

PRAKTIKUM BASIS DATA

BAB	: TRANSACTION
NAMA	: DANI ADRIAN
NIM	: 225150201111009
ASISTEN	: NATHAN DAUD
	RAKHA HANIF MAHESWARA
	NAUFAL PUTRA SUTRISNA
	STANISLAUS FRANS BERNADO
TGL PRAKTIKUM	: 22/11/2023
TGL PENGUMPULAN	: 01/12/2023



Pertanyaan

1. Tambahkan data kuliah baru (course dengan nama “*Game Programming*”) beserta nilainya (ke tabel **takes**) oleh **student** bernama “Manber” menggunakan *subquery* dengan ketentuan:
 - Tabel **takes** hanya berisi ID *student* sehingga pengisian ID Student dari “Manber” harus dilakukan melalui *subquery* (tidak dengan cara mengisikan ID secara langsung/*hard code*)
 - Tabel **takes** hanya berisi ID *course* sehingga pengisian ID Course dari “*Game Programming*” harus dilakukan melalui *subquery* (tidak dengan cara mengisikan ID secara langsung/*hard code*).

Implementasi

```
USE DBSS_009

BEGIN TRANSACTION
BEGIN TRY
INSERT INTO section
SELECT course_id, 2, 'Spring', 2007, 'Bronfman', 700,
'L'
FROM course
WHERE title = 'Game Programming' AND dept_name = 'Comp.
Sci.'
INSERT INTO takes
SELECT ID, course_id, 2, 'Spring', 2007, 91, 'A+'
FROM student, course
WHERE name = 'Manber' AND title = 'Game Programming'
AND course.dept_name = 'Comp. Sci.'
COMMIT TRANSACTION
END TRY
```

```

BEGIN CATCH
PRINT 'Error occured: Rollback all.'
ROLLBACK TRANSACTION
END CATCH

```

Tampilan Keluaran

SQLQuery1.sql - LA....DBSS_009 (sa (67))*

```

1 USE DBSS_009
2
3 BEGIN TRANSACTION
4 BEGIN TRY
5 INSERT INTO section
6 SELECT course_id, 2, 'Spring', 2007, 'Bronfman', 700, 'L'
7 FROM course
8 WHERE title = 'Game Programming' AND dept_name = 'Comp. Sci.'
9 INSERT INTO takes
10 SELECT ID, course_id, 2, 'Spring', 2007, 91, 'A+'
11 FROM student, course
12 WHERE name = 'Manber' AND title = 'Game Programming' AND course.dept_name = 'Comp. Sci.'
13 COMMIT TRANSACTION
14 END TRY

```

133 %

Messages

(1 row affected)

(1 row affected)

Completion time: 2023-12-01T19:20:20.1865625+07:00

Dani Adrian.txt

File Edit View

Dani Adrian
225150201111009

Ln 1, Col 1 | 100% | Windows (CRLF) | UTF-8

SQLQuery1.sql - LA....DBSS_009 (sa (67))*

```

1 USE DBSS_009
2
3 SELECT * FROM takes
4 WHERE course_id = (SELECT course_id FROM course WHERE title = 'Game Programming' AND dept_name = 'Comp. Sci.')
5 AND ID = (SELECT ID FROM student WHERE name = 'Manber')
6

```

110 %

Results Messages

ID	course_id	sec_id	semester	year	score	grade
1	359	2	Spring	2007	91	A+

Dani Adrian.txt

File Edit View

Dani Adrian
225150201111009

Ln 1, Col 1 | 100% | Windows (CRLF) | UTF-8

SQLQuery1.sql - LA....DBSS_009 (sa (67))

```
1 USE DBSS_009
2
3 SELECT * FROM takes
4 JOIN course
5 ON takes.course_id = course.course_id
6 JOIN section
7 ON course.course_id = section.course_id
8 WHERE GRADE = 'A+'

