데이터베이스 과제4

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제출날짜:2022-05-10

예제1

```
    return true;

id DBDisconnect()

    SQLDisconnect(hDbc);                    // Disconnect from the SQL Server
    SQLFreeHandle(SQL_HANDLE_DBC, hDbc);    // Free the Connection Handle
    SQLFreeHandle(SQL_HANDLE_ENV, hEnv);    // Free the Environment Handle


t main(int argc, char* argv[])

    if (DBConnect() == true) {
        printf("Connection Success!!\n");
        static SQLCHAR query[100];
        SQLHSTMT hStmt;
        if (SQLAllocHandle(SQL_HANDLE_STMT, hDbc, &hStmt) == SQL_SUCCESS) {
            sprintf((char*)query, "INSERT INTO DEPARTMENT VALUES(6,'IT',15)");
            SQLExecDirectA(hStmt, query, SQL_NTS);

            SQLCloseCursor(hStmt);
            SQLFreeHandle(SQL_HANDLE_STMT, hStmt);
        }
        DBDisconnect();
    }
    else {
        printf("Fail to Connect!!\n");
    }
    return 0;
    /*
            SQLCHAR          [10].
```
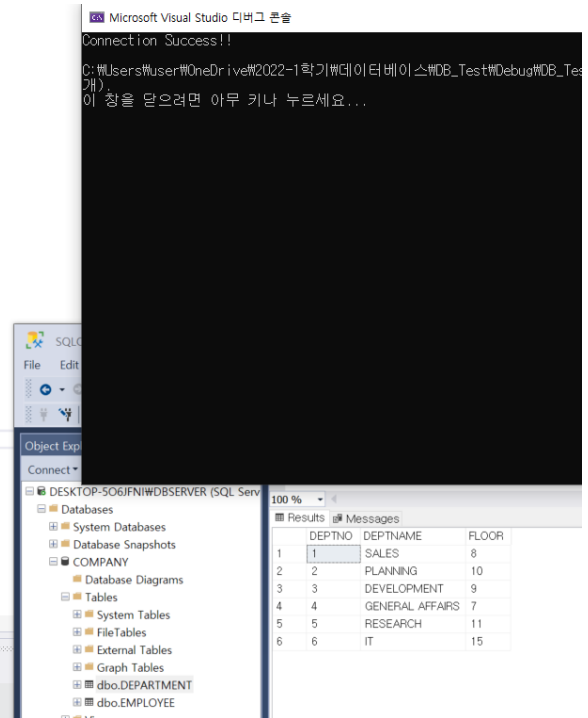
콘솔 출력:
```
Connection Success!!

C:\Users\user\OneDrive\2022-1학기\데이터베이스\DB_Test\Debug\DB_Tes...
개).
이 창을 닫으려면 아무 키나 누르세요...
```

Results 테이블:

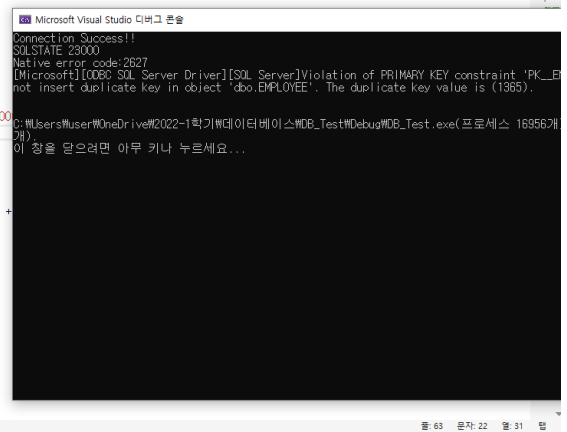|	DEPTNO	DEPTNAME	FLOOR
1	1	SALES	8
2	2	PLANNING	10
3	3	DEVELOPMENT	9
4	4	GENERAL AFFAIRS	7
5	5	RESEARCH	11
6	6	IT	15

예제2

```
        SQLDisconnect(hDbc);                    // Disconnect from the SQL Server
        SQLFreeHandle(SQL_HANDLE_DBC, hDbc);    // Free the Connection Handle
        SQLFreeHandle(SQL_HANDLE_ENV, hEnv);    // Free the Environment Handle
    }

int main(int argc, char* argv[])
{
    if (DBConnect() == true) {
        printf("Connection Success!!\n");
        static SQLCHAR query[100];
        SQLHSTMT hStmt;
        if (SQLAllocHandle(SQL_HANDLE_STMT, hDbc, &hStmt) == SQL_SUCCESS) {
            sprintf((char*)query, "INSERT INTO EMPLOYEE VALUES(1365,'S.JEROME','STAFF',3426,35000
            if (SQLExecDirectA(hStmt, query, SQL_NTS) == SQL_ERROR) {
                SQLCHAR buffer[SQL_MAX_MESSAGE_LENGTH + 1];
                SQLCHAR sqlstate[SQL_SQLSTATE_SIZE + 1];
                SQLINTEGER sqlcode;
                SQLSMALLINT length;
                SQLErrorA(hEnv, hDbc, hStmt, sqlstate, &sqlcode, buffer, SQL_MAX_MESSAGE_LENGTH +
                printf("SQLSTATE %s\n", sqlstate);
                printf("Native error code:%ld\n", sqlcode);
                printf("%s\n\n", buffer);
            }

            SQLCloseCursor(hStmt);
            SQLFreeHandle(SQL_HANDLE_STMT, hStmt);
        }
        DBDisconnect();
    }
    else {
        printf("Fail to Connect!!\n");
    }
```

