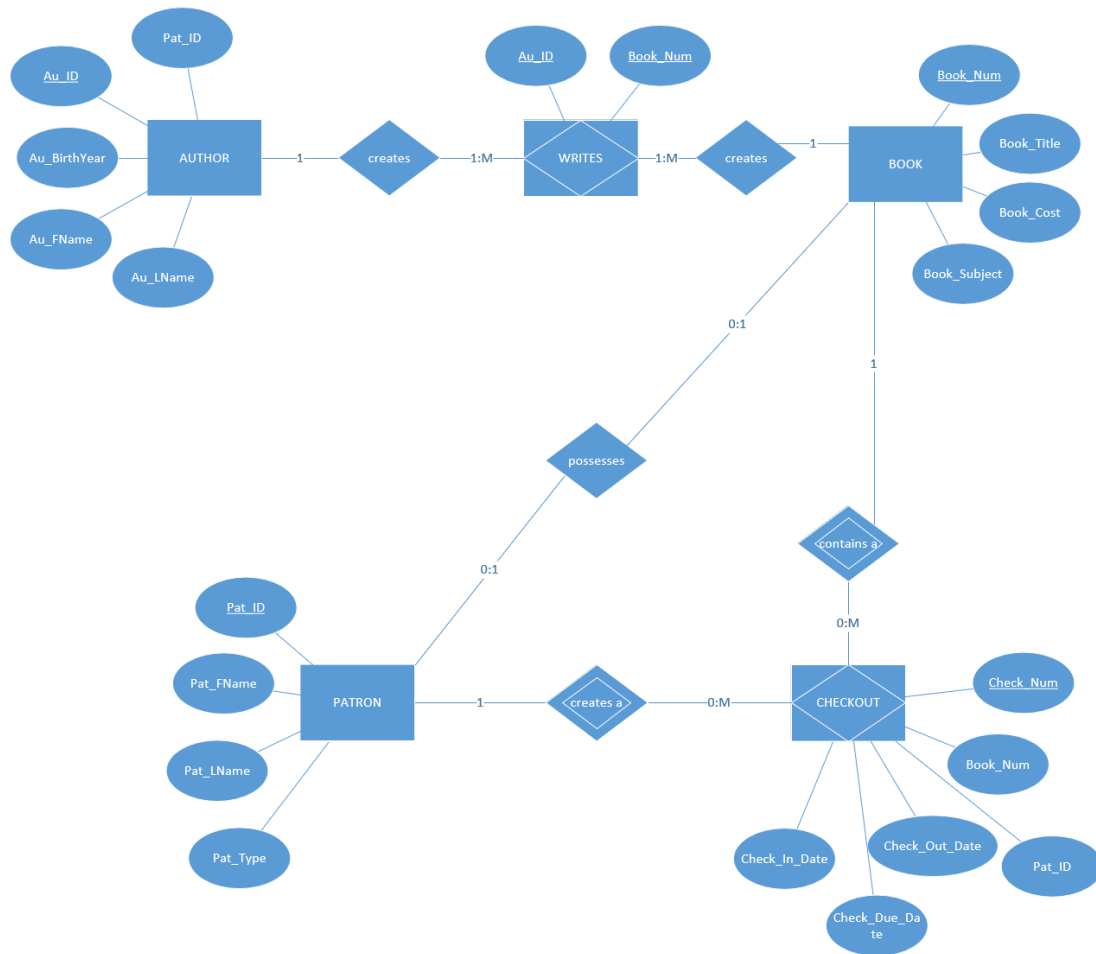


-Alex Merkley, Rylan J, Walker Nicholson, Jacob Forcht, Alex Weber  
The Jawnsons

