/\* -- REQ 10: HOW TO JOIN MORE THAN TWO TABLES ?? \*/

-- WE NEED TO JOIN TWO TABLES. THEIR RESULT NEEDS TO JOINED WITH 3RD TABLE AND SO ON..

CREATE TABLE TBLSTAFF

(

STF\_ID INT IDENTITY(100001,1),

STF\_NAME VARCHAR(30) NOT NULL,

STF\_AGE TINYINT CHECK (STF\_AGE >= 28) DEFAULT 28,

STF\_GENDER CHAR CHECK (STF\_GENDER IN ('M','F')) DEFAULT 'F',

STF\_COURSE\_ID INT REFERENCES TBLCOURSES(COURSE\_ID)

)

INSERT TBLSTAFF VALUES ('SAI', 34, 'M', 101)

INSERT TBLSTAFF VALUES ('JON', 34, 'F', 101)

INSERT TBLSTAFF VALUES ('JOHNE', 34, 'M', 102)

SELECT \* FROM TBLCOURSES

SELECT \* FROM TBLSTUDENTS

SELECT \* FROM TBLSTAFF

-- REQUIREMENT 10 : HOW TO REPORT COURSE DETAILS ALONG WITH STUDENTS AND STAFF DETAILS?

SELECT \* FROM TBLCOURSES

INNER JOIN TBLSTUDENTS

ON

TBLCOURSES.COURSE\_ID = TBLSTUDENTS.STD\_COURSE\_ID

INNER JOIN TBLSTAFF

ON

TBLCOURSES.COURSE\_ID = TBLSTAFF.STF\_COURSE\_ID

-- REQUIREMENT 11 : HOW TO REPORT COURSE DETAILS ALONG WITH STUDENTS AND STAFF DETAILS?

SELECT \* FROM TBLCOURSES

INNER JOIN TBLSTUDENTS

ON

TBLCOURSES.COURSE\_ID = TBLSTUDENTS.STD\_COURSE\_ID

LEFT OUTER JOIN TBLSTAFF

ON

TBLCOURSES.COURSE\_ID = TBLSTAFF.STF\_COURSE\_ID

-- REQ 12: CROSS JOIN OF MORE THAN TWO TABLES:

SELECT \* FROM TBLCOURSES, TBLSTUDENTS, TBLSTAFF

-- REQ 6: HOW TO FIND THE LIST OF ALL COURSES WITH & WITHOUT STUDENTS. ALL STUDENTS WITH & WITHOUT COURSES?

SELECT \* FROM

TBLSTUDENTS -- LEFT TABLE

FULL OUTER JOIN

tblcourses -- RIGHT TABLE

ON

TBLSTUDENTS.STD\_COURSE\_ID = tblcourses.course\_id

-- EXAMPLE FOR CROSS JOIN:

SELECT \* FROM

TBLSTUDENTS -- LEFT TABLE

CROSS JOIN

tblcourses -- RIGHT TABLE

-- EXAMPLES FOR JOIN OPTIONS:

-- When working with bigger tables (row count above 1000k rows) then we need to use MERGE JOIN option

SELECT \* FROM TBLCOURSES

LEFT OUTER MERGE JOIN -- AUTO SORTED AND FASTER FOR BIGGER TABLES

tblStudents

ON tblStudents.Std\_Course\_ID = TBLCOURSES.COURSE\_ID

WHERE tblStudents.Std\_Course\_ID is not null

SELECT COUNT(\*) FROM TBLCOURSES -- REPORTS TOTAL NUMBER OF ROWS

SELECT COUNT(DISTINCT COURSE\_ID) FROM TBLCOURSES -- REPORTS NUMBER OF ROWS WITH UNIQUE COURSE ID

SELECT \* FROM TBLCOURSES

RIGHT OUTER LOOP JOIN -- FOR SMALLER TABLES

tblStudents

ON tblStudents.Std\_Course\_ID = TBLCOURSES.COURSE\_ID

WHERE tblStudents.Std\_Course\_ID is not null

SELECT \* FROM TBLCOURSES

INNER HASH JOIN -- FOR DYNAMIC, HEAP [TABLES WITHOUT PK &/ INDEX] TABLES

tblStudents

ON tblStudents.Std\_Course\_ID = TBLCOURSES.COURSE\_ID

WHERE tblStudents.Std\_Course\_ID is not null

-- REQ 5 : HOW TO REPORT LIST OF ALL COURSES AND STUDENTS?