콘솔 출력:
```
Connection Success!!
SQLSTATE 23000
Native error code:2627
[Microsoft][ODBC SQL Server Driver][SQL Server]Violation of PRIMARY KEY constraint 'PK__E
not insert duplicate key in object 'dbo.EMPLOYEE'. The duplicate key value is (1365).

C:\Users\user\OneDrive\2022-1학기\데이터베이스\DB_Test\Debug\DB_Test.exe(프로세스 16956개
개)
이 창을 닫으려면 아무 키나 누르세요...
```
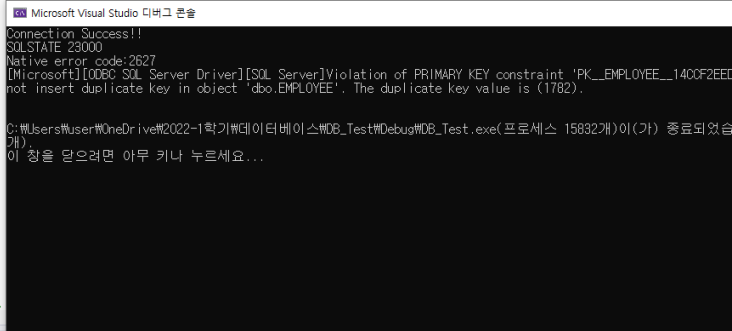
예제3

```c
int main(int argc, char* argv[])
{
    if (DBConnect() == true) {
        printf("Connection Success!!\n");
        static SQLCHAR query[100];
        SQLHSTMT hStmt;
        if (SQLAllocHandle(SQL_HANDLE_STMT, hDbc, &hStmt) == SQL_SUCCESS) {
            sprintf((char*)query, "INSERT INTO EMPLOYEE VALUES(1782,'S.JEROME','STAFF',3426,3500000,3)");
            if (SQLExecDirectA(hStmt, query, SQL_NTS) == SQL_ERROR) {
                SQLCHAR buffer[SQL_MAX_MESSAGE_LENGTH + 1];
                SQLCHAR sqlstate[SQL_SQLSTATE_SIZE + 1];
                SQLINTEGER sqlcode;
                SQLSMALLINT length;
                SQLErrorA(hEnv, hDbc, hStmt, sqlstate, &sqlcode, buffer, SQL_MAX_MESSAGE_LENGTH + 1, &length);
                printf("SQLSTATE %s\n", sqlstate);
                printf("Native error code:%ld\n", sqlcode);
                printf("%s\n\n", buffer);
            }

            SQLCloseCursor(hStmt);
            SQLFreeHandle(SQL_HANDLE_STMT, hStmt);
        }
        DBDisconnect();
    }
    else {
        printf("Fail to Connect!!\n");
    }
    return 0;
    /*
            SQLCHAR empname[10];
            SQLCHAR deptname[20];
            SQLBindCol(hStmt, 1, SQL_C_CHAR, empname, 10, NULL);
            SQLBindCol(hStmt, 2, SQL_C_CHAR, deptname, 20, NULL);
```

```
Microsoft Visual Studio 디버그 콘솔
Connection Success!!
SQLSTATE 23000
Native error code:2627
[Microsoft][ODBC SQL Server Driver][SQL Server]Violation of PRIMARY KEY constraint 'PK__EMPLOYEE__14CCF2EED
not insert duplicate key in object 'dbo.EMPLOYEE'. The duplicate key value is (1782).

C:\Users\user\OneDrive\2022-1학기\데이터베이스\DB_Test\Debug\DB_Test.exe(프로세스 15832개)이(가) 종료되었습
개).
이 창을 닫으려면 아무 키나 누르세요...
```
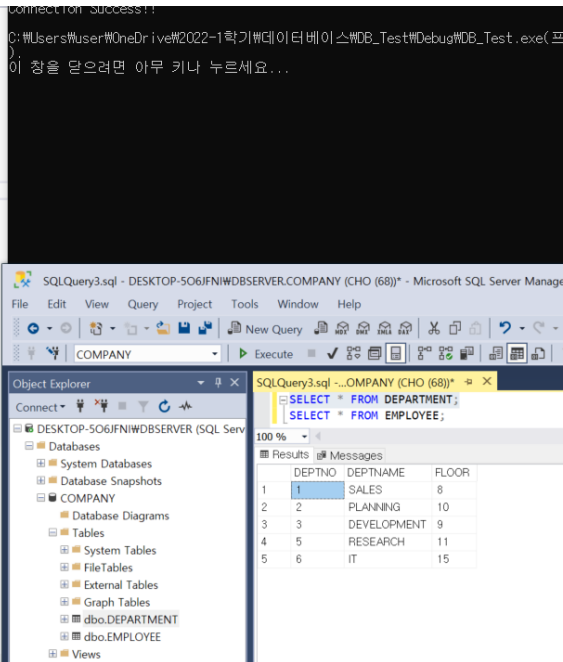
예제4

```c
int main(int argc, char* argv[])
{
    if (DBConnect() == true) {
        printf("Connection Success!!\n");
        static SQLCHAR query[100];
        SQLHSTMT hStmt;
        if (SQLAllocHandle(SQL_HANDLE_STMT, hDbc, &hStmt) == SQL_SUCCESS) {
            sprintf((char*)query, "DELETE FROM DEPARTMENT WHERE DEPTNO=4");
            SQLExecDirectA(hStmt, query, SQL_NTS);

            SQLCloseCursor(hStmt);
            SQLFreeHandle(SQL_HANDLE_STMT, hStmt);
        }
        DBDisconnect();
    }
    else {
        printf("Fail to Connect!!\n");
    }
    return 0;
    /*
            SQLCHAR empname[10];
            SQLCHAR deptname[20];
            SQLBindCol(hStmt, 1, SQL_C_CHAR, empname, 10, NULL);
            SQLBindCol(hStmt, 2, SQL_C_CHAR, deptname, 20, NULL);

            while (SQLFetch(hStmt) != SQL_NO_DATA) {
                printf("%s  ", empname);
                printf("%s\n", deptname);
            }
    */
    /*
            if (SQLExecDirectA(hStmt, query, SQL_NTS) == SQL_ERROR) {
```

```
Connection Success!!

C:\Users\user\OneDrive\2022-1학기\데이터베이스\DB_Test\Debug\DB_Test.exe(프
).
이 창을 닫으려면 아무 키나 누르세요...
```

