Database Systems I

Lab – IF Function, UPDATE Statement

Department of Information Technology
Database Systems I (IT215)
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Lecturer: Soma Soleimanzadeh

IF Function in SELECT Query – Example 1

- Write a query that considers below conditions and shows this output.

Enroll

stuID	classCode	grade
S1002	M235	76.00
S1004	E227	50.00
S1005	H115	93.00
S1007	E227	82.00
S1007	E414	71.25
S1010	B226	75.00
S1011	E227	33.00
S1011	E314	57.50
S1012	C413	60.00
S1012	C416	50.50
S1013	M235	90.00
S1015	S226	88.70
S1017	H115	79.00
S1020	C321	40.00
S1020	C413	45.00
S1020	C416	48.00

grade >= 50 : "Pass"

Grade < 50 : "Fail"

Query Output

stuID	classCode	grade	GradeStatus
S1002	M235	76.00	Pass
S1004	E227	50.00	Pass
S1005	H115	93.00	Pass
S1007	E227	82.00	Pass
S1007	E414	71.25	Pass
S1010	B226	75.00	Pass
S1011	E227	33.00	Fail
S1011	E314	57.50	Pass
S1012	C413	60.00	Pass
S1012	C416	50.50	Pass
S1013	M235	90.00	Pass
S1015	S226	88.70	Pass
S1017	H115	79.00	Pass
S1020	C321	40.00	Fail
S1020	C413	45.00	Fail
S1020	C416	48.00	Fail

IF Function in SELECT Query – Example 1

- Write a query that considers below conditions and shows this output.

```
select stuID, classCode, grade, IF(grade>=50, 'Pass', 'Fail') AS  GradeStatus
from enroll;
```

Query Output

stuID	classCode	grade	GradeStatus
S1002	M235	76.00	Pass
S1004	E227	50.00	Pass
S1005	H115	93.00	Pass
S1007	E227	82.00	Pass
S1007	E414	71.25	Pass
S1010	B226	75.00	Pass
S1011	E227	33.00	Fail
S1011	E314	57.50	Pass
S1012	C413	60.00	Pass
S1012	C416	50.50	Pass
S1013	M235	90.00	Pass
S1015	S226	88.70	Pass
S1017	H115	79.00	Pass
S1020	C321	40.00	Fail
S1020	C413	45.00	Fail
S1020	C416	48.00	Fail

IF Function in SELECT Query – Example 2

- Write a query that considers below conditions and shows this output.

Enroll

stuID	classCode	grade
S1002	M235	76.00
S1004	E227	50.00
S1005	H115	93.00
S1007	E227	82.00
S1007	E414	71.25
S1010	B226	75.00
S1011	E227	33.00
S1011	E314	57.50
S1012	C413	60.00
S1012	C416	50.50
S1013	M235	90.00
S1015	S226	88.70
S1017	H115	79.00
S1020	C321	40.00
S1020	C413	45.00
S1020	C416	48.00

grade > 70 : "Excellent"

50 <= Grade <= 70 : "Good"

Grade < 50 : "Fail"

Query Output

stuID	classCode	grade	GradeStatus
S1002	M235	76.00	Excellent
S1004	E227	50.00	Good
S1005	H115	93.00	Excellent
S1007	E227	82.00	Excellent
S1007	E414	71.25	Excellent
S1010	B226	75.00	Excellent
S1011	E227	33.00	Fail
S1011	E314	57.50	Good
S1012	C413	60.00	Good
S1012	C416	50.50	Good
S1013	M235	90.00	Excellent
S1015	S226	88.70	Excellent
S1017	H115	79.00	Excellent
S1020	C321	40.00	Fail
S1020	C413	45.00	Fail
S1020	C416	48.00	Fail

IF Function in SELECT Query – Example 2

- Write a query that considers below conditions and shows this output.

```
select stuID, classCode, grade, IF(grade>70, 'Excellent', IF(grade between 50 and 70, 'Good', 'Fail')) AS  GradeStatus
from enroll;
```

Query Output

stuID	classCode	grade	GradeStatus
S1002	M235	76.00	Excellent
S1004	E227	50.00	Good
S1005	H115	93.00	Excellent
S1007	E227	82.00	Excellent
S1007	E414	71.25	Excellent
S1010	B226	75.00	Excellent
S1011	E227	33.00	Fail
S1011	E314	57.50	Good
S1012	C413	60.00	Good
S1012	C416	50.50	Good
S1013	M235	90.00	Excellent
S1015	S226	88.70	Excellent
S1017	H115	79.00	Excellent
S1020	C321	40.00	Fail
S1020	C413	45.00	Fail
S1020	C416	48.00	Fail

Modifying Records in a Table

- DML Statements for applying changes to records (data) in a table:
  - **UPDATE** Statement
  - **INSERT** Statement
  - **DELETE** Statement
- **INSERT** and **DELETE** statements were already explained in lab lecture 5.

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General Syntax of UPDATE Statement

```
UPDATE      tableName
SET         columnName = newValue
[WHERE      conditions];
```

Example

```
UPDATE      Teacher
SET         teacherRank = 'Lecturer'
WHERE       teacherRank = ' Assistant Lec';
```

Teacher

teacherID	teacherName	deptName	teacherRank
BI01	Adams	Biology	Lecturer
CS01	Byrne	Computer Science	Assistant Prof
CS02	Smith	Computer Science	Assistant Lec
CS03	John	Computer Science	Lecturer
EN01	Smith	English	Professor
EN02	Leonardo	English	Assistant Lec
EN03	Kate	English	Lecturer
HI01	Kim	History	Assistant Prof
MA01	Julia	Mathematics	Assistant Lec
SP01	Maria	Sport	Professor
SP02	Sarah	Sport	Lecturer

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Update Statement – Example 1

- Change the major of a student named **'Owen McCarthy'** to 'Biology' and reduce his credits by 5.

```
update student
set major = 'Biology', credits = credits - 5
where firstName = 'Owen' AND lastName = 'McCarthy';
```

Student

stuID	lastName	firstName	major	credits
S1001	Smith	Tom	History	90
S1002	Chin	Ann	Mathematics	36
S1004	Smith	Jack	English	75
S1005	Lee	Perry	History	3
S1007	Streep	Sarah	English	81
S1010	Burns	Edward	Biology	63
S1011	Roberts	Mike	English	66
S1012	Damon	Tom	Computer Science	90
S1013	McCarthy	Owen	Mathematics	27
S1015	Jones	Mary	Sport	42
S1017	Ford	Jennifer	History	45
S1018	Nolan	Ryan	English	50
S1020	Rivera	Jane	Computer Science	15

Update Statement – Example 2

- By having **Class** table, change the schedule of those classes that are held on **Sunday** in the **Computer Science** department to **Thursday**.

Class

classCode	teacherID	classDay	room	deptName
B226	BI01	Monday	4211	Biology
C126	CS03	Monday	9311	Computer Science
C321	CS03	Sunday	9308	Computer Science
C413	CS02	Tuesday	9308	Computer Science
C416	CS03	Thursday	9311	Computer Science
E227	EN01	Thursday	1206	English
E314	EN03	Monday	1204	English
E414	EN03	Sunday	1210	English
H115	HI01	Sunday	2108	History
M235	MA01	Thursday	5204	Mathematics
M425	MA01	Monday	5210	Mathematics
S226	SP02	Tuesday	1304	Sport

```
update class
set classDay = 'Thursday'
where classDay = 'Sunday' AND deptName = 'Computer Science';
```

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