SELECT \* FROM TBLCOURSES CROSS JOIN tblStudents

SELECT \* FROM TBLCOURSES CROSS APPLY tblStudents

-- FOR CROSS JOIN, WE CANNOT USE "MERGE" OR "HASH" OR "LOOP".

CREATE TABLE RESERVATIONS

(

CRAFT\_CODE VARCHAR(30),

NO\_OF\_SEATS INT,

CLASS VARCHAR(30)

)

CREATE TABLE FLIGHT

(

CRAFT\_CODE VARCHAR(30),

SOURCE VARCHAR(30),

DESTINATION VARCHAR(30)

)

INSERT INTO RESERVATIONS VALUES ('AI01', 11, 'ECO'), ('AI02', 22, 'ECO'), ('AI03', 33, 'ECO'), ('AI04', 44, 'ECO')

INSERT INTO FLIGHT VALUES ('AI01', 'CITY1', 'CITY2'), ('AI02', 'CITY1', 'CITY3'), ('AI03', 'CITY3', 'CITY1')

-- HOW TO REPORT LIST OF ALL FLIGHTS AND MATCHING RESERVATIONS?

SELECT \* FROM

FLIGHT -- LEFT TABLE

INNER JOIN

RESERVATIONS -- RIGHT TABLE

ON FLIGHT.CRAFT\_CODE = RESERVATIONS.CRAFT\_CODE

-- HOW TO REPORT LIST OF ALL FLIGHTS WITHOUT ANY RESERVATIONS?

SELECT \* FROM

FLIGHT -- LEFT TABLE

LEFT OUTER JOIN

RESERVATIONS -- RIGHT TABLE

ON FLIGHT.CRAFT\_CODE = RESERVATIONS.CRAFT\_CODE

WHERE

RESERVATIONS.CRAFT\_CODE IS NULL

-- HOW TO REPORT LIST OF ALL RESERVATIONS WITHOUT ANY FLIGHTS?

SELECT \* FROM

RESERVATIONS -- LEFT TABLE

LEFT OUTER JOIN

FLIGHT -- RIGHT TABLE

ON FLIGHT.CRAFT\_CODE = RESERVATIONS.CRAFT\_CODE

WHERE

FLIGHT.CRAFT\_CODE IS NULL

-- HOW TO REPORT LIST OF ALL FLIGHTS WITHOUT ANY RESERVATIONS AND ALL RESERVATIONS WITHOUT ANY FLIGHTS ?

SELECT \* FROM

RESERVATIONS -- LEFT TABLE

FULL OUTER JOIN

FLIGHT -- RIGHT TABLE

ON FLIGHT.CRAFT\_CODE = RESERVATIONS.CRAFT\_CODE

-- HOW TO REPORT ALL POSSIBLE COMBINATIONS OF FLIGHTS AND RESERVATIONS?

SELECT \* FROM RESERVATIONS CROSS JOIN FLIGHT

-- FOR LEFT OUTER JOIN : ALL RESERVATIONS AND MATCHING FLIGHTS. NON MATCH FLIGHT IS NULL

-- FOR RIGHT OUTER JOIN : ALL FLIGHTS AND MATCHING RESRVATIONS. NON MATCH RESERVATIONS IS NULL

-- THIS IS YOUR TAKS ITEM : INSERT SOME SAMPLE DATA INTO ABOVE TABLES. TEST INNER, ALL OUTER JOIN QUERIES.

-- REQ 6 : HOW TO TUNE QUERIES WITH JOINS [FOR BIG TABLES] ?

SELECT \* FROM COURSES

INNER MERGE JOIN

tblStudents

ON COURSES.COURSE\_ID = tblStudents.StdCourse\_ID

-- REQ 7 : HOW TO TUNE QUERIES WITH JOINS [FOR SMALL TABLES] ?

SELECT \* FROM COURSES

LEFT OUTER LOOP JOIN

tblStudents

ON COURSES.COURSE\_ID = tblStudents.StdCourse\_ID

-- REQ 8 : HOW TO TUNE QUERIES WITH JOINS [FOR HEAP TABLES] ?

SELECT \* FROM COURSES

FULL OUTER LOOP JOIN

tblStudents

ON

COURSES.COURSE\_ID = tblStudents.StdCourse\_ID