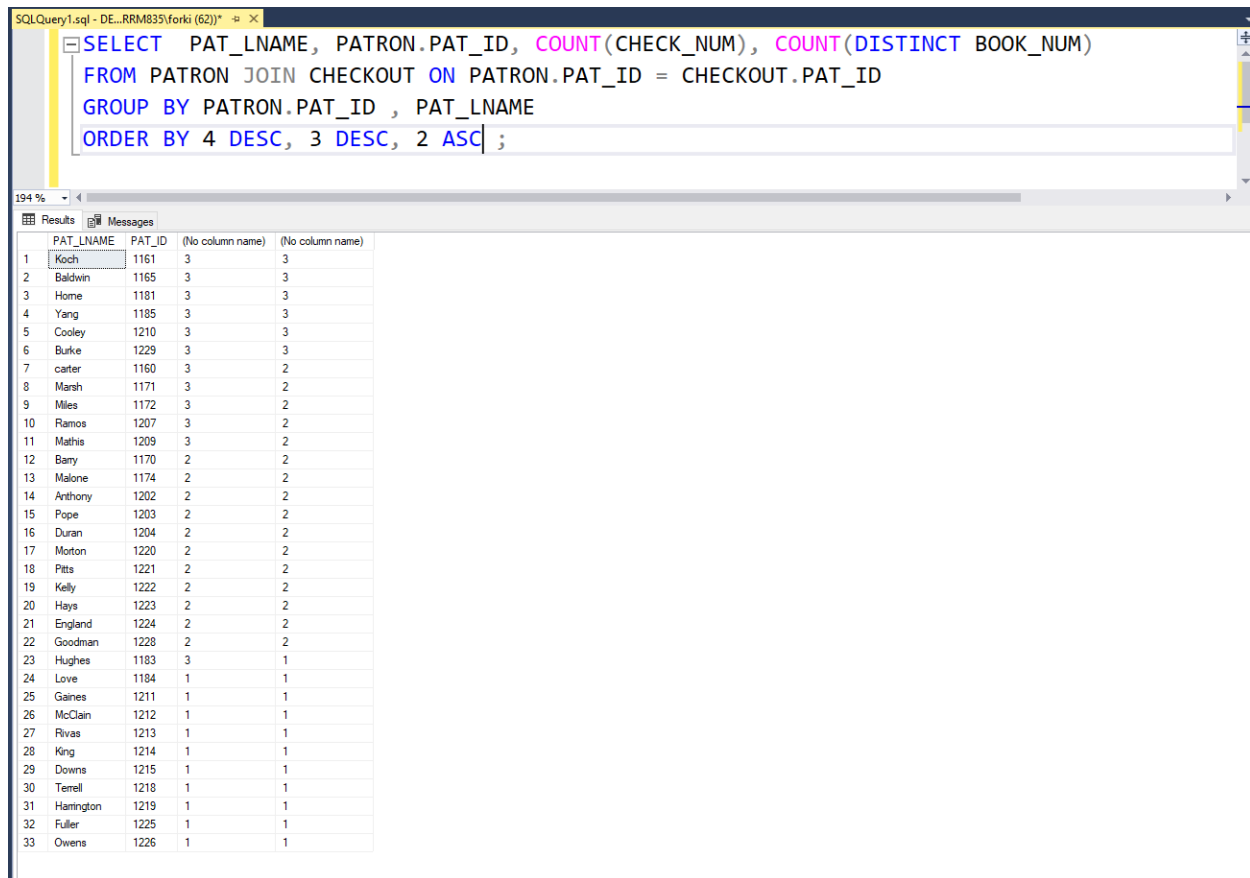
## Comprehensive group project

1) Create Chen and Relational diagrams from the ERD diagram you see on page 341



2) Complete the query questions from #102 to #105 in MS-SQL and show me the result of your query that you ran in MS SQL: Please pay attention to each request from the description and the data shown in figures from 7.102 to 7.105.

102.



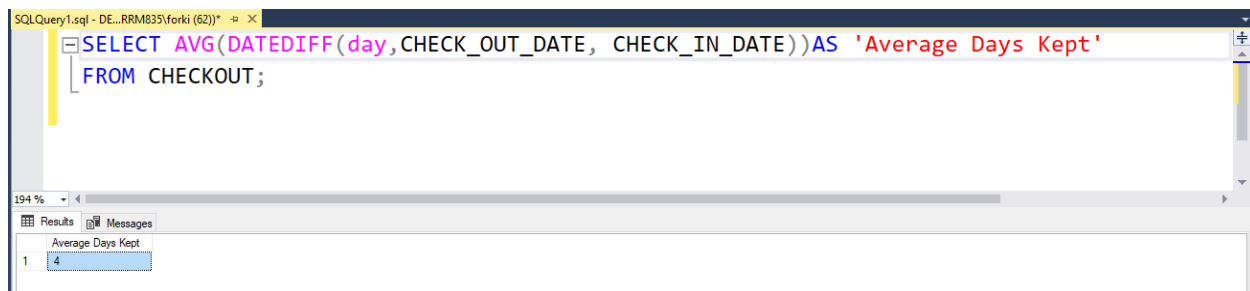
The screenshot shows a SQL query window with the following query:

```
SELECT PAT_LNAME, PATRON.PAT_ID, COUNT(CHECK_NUM), COUNT(DISTINCT BOOK_NUM)
FROM PATRON JOIN CHECKOUT ON PATRON.PAT_ID = CHECKOUT.PAT_ID
GROUP BY PATRON.PAT_ID, PAT_LNAME
ORDER BY 4 DESC, 3 DESC, 2 ASC;
```