```

110 %

Results Messages

Ln 1, Col 1 | 100% | Windows (CRLF) | UTF-8

Dani Adrian.txt

File Edit View

Dani Adrian
225150201111009

	ID	course_id	sec_id	semester	year	score	grade	course_id	title	dept_name	credits	course_id	sec_id	semester	year	building	room_number	time_slot_id
1	1000	359	2	Spring	2007	91	A+	359	Game Programming	Comp. Sci.	4	359	2	Spring	2007	Bronfman	700	L
2	10033	679	1	Spring	2010	98	A+	679	The Beatles	Math	3	679	1	Spring	2010	Saucon	844	D
3	10076	482	1	Fall	2005	90	A+	482	FOCAL Programming	Psychology	4	482	1	Fall	2005	Whitman	434	H
4	10076	559	1	Fall	2002	91	A+	559	Martian History	Biology	3	559	1	Fall	2002	Lamberton	134	J
5	10076	747	1	Spring	2004	97	A+	747	International Practicum	Comp. Sci.	4	747	1	Spring	2004	Gates	314	K
6	1018	274	1	Fall	2002	94	A+	274	Corporate Law	Comp. Sci.	4	274	1	Fall	2002	Main	425	N
7	1018	482	1	Fall	2005	97	A+	482	FOCAL Programming	Psychology	4	482	1	Fall	2005	Whitman	434	H
8	1018	599	1	Spring	2003	91	A+	599	Mechanics	Psychology	4	599	1	Spring	2003	Chandler	804	D
9	10204	875	1	Spring	2005	99	A+	875	Bioinformatics	Cybernetics	3	875	1	Spring	2005	Power	717	P
10	10267	237	2	Fall	2009	95	A+	237	Surfing	Cybernetics	3	237	1	Spring	2008	Power	717	D
11	10267	237	2	Fall	2009	95	A+	237	Surfing	Cybernetics	3	237	2	Fall	2009	Fairchild	145	J
12	10267	545	1	Fall	2001	90	A+	545	International Practicum	History	3	545	1	Fall	2001	Saucon	180	P
13	10269	702	1	Spring	2001	99	A+	702	Arabic	Biology	3	702	1	Spring	2001	Saucon	113	O
14	10454	169	2	Fall	2002	95	A+	169	Marine Mammals	Elec. Eng.	3	169	1	Spring	2007	Gates	314	A
15	10454	169	2	Fall	2002	95	A+	169	Marine Mammals	Elec. Eng.	3	169	2	Fall	2002	Drown	757	L
16	10454	349	1	Spring	2008	99	A+	349	Networking	Finance	4	349	1	Spring	2008	Saucon	113	K
17	10481	319	1	Spring	2003	97	A+	319	World History	Finance	4	319	1	Spring	2003	Rathbone	261	E
18	10481	559	1	Fall	2002	99	A+	559	Martian History	Biology	3	559	1	Fall	2002	Lamberton	134	J
19	10481	581	1	Spring	2005	96	A+	581	Calculus	Pol. Sci.	4	581	1	Spring	2005	Alumni	547	G
20	10481	702	1	Spring	2001	96	A+	702	Arabic	Biology	3	702	1	Spring	2001	Saucon	113	O
21	10481	960	1	Fall	2009	93	A+	960	Tort Law	Civil Eng.	3	960	1	Fall	2009	Lamberton	134	J
22	10481	960	1	Fall	2009	93	A+	960	Tort Law	Civil Eng.	3	960	2	Fall	2006	Power	717	M
23	10527	599	1	Spring	2003	99	A+	599	Mechanics	Psychology	4	599	1	Spring	2003	Chandler	804	D

Query executed successfully.

LAPTOP-3UBO9HRP (16.0 RTM) | sa (67) |

Pembahasan dan Analisis

Nama : Dani Adrian

NIM : 225150201111009

Perintah diatas digunakan untuk menambah data matakul baru, course dengan nama "Game programming" oleh student bernama 'Manber'.

- o Begin Transaction, digunakan untuk memulai suatu transaction
- o INSERT INTO, untuk menambah data baru
- o TRY dan CATCH, untuk mendeteksi error dan mengatasinya
- o COMMIT TRANSACTION jika tidak ada error dan ROLLBACK TRANSACTION jika terjadi error.
- o INSERT INTO section, untuk menambah data ke table section dengan nilai course_id diambil dari course_id dari table course dengan nilai title adalah Game Programming dan nilai dept_name adalah Comp. Sci.
- o INSERT INTO takes, untuk menambah data ke dalam table takes dengan nilai ID diambil dari ID pada table Student yang memiliki nama Manber, nilai course_id diambil dari course_id dari table course dengan nilai title Game Programming dan nilai dept_name Comp. Sci.

Pertanyaan

2. Apabila data kuliah baru berhasil ditambahkan maka update *total credit* (**tot_cred**) pada tabel **student** sesuai SKS (*credit*) dari "Game Programming" melalui. Untuk mengetahui banyak SKS yang ditambahkan gunakan *subquery*.
Bungkus transaksi di atas dalam *error handling* **TRY...CATCH**.