SQLQuery3.sql - DESKTOP-5O6JFNI\DBSERVER.COMPANY (CHO (68))* - Microsoft SQL Server Manage

File Edit View Query Project Tools Window Help

COMPANY ▶ Execute

```sql
SELECT * FROM DEPARTMENT;
SELECT * FROM EMPLOYEE;
```

Object Explorer

Connect

DESKTOP-5O6JFNI\DBSERVER (SQL Serv
- Databases
  - System Databases
  - Database Snapshots
  - COMPANY
    - Database Diagrams
    - Tables
      - System Tables
      - FileTables
      - External Tables
      - Graph Tables
      - dbo.DEPARTMENT
      - dbo.EMPLOYEE
    - Views

	DEPTNO	DEPTNAME	FLOOR
1	1	SALES	8
2	2	PLANNING	10
3	3	DEVELOPMENT	9
4	5	RESEARCH	11
5	6	IT	15

예제5

```c
    SQLDisconnect(hDbc);                         // Disconnect from the SQL Server
    SQLFreeHandle(SQL_HANDLE_DBC, hDbc);         // Free the Connection Handle
    SQLFreeHandle(SQL_HANDLE_ENV, hEnv);         // Free the Environment Handle
}

int main(int argc, char* argv[])
{
    if (DBConnect() == true) {
        printf("Connection Success!!\n");
        static SQLCHAR query[100];
        SQLHSTMT hStmt;
        if (SQLAllocHandle(SQL_HANDLE_STMT, hDbc, &hStmt) == SQL_SUCCESS) {
            sprintf((char*)query, "DELETE FROM EMPLOYEE WHERE EMPNAME='C.KIM'");
            SQLExecDirectA(hStmt, query, SQL_NTS);

            SQLCloseCursor(hStmt);
            SQLFreeHandle(SQL_HANDLE_STMT, hStmt);
        }
        DBDisconnect();
    }
    else {
        printf("Fail to Connect!!\n");
    }
    return 0;
    /*
        SQLCHAR empname[10];
        SQLCHAR deptname[20];
        SQLBindCol(hStmt, 1, SQL_C_CHAR, empname, 10, NULL);
        SQLBindCol(hStmt, 2, SQL_C_CHAR, deptname, 20, NULL);

        while (SQLFetch(hStmt) != SQL_NO_DATA) {
```
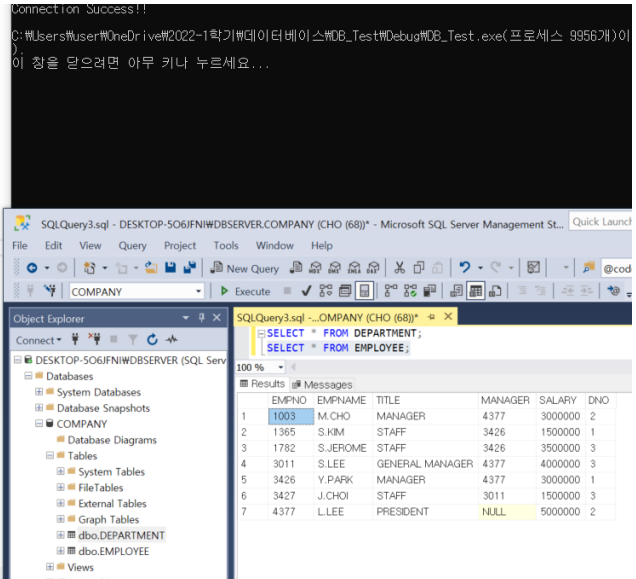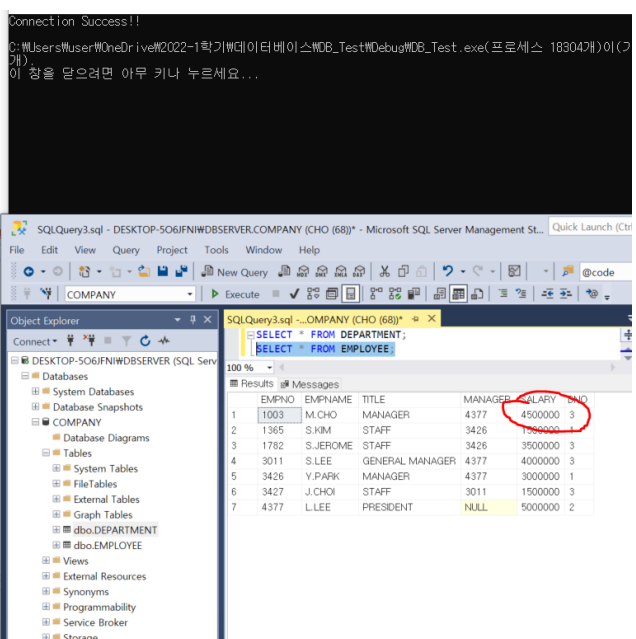