The results are displayed in a table with 4 columns: PAT\_LNAME, PAT\_ID, (No column name), and (No column name). The data is sorted by the 4th column (COUNT(DISTINCT BOOK\_NUM)) in descending order, then the 3rd column (COUNT(CHECK\_NUM)) in descending order, and finally the 2nd column (PAT\_ID) in ascending order.

	PAT_LNAME	PAT_ID	(No column name)	(No column name)
1	Koch	1161	3	3
2	Baldwin	1165	3	3
3	Home	1181	3	3
4	Yang	1185	3	3
5	Cooley	1210	3	3
6	Burke	1229	3	3
7	carter	1160	3	2
8	Marsh	1171	3	2
9	Miles	1172	3	2
10	Ramos	1207	3	2
11	Mathis	1209	3	2
12	Barr	1170	2	2
13	Malone	1174	2	2
14	Anthony	1202	2	2
15	Pope	1203	2	2
16	Duran	1204	2	2
17	Morton	1220	2	2
18	Pitts	1221	2	2
19	Kelly	1222	2	2
20	Hays	1223	2	2
21	England	1224	2	2
22	Goodman	1228	2	2
23	Hughes	1183	3	1
24	Love	1184	1	1
25	Gaines	1211	1	1
26	McClain	1212	1	1
27	Rivas	1213	1	1
28	King	1214	1	1
29	Downs	1215	1	1
30	Terrell	1218	1	1
31	Harrington	1219	1	1
32	Fuller	1225	1	1
33	Owens	1226	1	1

103.



The screenshot shows a SQL query window with the following query:

```
SELECT AVG(DATEDIFF(day,CHECK_OUT_DATE, CHECK_IN_DATE))AS 'Average Days Kept'
FROM CHECKOUT;
```

The results are displayed in a table with 1 column: Average Days Kept. The result is 4.

Average Days Kept
4

-104

SQLQuery1.sql - DE...RRM835\forki (62))\*

```
SELECT PAT_ID,AVG(DATEDIFF(day,CHECK_OUT_DATE, CHECK_IN_DATE))AS 'Average Days Kept'  
FROM CHECKOUT  
GROUP BY PAT_ID  
ORDER BY 2 DESC;
```

194 %

Results Messages

	PAT_ID	Average Days Kept
1	1184	8
2	1219	8
3	1226	8
4	1228	7
5	1218	7
6	1222	7
7	1160	7
8	1185	6
9	1202	6
10	1203	6
11	1204	5
12	1207	5
13	1209	5
14	1165	5
15	1220	5
16	1183	4
17	1172	4
18	1171	3
19	1181	3
20	1161	3
21	1223	3
22	1224	3
23	1225	3
24	1215	2
25	1229	2
26	1170	2
27	1210	2
28	1211	2
29	1174	1
30	1221	1
31	1213	0
32	1214	0
33	1212	NULL

105.

