIN Department dpm  ON (emp1.Department\_Number = dpm.Department\_Number)  WHERE emp1.Employee\_Number IN  (  SELECT emp2.Employee\_Number  FROM Employee\_Table emp2  INNER JOIN Employee\_Skill\_Table emp\_skill  ON (emp\_skill.Employee\_Number = emp2.Employee\_Number)  GROUP BY (emp2.Employee\_Number)  HAVING COUNT(emp\_skill.Skill\_Code) > 1  ) |