	EMPNO	EMPNAME	TITLE	MANAGER	SALARY	DNO
1	1003	M.CHO	MANAGER	4377	3000000	2
2	1365	S.KIM	STAFF	3426	1500000	1
3	1782	S.JEROME	STAFF	3426	3500000	3
4	3011	S.LEE	GENERAL MANAGER	4377	4000000	3
5	3426	Y.PARK	MANAGER	4377	3000000	1
6	3427	J.CHOI	STAFF	3011	1500000	3
7	4377	L.LEE	PRESIDENT	NULL	5000000	2

예제6

```c
    SQLDisconnect(hDbc);                         // Disconnect from the SQL Server
    SQLFreeHandle(SQL_HANDLE_DBC, hDbc);         // Free the Connection Handle
    SQLFreeHandle(SQL_HANDLE_ENV, hEnv);         // Free the Environment Handle
}

int main(int argc, char* argv[])
{
    if (DBConnect() == true) {
        printf("Connection Success!!\n");
        static SQLCHAR query[100];
        SQLHSTMT hStmt;
        if (SQLAllocHandle(SQL_HANDLE_STMT, hDbc, &hStmt) == SQL_SUCCESS) {
            sprintf((char*)query, "UPDATE EMPLOYEE SET DNO=3, SALARY=SALARY*1.5
            SQLExecDirectA(hStmt, query, SQL_NTS);

            SQLCloseCursor(hStmt);
            SQLFreeHandle(SQL_HANDLE_STMT, hStmt);
        }
        DBDisconnect();
    }
    else {
        printf("Fail to Connect!!\n");
    }
    return 0;
    /*
        SQLCHAR empname[10];
        SQLCHAR deptname[20];
        SQLBindCol(hStmt, 1, SQL_C_CHAR, empname, 10, NULL);
        SQLBindCol(hStmt, 2, SQL_C_CHAR, deptname, 20, NULL);

        while (SQLFetch(hStmt) != SQL_NO_DATA) {
```
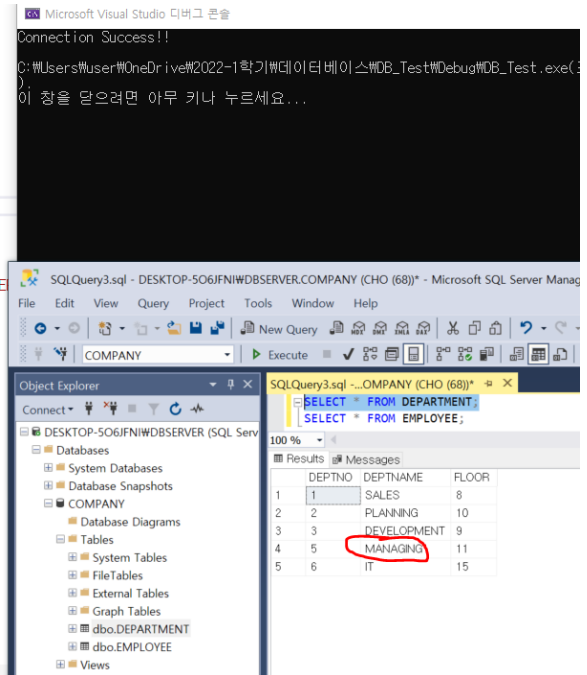