SQLQuery1.sql - DE...RRM835\forki (62))\*

```
SELECT BOOK_NUM, BOOK_TITLE, BOOK_COST  
FROM BOOK  
WHERE BOOK_COST = (SELECT MIN(BOOK_COST) FROM BOOK)  
ORDER BY BOOK_NUM;
```

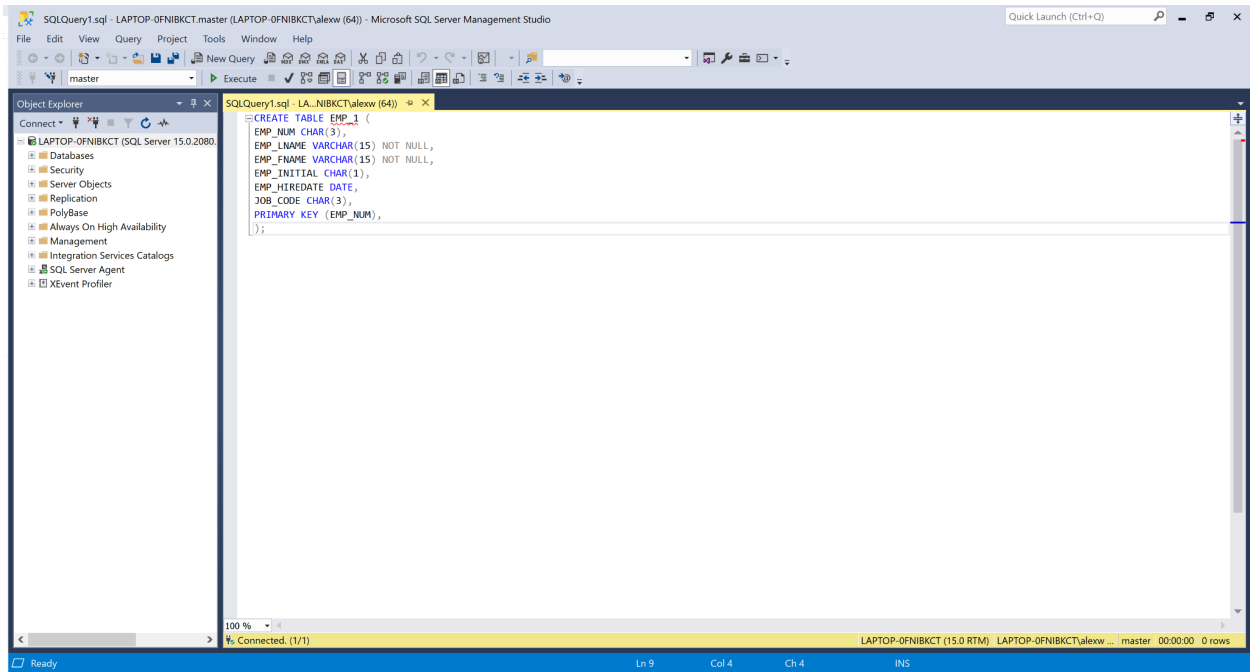
194 %

Results Messages