Implementasi

```
USE DBSS_009

BEGIN TRANSACTION
BEGIN TRY
UPDATE student SET tot_cred = ((SELECT tot_cred FROM
student WHERE name = 'Manber') +
(SELECT credits FROM course WHERE title = 'Game
Programming' AND dept_name = 'Comp. Sci.'))
WHERE name = 'Manber'
COMMIT TRANSACTION
END TRY
BEGIN CATCH
PRINT 'Error occured: Rollback all.'
ROLLBACK TRANSACTION
```

	END CATCH
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Tampilan Keluaran

Sebelum

The screenshot shows a SQL Server Enterprise Manager interface. The top pane displays a query window titled 'SQLQuery1.sql - LA....DBSS_009 (sa (52))*'. The query is as follows:

```
1 USE DBSS_009
2
3 SELECT * FROM student WHERE name = 'Manber'
```

The bottom pane shows the 'Results' tab with a table containing one row of data:

	ID	name	dept_name	tot_cred
1	1000	Manber	Civil Eng.	39

Overlaid on the right is a text editor window titled 'Dani Adrian.txt' with the following content:

```
Dani Adrian
225150201111009
```

Implementasi

The screenshot shows a SQL Server Enterprise Manager interface. The top pane displays a query window titled 'SQLQuery2.sql - LA....DBSS_009 (sa (68))*'. The query is as follows:

```
1 USE DBSS_009
2
3 BEGIN TRY
4     BEGIN TRANSACTION
5
6     UPDATE student
7     SET tot_cred = (
8         (SELECT tot_cred FROM student WHERE name = 'Manber') +
9         (SELECT credits FROM course WHERE title = 'Game Programming' AND dept_name = 'Comp. Sci.')
10    )
11    WHERE name = 'Manber'
12
13    COMMIT TRANSACTION
14 END TRY
15 BEGIN CATCH
16     PRINT 'Error occured: Rollback all.'
17     ROLLBACK TRANSACTION
18 END CATCH
19
20
```

The bottom pane shows the 'Messages' tab with the following output:

```
(1 row affected)
Completion time: 2023-12-01T19:34:58.9139494+07:00
```

Overlaid on the right is a text editor window titled 'Dani Adrian.txt' with the following content:

```
Dani Adrian
225150201111009
```

Sesudah

The screenshot shows a SQL Server Enterprise Manager interface. At the top, there are two tabs: 'SQLQuery2.sql - LA....DBSS_009 (sa (68))*' and 'SQLQuery1.sql - LA....DBSS_009 (sa (67))*'. The active window displays a SQL query:

```
1 USE DBSS_009
2
3 SELECT * FROM student WHERE name = 'Manber'
4
5
6
```

Below the query window, there is a 'Results' tab showing a single row of data:

	ID	name	dept_name	tot_cred
1	1000	Manber	Civil Eng.	43

Overlaid on the bottom right is a text file window titled 'Dani Adrian.txt'. It contains the following text:

```
Dani Adrian
225150201111009
```

The text file window also shows a menu bar with 'File', 'Edit', and 'View' options, and a status bar indicating 'Ln 1, Col 1' and '100%' zoom.

Pembahasan dan Analisis

Nama : Dani Adrian

NIM : 225150201111009

Perintah diatas digunakan Untuk mengupdate total Credit (tot_credit) pada table student Sesuai SKS (Credit) dari 'Game programming'

Untuk mengubah suatu data pada tabel student dan mengatur tot_cred sekaligus mengambil dari penjumlahan 2 pengambilan data, digunakan perintah UPDATE student SET tot_cred = ((SELECT tot_cred FROM student WHERE name =

'Manber') + (SELECT credits FROM course WHERE title = 'Game Programming' AND dept_name = 'Comp. Sci.')) WHERE name = 'Manber'

o Untuk mengambil data tot_cred dari table student bernama Manber, digunakan perintah

⇒ SELECT tot_cred FROM student WHERE name = 'Manber'

o Untuk mengambil credits dari table course dimana memiliki title sama dengan Game Programming dan dept_name sama dengan comp. sci., digunakan perintah

⇒ SELECT credits FROM course WHERE title = 'Game Programming' AND dept_name = 'Comp. Sci.'