	EMPNO	EMPNAME	TITLE	MANAGER	SALARY	DNO
1	1003	M.CHO	MANAGER	4377	4500000	3
2	1365	S.KIM	STAFF	3426	1500000	1
3	1782	S.JEROME	STAFF	3426	3500000	3
4	3011	S.LEE	GENERAL MANAGER	4377	4000000	3
5	3426	Y.PARK	MANAGER	4377	3000000	1
6	3427	J.CHOI	STAFF	3011	1500000	3
7	4377	L.LEE	PRESIDENT	NULL	5000000	2

예제7


```
id DBDisconnect()

    SQLDisconnect(hDbc);                        // Disconnect from the SQL Server
    SQLFreeHandle(SQL_HANDLE_DBC, hDbc);        // Free the Connection Handle
    SQLFreeHandle(SQL_HANDLE_ENV, hEnv);        // Free the Environment Handle


t main(int argc, char* argv[])

    if (DBConnect() == true) {
        printf("Connection Success!!\n");
        static SQLCHAR query[100];
        SQLHSTMT hStmt;
        if (SQLAllocHandle(SQL_HANDLE_STMT, hDbc, &hStmt) == SQL_SUCCESS) {
            sprintf((char*)query, "UPDATE DEPARTMENT SET DEPTNAME='MANAGING' WHE
            SQLExecDirectA(hStmt, query, SQL_NTS);

            SQLCloseCursor(hStmt);
            SQLFreeHandle(SQL_HANDLE_STMT, hStmt);
        }
        DBDisconnect();
    }
    else {
        printf("Fail to Connect!!\n");
    }
    return 0;
    /*
        SQLCHAR empname[10];
        SQLCHAR deptname[20];
        SQLBindCol(hStmt, 1, SQL_C_CHAR, empname, 10, NULL);
        SQLBindCol(hStmt, 2, SQL_C_CHAR, deptname, 20, NULL);

        while (SQLFetch(hStmt) != SQL_NO_DATA) {
```

문제가 검색되지 않음

예제8


```
    SQLDisconnect(hDbc);                        // Disconnect from the SQL Server
    SQLFreeHandle(SQL_HANDLE_DBC, hDbc);        // Free the Connection Handle
    SQLFreeHandle(SQL_HANDLE_ENV, hEnv);        // Free the Environment Handle
    }

int main(int argc, char* argv[])
{
    if (DBConnect() == true) {
        printf("Connection Success!!\n");
        static SQLCHAR query[100];
        SQLHSTMT hStmt;
        int DEPTNO, FLOOR;
        char deptname[30];

        printf("Input the DEPARTMENT Number : ");
        scanf("%d", &DEPTNO);
        printf("Input the DEPARTMENT Name : ");
        scanf("%s", deptname);
        printf("Input the DEPARTMENT Floor : ");
        scanf("%d", &FLOOR);

        if (SQLAllocHandle(SQL_HANDLE_STMT, hDbc, &hStmt) == SQL_SUCCESS) {
            sprintf((char*)query, "INSERT INTO DEPARTMENT VALUES(%d,'%s',%d)", DE
            SQLExecDirectA(hStmt, query, SQL_NTS);

            SQLCloseCursor(hStmt);
            SQLFreeHandle(SQL_HANDLE_STMT, hStmt);
        }
        DBDisconnect();
    }
    else {
        printf("Fail to Connect!!\n");
    }
    return 0;
```
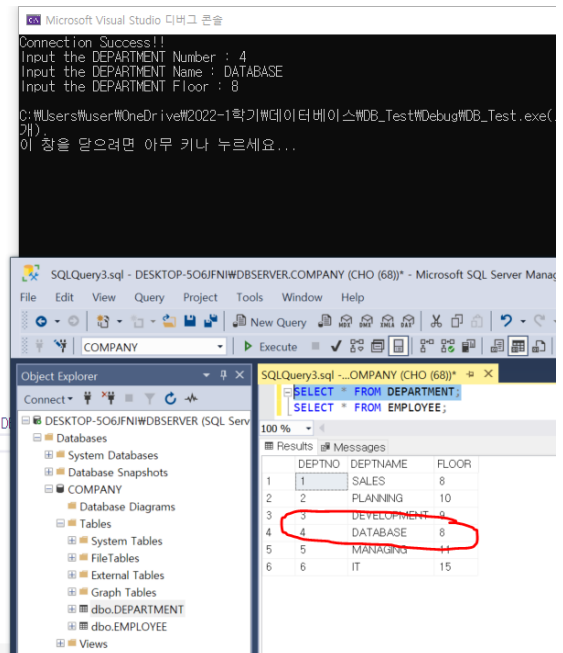
예제9

```c
        SQLFreeHandle(SQL_HANDLE_DBC, hDbc);    // Free the Connection Handle
        SQLFreeHandle(SQL_HANDLE_ENV, hEnv);    // Free the Environment Handle
}

int main(int argc, char* argv[])
{
    if (DBConnect() == true) {
        printf("Connection Success!!\n");
        static SQLCHAR query[100];
        SQLHSTMT hStmt;
        char new_deptname[20], before_deptname[20];

        printf("Input the Before DEPTNAME : ");
        scanf("%s", before_deptname);
        printf("Input the New DEPTNAME : ");
        scanf("%s", new_deptname);

        if (SQLAllocHandle(SQL_HANDLE_STMT, hDbc, &hStmt) == SQL_SUCCESS) {
            sprintf((char*)query, "UPDATE DEPARTMENT SET DEPTNAME='%s' WHERE
            SQLExecDirectA(hStmt, query, SQL_NTS);

            SQLCloseCursor(hStmt);
            SQLFreeHandle(SQL_HANDLE_STMT, hStmt);
        }
        DBDisconnect();
    }
    else {
        printf("Fail to Connect!!\n");
    }
    return 0;
    /*
            SQLCHAR empname[10];
            SQLCHAR deptname[20];
```