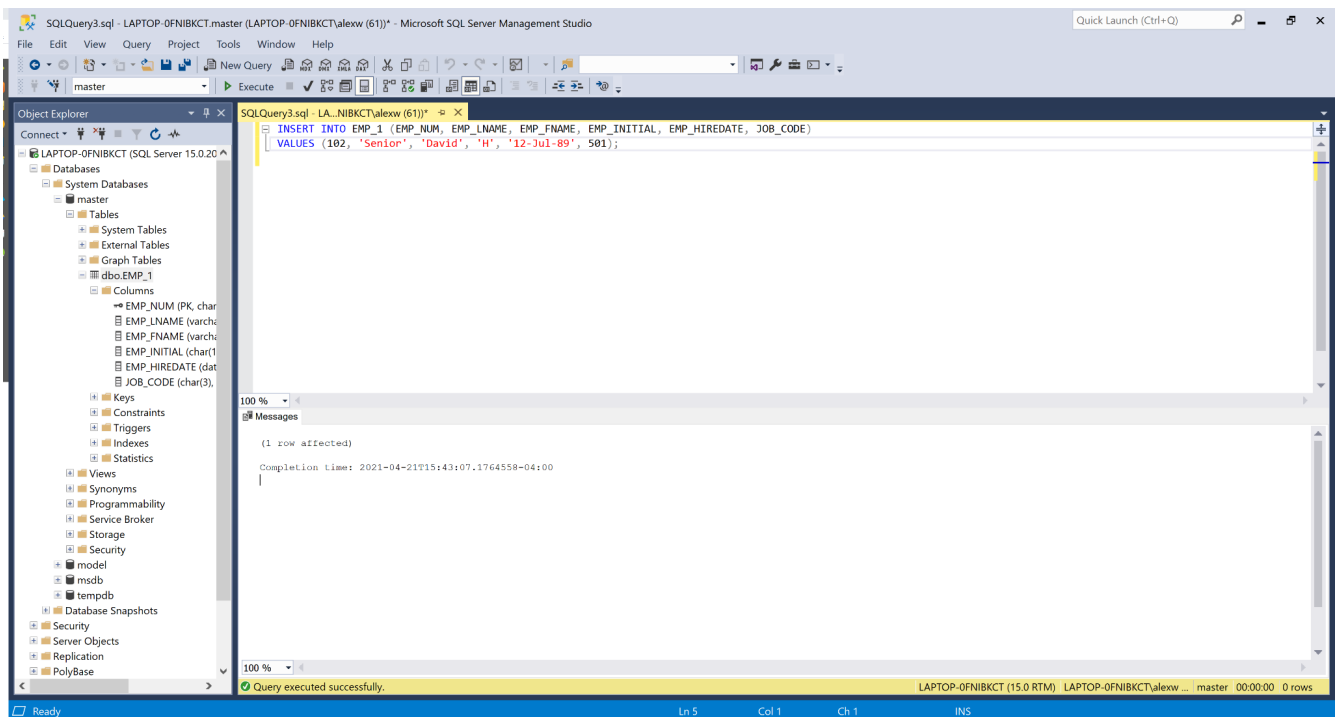
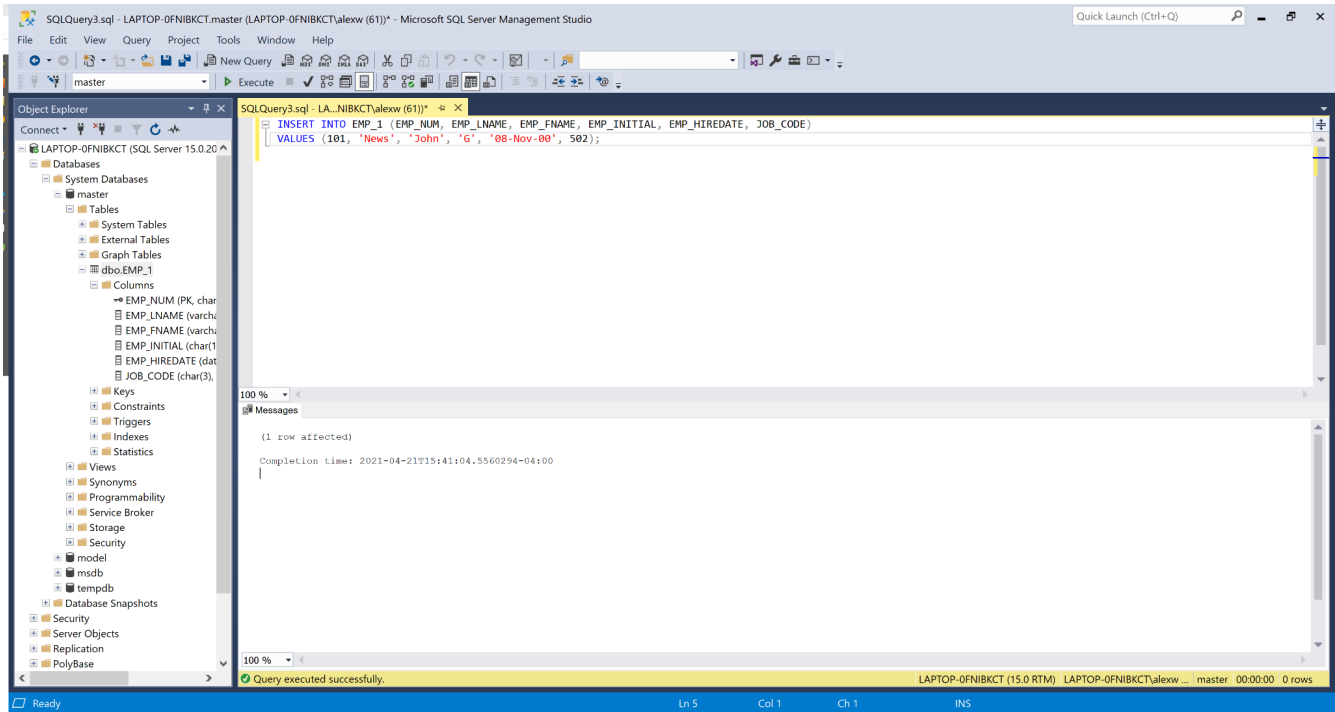
	BOOK_NUM	BOOK_TITLE	BOOK_COST
1	5239	J++ in Mobile Apps	49.95
2	5241	JAVA First Steps	49.95
3	5248	What You Always Wanted to Know About Database, B...	49.95
4	5254	Coding Style for Maintenance	49.95

