Evidence 6

Chapter 6 (SubQuery)

1. Create a StudentResult Relational Database in 3rd Normalization Form which will have following Data: (15)

Sid	SName	Phone	Course-id	Course-Desctiption	Credit-hours	Grade
101	Taseef Hasan	487 2454	IS380	Database	3	A
101	Taseef Hasan	487 2454	IS416	C#	3	B
201	Samin Jannat	671 8120	IS380	Database	3	A
201	Samin Jannat	671 8120	IS416	C#	3	B
201	Samin Jannat	671 8120	IS420	NetWorking	3	B
301	Arita Imrose	871 2356	IS417	System Analysis	3	A

2. Create a Stored Procedure to
   a. Insert data into Student table (StudentId will be incremented from the proc)
   b. Update student and course wise grade if needed from the procedure (7)
   c. Create a view to show all the information in a meaning full order related to Student Samin Jannat and show the Course name using subquery. (5)
   d. Handle exception with appropriate process. (3)

```sql
CREATE DATABASE StudentResult
GO
USE StudentResult
CREATE TABLE Student(
      StudentId int PRIMARY KEY NOT NULL,
      FirstName varchar(20),
      LastName varchar(20),
      PhoneNo varchar(20)
)
GO
CREATE TABLE Course(
      CourseId varchar(5) PRIMARY KEY NOT NULL,
      CourseName varchar(20),
      CreditHours int
)
GO
CREATE TABLE StudCourse(
      StudentId INT FOREIGN KEY REFERENCES Student(StudentId),
      CourseId varchar(5) FOREIGN KEY REFERENCES Course(CourseId),
      Grade varchar(2),
      PRIMARY KEY (StudentId, CourseId)
)
GO
INSERT INTO Student
      VALUES
            (101, 'Taseef', 'Hasan', '487 2454'),
            (201, 'Samin', 'Jannat', '671 8120'),
            (301, 'Arita', 'Imrose', '871 2356')
```

```sql
GO
INSERT INTO Course
        VALUES
                ('IS380', 'Database', 3),
                ('IS416', 'C#', 3),
                ('IS420', 'Networking', 3),
                ('IS417', 'System Analaysis', 3)
GO
INSERT INTO StudCourse
        VALUES
                (101, 'IS380', 'A'),
                (101, 'IS416', 'B'),
                (201, 'IS380', 'A'),
                (201, 'IS416', 'B'),
                (201, 'IS420', 'B'),
                (301, 'IS417', 'A')
GO

CREATE PROC spStudInsert @id int,
                                        @FirstName varchar(20),
                                        @LastName varchar(20),
                                        @PhoneNo varchar(20),
                                        @CourseId varchar(20),
                                        @Grade varchar(2),
                                        @IsUpdate bit
AS
BEGIN
        BEGIN TRY
                DECLARE @StudMaxId int
                SELECT @StudMaxId = MAX(StudentId) FROM Student
                IF(@IsUpdate = 0)
                        BEGIN
                                INSERT INTO Student
                                        VALUES
                                                (@StudMaxId + 100,@FirstName, @LastName,
@PhoneNo)
                        END
                        ELSE
                                BEGIN
                                        UPDATE StudCourse
                                                SET Grade = @Grade
                                                WHERE StudentId = @id AND CourseId = @CourseId
                                END
        END TRY
        BEGIN CATCH
                SELECT ERROR_NUMBER() AS ErrorNo,
                                ERROR_LINE() AS ErrorLine,
                                ERROR_SEVERITY() AS ErrorSeverity,
                                ERROR_STATE() AS ErrorState,
                                ERROR_MESSAGE() AS ErrorMessage
        END CATCH

END
GO
CREATE VIEW vStudInformation
AS
        SELECT s.StudentId as [Student Id],
                        (s.FirstName + ' ' + s.LastName) as [Student Name],
```

```sql
                c.CourseId as [Course Id],
                (SELECT c.CourseName FROM Course c WHERE c.CourseId = sc.CourseId)
as [Course Name]
        FROM Student s
        JOIN StudCourse sc ON s.StudentId = sc.StudentId
        JOIN Course c ON sc.CourseId = c.CourseId
        WHERE s.StudentId = 201
GO

SELECT * FROM vStudInformation

EXEC spStudInsert 101, 'Rakibul', 'Islam', '012 02125', 'IS416', 'A', 1
```