Microsoft Visual Studio 디버그 콘솔

```
Connection Success!!
Input the Before DEPTNAME : DATABASE
Input the New DEPTNAME : DB

C:\Users\user\OneDrive\2022-1학기\데이터베이스\DB_Test\Debug\DB_Test
개).
이 창을 닫으려면 아무 키나 누르세요...
```

SQLQuery3.sql - DESKTOP-5O6JFNI\DBSERVER.COMPANY (CHO (68))* - Microsoft SQL Server Man

File   Edit   View   Query   Project   Tools   Window   Help

COMPANY   ▶ Execute

```sql
SELECT * FROM DEPARTMENT;
SELECT * FROM EMPLOYEE;
```

	DEPTNO	DEPTNAME	FLOOR
1	1	SALES	8
2	2	PLANNING	10
3	3	DEVELOPMENT	9
4	4	DB	8
5	5	MANAGING	11
6	6	IT	15

예제10

	EMPNO	EMPNAME	TITLE	MANAGER	SALARY	DNO
1	1003	M.CHO	MANAGER	4377	4500000	3
2	1365	S.KIM	STAFF	3426	1500000	1
3	1782	S.JEROME	STAFF	3426	3500000	3
4	3011	S.LEE	GENERAL MANAGER	4377	4000000	3
5	3426	Y.PARK	MANAGER	4377	3000000	1
6	3427	J.CHOI	STAFF	3011	1500000	3
7	4377	L.LEE	PRESIDENT	NULL	5000000	2

```
        SQLFreeHandle(SQL_HANDLE_DBC, hDbc);    // Free the Connection Handle
        SQLFreeHandle(SQL_HANDLE_ENV, hEnv);    // Free the Environment Handle
}

int main(int argc, char* argv[])
{
    if (DBConnect() == true) {
        printf("Connection Success!!\n");
        static SQLCHAR query[100];
        SQLHSTMT hStmt;
        char empno[20];

        printf("Input the EMPNO : ");
        scanf("%s", empno);

        if (SQLAllocHandle(SQL_HANDLE_STMT, hDbc, &hStmt) == SQL_SUCCESS) {
            sprintf((char*)query, "DELETE FROM EMPLOYEE WHERE EMPNO = '%s'"
            SQLExecDirectA(hStmt, query, SQL_NTS);

            SQLCloseCursor(hStmt);
            SQLFreeHandle(SQL_HANDLE_STMT, hStmt);
        }
        DBDisconnect();
    }
    else {
        printf("Fail to Connect!!\n");
    }
    return 0;
    /*
            SQLCHAR empname[10];
            SQLCHAR deptname[20];
            SQLBindCol(hStmt, 1, SQL_C_CHAR, empname, 10, NULL);
            SQLBindCol(hStmt, 2, SQL_C_CHAR, deptname, 20, NULL);
```

Microsoft Visual Studio 디버그 콘솔

```
Connection Success!!
Input the EMPNO : 1782

C:\Users\user\OneDrive\2022-1학기\데이터베이스\DB_Test\Debug\DB_Test.exe(프로세스 224
개).
이 창을 닫으려면 아무 키나 누르세요...
```

SQLQuery3.sql - DESKTOP-5O6JFNI\DBSERVER.COMPANY (CHO (68))* - Microsoft SQL Server Management St...

File Edit View Query Project Tools Window Help

COMPANY

```
SELECT * FROM DEPARTMENT;
SELECT * FROM EMPLOYEE;
```

Object Explorer

Connect

DESKTOP-5O6JFNI\DBSERVER (SQL Serv
- Databases
  - System Databases
  - Database Snapshots
  - COMPANY
    - Database Diagrams
    - Tables
      - System Tables
      - FileTables
      - External Tables
      - Graph Tables
      - dbo.DEPARTMENT
      - dbo.EMPLOYEE
  - Views
  - External Resources