3) Given the database structure on page 426, please use SQL commands: create, insert, update, delete, and save to answer problems 1, 2, 4, 5, 6, 7, 8, and 9 (PAGES 427-428). Please show me the result of your query that you ran in MS SQL. I need to see one of your team's names depicted on top of the screenshot showing that you have used MS SQL to conduct these exercises.

1.



## 2. The Jawnsons



### 3. The Jawnsons

The screenshot displays the Microsoft SQL Server Management Studio interface. The title bar indicates the connection to 'LAPTOP-OFNIBKCT.master (LAPTOP-OFNIBKCT\alexw (61))'. The Object Explorer on the left shows the database structure, including the 'master' database and the 'EMP\_1' table. The main query window contains the following SQL script:

```
INSERT INTO EMP_1 (EMP_NUM, EMP_LNAME, EMP_FNAME, EMP_INITIAL, EMP_HIREDATE, JOB_CODE)
VALUES (103, 'Arbough', 'June', 'E', '01-Dec-96', 500),
(104, 'Ramoras', 'Anne', 'K', '15-Nov-87', 501),
(105, 'Johnson', 'Alice', 'K', '01-Feb-93', 502),
(106, 'Smithfield', 'William', 'I', '22-Jun-04', 500),
(107, 'Alonzo', 'Maria', 'D', '10-Oct-93', 500),
(108, 'Washington', 'Ralph', 'B', '22-Aug-91', 501),
(109, 'Smith', 'Larry', 'W', '18-Jul-97', 501);
```

The Messages pane at the bottom shows the execution results:

```
(7 rows affected)
Completion time: 2021-04-21T15:51:45.6338876-04:00
```

