Final Report

ALL QUERY

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---INDEX---

CREATE INDEX Check_Name ON Students([FName])

SELECT * FROM Students WHERE [FName] = N'Hải'


-- STORED PROCEDURE --

CREATE PROC Count_Weight
       @WeightDetails FLOAT,
       @Count INT OUT
AS
BEGIN
       SELECT @Count = COUNT(*) FROM [Weight] WHERE weight_details = @WeightDetails;
       RETURN 0;
END


DECLARE @CountWeight INT = 0;
EXEC Count_Weight @WeightDetails = 0.1, @Count = @CountWeight OUT;
PRINT @CountWeight;


--TRIGGER–

CREATE TRIGGER Check_Grade_FE ON GRADE
AFTER INSERT, UPDATE
AS
       DECLARE @STUDENTID VARCHAR(10);
       DECLARE @SUBID VARCHAR(10);
       DECLARE @WEIGHTID VARCHAR(50);
       DECLARE @VALUE FLOAT;
       SELECT @STUDENTID = StudentID FROM inserted;
       SELECT @SUBID = SubID FROM inserted;
       SELECT @WEIGHTID = WeightID FROM inserted;
       SELECT @VALUE = Value FROM inserted;
       IF @WEIGHTID = 'FE' AND  @VALUE > 7.5
       BEGIN
              UPDATE Grade SET Status = 'Passed' WHERE StudentID = @STUDENTID
              AND SubID = @SUBID
       END



SELECT *FROM GRADE WHERE StudentID = 'XXXXX'
DELETE FROM GRADE WHERE StudentID = 'XXXXX'

INSERT GRADE(StudentID,SubID,WeightID,[Value]) VALUES
('XXXXX','MAI391','FE',ROUND((RAND()*(10-2)+8),1))
INSERT GRADE(StudentID,SubID,WeightID,[Value]) VALUES
('XXXXX','MAI391','FE',ROUND((RAND()*(10-4)),1))



--1: ORDER BY --
SELECT * FROM Students ORDER BY StudentID

--2: INNER JOIN --
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```sql
SELECT StudentID,SubID,w.WeightID,Value,weight_details FROM GRADE d
inner join [Weight] w ON d.WeightID = w.WeightID

--3: AGGREGATE FUNCTION–

SELECT count(StudentID) AS [Number of Students] FROM Students

--4: GROUP BY AND HAVING

SELECT SubID,SUM(Part) FROM
(SELECT s.SubID,s.SubName,CategoryName AS [Category], Type,Part,Weight,[Completion
Criteria],Duration,CLO From Assessment a
inner join Category c ON a.CategoryID = c.CategoryID
inner join [Subject] s ON s.SubID = a.SubID ) AS tbl
GROUP BY tbl.SubName,tbl.SubID
HAVING tbl.SubID <> 'CEA201'

--5: A SUB-QUERY AS A RELATION

SELECT s.StudentID,LName+' '+FName AS [Full Name],g.GroupID,Major,SesName,SubName FROM
Students s
INNER JOIN [JOIN] AS j ON s.StudentID = j.StudentID
INNER JOIN [Group] AS g ON j.GroupID = g.GroupID
INNER JOIN [ENROLL] AS e ON e.GroupID = g.GroupID
INNER JOIN [Semester] AS ses ON ses.SesID = e.SesID
INNER JOIN [ACADEMIC] AS aca ON ses.SesID = aca.SesID
INNER JOIN [Subject] AS sub ON aca.SubID = sub.SubID
WHERE SesName = 'Fall2022' AND s.StudentID = 'HA1001'
ORDER BY s.StudentID,g.GroupID,Major

--6: A SUB-QUERY IN THE WHERE CLAUS

SELECT StudentID,SubID,sum(tbl2.avg) AS [Total_Grade] FROM

(SELECT StudentID,SubID,sum([value]*[weight_details]/1) AS [avg] FROM

(SELECT StudentID,SubID,w.WeightID,Value,weight_details FROM GRADE d
inner join [Weight] w ON d.WeightID = w.WeightID
WHERE StudentID = 'HE1603' ) AS tbl
GROUP BY StudentID,SubID,WeightID) AS tbl2
GROUP BY tbl2.StudentID,tbl2.SubID

--8: USES A SELF-JOIN

SELECT g1.GroupID,g1.Relation AS [Supervisor] FROM [Group] AS g1
LEFT JOIN [Group] AS g2 ON g1.Relation = g2.GroupID

--7: PARTIAL MATCHING IN THE WHERE CLAUSE

SELECT SubID,CategoryName AS [Category], Type,Part,Weight,[Completion
Criteria],Duration,CLO,AssID,a.CategoryID FROM Assessment a
inner join Category c ON a.CategoryID = c.CategoryID
WHERE AssID LIKE 'CSI104%'
ORDER BY Category DESC

--9:
SELECT tbl4.StudentID, SesID, ROUND((sum(Total_Grade)/count(SesID)),2) AS [Average]
FROM
(SELECT StudentID, SesID, Total_Grade FROM
(SELECT StudentID,SubID,sum(tbl2.avg) AS [Total_Grade] FROM

(SELECT StudentID,SubID,sum([value]*[weight_details]/1) AS [avg] FROM

(SELECT StudentID,SubID,w.WeightID,Value,weight_details FROM GRADE d
inner join [Weight] w ON d.WeightID = w.WeightID
WHERE StudentID = 'HE1603') AS tbl
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GROUP BY StudentID,SubID,WeightID) AS tbl2
GROUP BY tbl2.StudentID,tbl2.SubID ) AS tbl3
inner join ACADEMIC ac ON ac.SubID = tbl3.SubID) AS tbl4
GROUP BY tbl4.StudentID,tbl4.SesID

--10:
SELECT tbl5.StudentID, tbl5.[Average Grade All],
(
	CASE
	WHEN tbl5.[Average Grade All] < 7.1 THEN ' HSY '
	WHEN [Average Grade All] >= 7.1 and [Average Grade All] < 8 THEN ' HSTT '
	WHEN [Average Grade All] >= 8 THEN ' HSG '
	END
) AS Ranking
FROM
(SELECT s.StudentID,LName + ' ' + FName AS [Full Name], [Average Grade All] FROM
(SELECT StudentID,ROUND((SUM(Total_Grade)/COUNT(StudentID)),2) AS [Average Grade All]
FROM
(SELECT StudentID,SubID,SUM(tbl2.AVG) AS [Total_Grade] FROM

(SELECT StudentID,SubID,SUM([value]*[weight_details]/1) AS [avg] FROM

(SELECT StudentID,SubID,w.WeightID,Value,weight_details FROM GRADE d
inner join [Weight] w ON d.WeightID = w.WeightID) AS tbl
GROUP BY StudentID,SubID,WeightID) AS tbl2
GROUP BY tbl2.StudentID,tbl2.SubID ) AS tbl3
GROUP BY tbl3.StudentID) AS tbl4
INNER JOIN Students s ON tbl4.StudentID = s.StudentID) AS tbl5
```