	EMPNO	EMPNAME	TITLE	MANAGER	SALARY	DNO
1	1003	M.CHO	MANAGER	4377	4500000	3
2	1365	S.KIM	STAFF	3426	1500000	1
3	3011	S.LEE	GENERAL MANAGER	4377	4000000	3
4	3426	Y.PARK	MANAGER	4377	3000000	1
5	3427	J.CHOI	STAFF	3011	1500000	3
6	4377	L.LEE	PRESIDENT	NULL	5000000	2

예제11

```
if (DBConnect() == true) {
    printf("Connection Success!!\n");
    static SQLCHAR query[100];
    SQLHSTMT hStmt;
    int deptno, floor;
    char deptname[20];

    printf("Input the DEPTNO : ");
    scanf("%d", &deptno);
    printf("Input the DEPTNAME : ");
    scanf("%s", deptname);
    printf("Input the FLOOR : ");
    scanf("%d", &floor);

    if (SQLAllocHandle(SQL_HANDLE_STMT, hDbc, &hStmt) == SQL_SUCCESS) {
        sprintf((char*)query, "INSERT INTO DEPARTMENT VALUES(%d, '%s', %
        SQLExecDirectA(hStmt, query, SQL_NTS);

        sprintf((char*)query, "SELECT * FROM DEPARTMENT");
        SQLExecDirectA(hStmt, query, SQL_NTS);

        SQLBindCol(hStmt, 1, SQL_C_LONG, &deptno, 0, NULL);
        SQLBindCol(hStmt, 2, SQL_C_CHAR, deptname, 20, NULL);
        SQLBindCol(hStmt, 3, SQL_C_LONG, &floor, 0, NULL);

        while (SQLFetch(hStmt) != SQL_NO_DATA) {
            printf("%-5d", deptno);
            printf("%-3s", deptname);
            printf("%d\n", floor);
        }

        SQLCloseCursor(hStmt);
        SQLFreeHandle(SQL_HANDLE_STMT, hStmt);
```
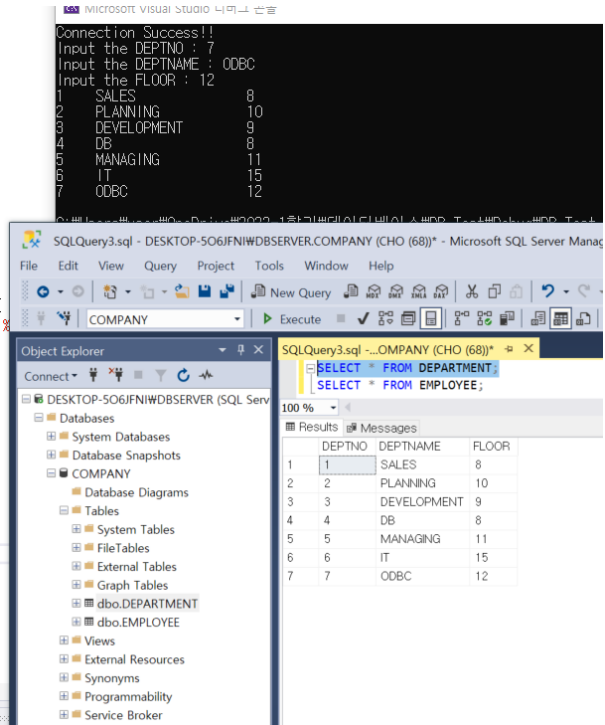