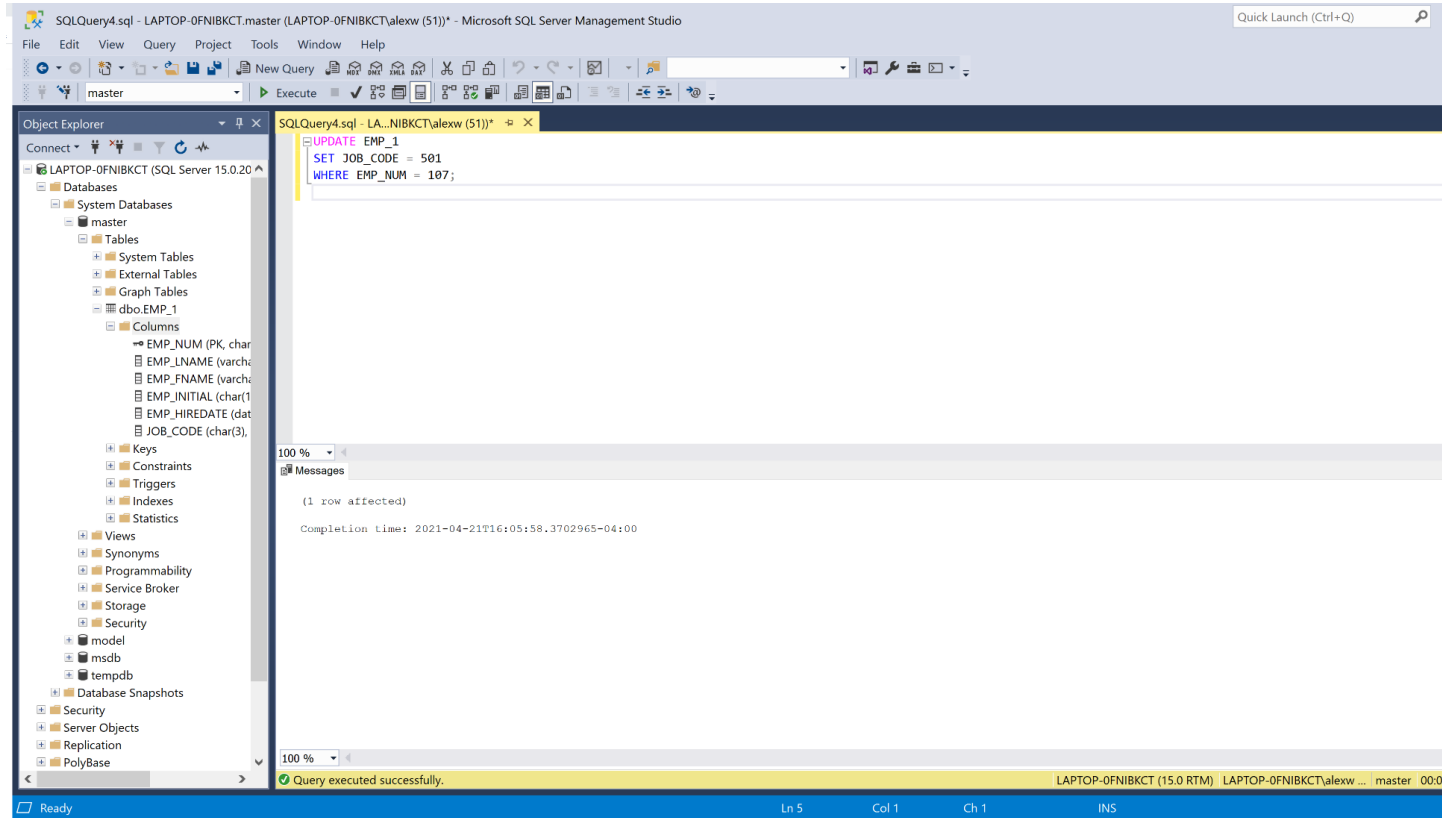
The status bar at the bottom indicates 'Query executed successfully.' and provides details about the execution: 'LAPTOP-OFNIBKCT (15.0 RTM) LAPTOP-OFNIBKCT\alexw ... master 00:00:00 0 rows'.

## 4. The Jawnsons

The screenshot shows the Microsoft SQL Server Management Studio interface. The title bar indicates the file is 'SQLQuery4.sql - LAPTOP-0FNIBKCT.master (LAPTOP-0FNIBKCT\alexw (51))' in the 'Microsoft SQL Server Management Studio' application. The menu bar includes File, Edit, View, Query, Project, Tools, Window, and Help. The toolbar contains icons for New Query, Execute, and other standard database operations. The Object Explorer on the left shows the database structure for 'LAPTOP-0FNIBKCT (SQL Server 15.0.20)'. It includes Databases, System Databases, master, Tables, System Tables, External Tables, Graph Tables, dbo.EMP\_1, Columns, Keys, Constraints, Triggers, Indexes, Statistics, Views, Synonyms, Programmability, Service Broker, Storage, Security, model, msdb, tempdb, Database Snapshots, Security, Server Objects, Replication, and PolyBase. The main query window shows the SQL query: `SELECT *  
FROM EMP_1`. The Results pane at the bottom displays the query output as a table with 9 rows and 6 columns: EMP\_NUM, EMP\_LNAME, EMP\_FNAME, EMP\_INITIAL, EMP\_HIREDATE, and JOB\_CODE. The status bar at the bottom indicates 'Query executed successfully.' and 'LAPTOP-0FNIBKCT (15.0 RTM) LAPTOP-0FNIBKCT\alexw ... master 00:00:00 9 rows'.

	EMP_NUM	EMP_LNAME	EMP_FNAME	EMP_INITIAL	EMP_HIREDATE	JOB_CODE
1	101	News	John	G	2000-11-08	502
2	102	Senior	David	H	1989-07-12	501
3	103	Arbough	June	E	1996-12-01	500
4	104	Ramoras	Anne	K	1987-11-15	501
5	105	Johnson	Alice	K	1993-02-01	502
6	106	Smithfield	William		2004-06-22	500
7	107	Alonzo	Maria	D	1993-10-10	500
8	108	Washington	Ralph	B	1981-08-22	501
9	109	Smith	Larry	W	1997-07-18	501

## 5. The Jawnsons





## 6. The Jawnsons

The screenshot displays the Microsoft SQL Server Management Studio interface. The title bar indicates the active window is 'SQLQuery4.sql - LAPTOP-0FNIBKCT.master (LAPTOP-0FNIBKCT\alewx (51)) - Microsoft SQL Server Management Studio'. The menu bar includes File, Edit, View, Query, Project, Tools, Window, and Help. The toolbar contains icons for various database operations. The Object Explorer on the left shows the server hierarchy: LAPTOP-0FNIBKCT (SQL Server 15.0.20) > Databases > master > Tables > dbo.EMP\_1. The main query editor shows the following SQL statement:

```
DELETE FROM EMP_1
WHERE EMP_LNAME = 'Smithfield'
AND EMP_FNAME = 'William'
AND EMP_HIREDATE = '22-June-04'
AND JOB_CODE = '500';
```

The Messages pane at the bottom shows the execution results:

```
(1 row affected)
Completion Time: 2021-04-21T16:08:23.4162752-04:00
```

The status bar at the bottom indicates 'Query executed successfully.' and shows the current position in the query: 'Ln 5 Col 1 Ch 1 INS'. The bottom right corner of the status bar displays 'LAPTOP-0FNIBKCT (15.0 RTM) LAPTOP-0FNIBKCT\alewx ... master 00:00:00 0 rows'.

## 7. The Jawnsons

The screenshot displays the Microsoft SQL Server Management Studio (SSMS) interface. The title bar indicates the active window is 'SQLQuery4.sql - LAPTOP-0FNIBKCT.master (LAPTOP-0FNIBKCT\alewx (51))'.

**Object Explorer:** The left pane shows the 'LAPTOP-0FNIBKCT (SQL Server 15.0.20)' database. Under 'Databases', the 'master' database is expanded, showing 'Tables' and 'Columns'. The 'Columns' list includes 'EMP\_NUM (PK, char)', 'EMP\_LNAME (varchar)', 'EMP\_FNAME (varchar)', 'EMP\_INITIAL (char(1))', 'EMP\_HIREDATE (datetime)', and 'JOB\_CODE (char(3))'. Other categories like Keys, Constraints, Triggers, Indexes, Statistics, Views, Synonyms, Programmability, Service Broker, Storage, Security, model, msdb, tempdb, Database Snapshots, Security, Server Objects, Replication, and PolyBase are also visible.

**Query Editor:** The central pane shows the SQL query: `CREATE TABLE EMP_2 SELECT * FROM EMP_1;`

**Messages:** The bottom pane displays the execution results:   
100 %  
Messages  
(1 row affected)  
Completion time: 2021-04-21T16:08:23.4162752-04:00

**Status Bar:** The bottom status bar shows 'Query executed successfully.' and 'LAPTOP-0FNIBKCT (15.0 RTM) LAPTOP-0FNIBKCT\alewx ... master 00:00:00 0 rows'.

## 8. The Jawnsons

The screenshot displays the Microsoft SQL Server Management Studio (SSMS) interface. The title bar indicates the connection is to 'SQLQuery4.sql - LAPTOP-0FNIBKCT.master (LAPTOP-0FNIBKCT\alexw (51))'.

**Object Explorer:** The left pane shows the database structure for 'LAPTOP-0FNIBKCT (SQL Server 15.0.20)'. Under 'Databases', 'master' is expanded, showing 'Tables' and 'Columns'. The 'EMP\_1' table is visible under 'dbo'.

**SQL Query Editor:** The main window contains the following SQL script:

```
ALTER TABLE EMP_2
ADD EMP_PCT DECIMAL (4, 2) ,
ADD PROJ_NUM CHAR(3);
```

**Messages:** The bottom pane shows the execution results:

```
(1 row affected)
Completion time: 2021-04-21T16:08:23.4162752-04:00
```

**Status Bar:** The bottom status bar indicates 'Query executed successfully.' and shows the execution time as '00:00:00' with '0 rows' affected.

## 9. The Jawnsons