예제12

```
                 SQLRETURN retcode;
    SQLSMALLINT numCols = -1;

    if (SQLAllocHandle(SQL_HANDLE_STMT, hDbc, &hStmt) == SQL_SUCCESS) {
        sprintf((char*)query, "SELECT * FROM DEPARTMNT");
        retcode = SQLExecDirectA(hStmt, query, SQL_NTS);

        if (retcode == SQL_ERROR || retcode == SQL_NO_DATA_FOUND) {
            printf("Query Execute Error\n");
            return -1;
        }

        SQLCloseCursor(hStmt);
        SQLFreeHandle(SQL_HANDLE_STMT, hStmt);
    }
    DBDisconnect();
}
else {
    printf("Fail to Connect!!\n");
}
return 0;
/*
        SQLCHAR empname[10];
        SQLCHAR deptname[20];
        SQLBindCol(hStmt, 1, SQL_C_CHAR, empname, 10, NULL);
        SQLBindCol(hStmt, 2, SQL_C_CHAR, deptname, 20, NULL);

        while (SQLFetch(hStmt) != SQL_NO_DATA) {
            printf("%s  ", empname);
            printf("%s\n", deptname);
```
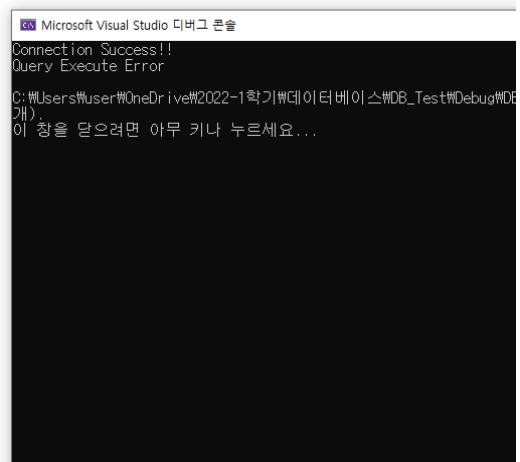
예제13

```
SQLHSTMT hStmt;
SQLRETURN retcode;

SQLCHAR ColumnName[30][30];
SQLSMALLINT ColumnNameLen[30];
SQLSMALLINT ColumnDataType[30];
SQLULEN ColumnDataSize[30];
SQLSMALLINT ColumnDataDigits[30];
SQLSMALLINT ColumnDataNullable[30];

SQLSMALLINT numCols = -1;

if (SQLAllocHandle(SQL_HANDLE_STMT, hDbc, &hStmt) == SQL_SUCCESS) {
    sprintf((char*)query, "SELECT * FROM DEPARTMENT");
    retcode = SQLExecDirectA(hStmt, query, SQL_NTS);

    if (retcode == SQL_ERROR || retcode == SQL_NO_DATA_FOUND) {
        printf("Query Execute Error\n");
        return -1;
    }

    SQLNumResultCols(hStmt, &numCols);
    for (int i = 0; i < numCols; i++) {
        SQLDescribeColA(
            hStmt,
            i + 1,
            ColumnName[i],
            30,
            &ColumnNameLen[i],
            &ColumnDataType[i],
            &ColumnDataSize[i],
            &ColumnDataDigits[i],
            &ColumnDataNullable[i]);
```

```
Microsoft Visual Studio 디버그 콘솔

Connection Success!!

Column : 1
Column Name : DEPTNO
 Column Name Len : 6
 SQL Data Type : 4
 Data Size : 10

Column : 2
Column Name : DEPTNAME
 Column Name Len : 8
 SQL Data Type : 1
 Data Size : 20

Column : 3
Column Name : FLOOR
 Column Name Len : 5
 SQL Data Type : 4
 Data Size : 10

C:\Users\user\OneDrive\2022-1학기\데이터베이스\DB_Test\Debug\DB_Test.exe(프로세스 1032
개).
이 창을 닫으려면 아무 키나 누르세요...
```

> 문제가 검색되지 않음

예제14

```
void DBDisconnect()
{
    SQLDisconnect(hDbc);                        // Disconnect from the SQL Server
    SQLFreeHandle(SQL_HANDLE_DBC, hDbc);        // Free the Connection Handle
    SQLFreeHandle(SQL_HANDLE_ENV, hEnv);        // Free the Environment Handle
}

int main(int argc, char* argv[])
{
    if (DBConnect() == true) {
        printf("Connection Success!!\n");
        static SQLCHAR query[100];
        SQLHSTMT hStmt;

        if (SQLAllocHandle(SQL_HANDLE_STMT, hDbc, &hStmt) == SQL_SUCCESS) {
            sprintf((char*)query, "UPDATE EMPLOYEE SET SALARY=SALARY*1.05 FR
            SQLExecDirectA(hStmt, query, SQL_NTS);

            SQLCloseCursor(hStmt);
            SQLFreeHandle(SQL_HANDLE_STMT, hStmt);
        }
        DBDisconnect();
    }
    else {
        printf("Fail to Connect!!\n");
    }
    return 0;
    /*
        SQLCHAR empname[10];
        SQLCHAR deptname[20];
        SQLBindCol(hStmt, 1, SQL_C_CHAR, empname, 10, NULL);
```

```
Microsoft Visual Studio 디버그 콘솔

Connection Success!!

C:\Users\user\OneDrive\2022-1학기\데이터베이스\DB_Test\Debug\DB_Test.exe(프로세스 12852개)
개).
이 창을 닫으려면 아무 키나 누르세요...
```

SQLQuery4.sql - DESKTOP-5O6JFNI\DBSERVER.COMPANY (CHO (63))* - Microsoft SQL Server Management St...   Quick Launch

File   Edit   View   Query   Project   Tools   Window   Help

COMPANY   ▶ Execute

Object Explorer

Connect

DESKTOP-5O6JFNI\DBSERVER (SQL Serv
  Databases
    System Databases
    Database Snapshots
    COMPANY
      Database Diagrams
      Tables
        System Tables
        FileTables
        External Tables
        Graph Tables
        dbo.DEPARTMENT

SQLQuery4.sql -...OMPANY (CHO (63))*
SELECT * FROM EMPLOYEE;

100 %

Results   Messages

	EMPNO	EMPNAME	TITLE	DNO	SALARY	FLOOR
1	1003	M.CHO	ASSISTANT MANAGER	2	2000000	NULL
2	2106	C.KIM	ASSISTANT MANAGER	2	2100000	NULL
3	3011	S.LEE	GENERAL MANAGER	1	3150000	NULL
4	3426	Y.PARK	MANAGER	3	2625000	9
5	3427	J.CHOI	STAFF	3	1500000	9

예제15

```
{
    SQLDisconnect(hDbc);                    // Disconnect from the SQL Server
    SQLFreeHandle(SQL_HANDLE_DBC, hDbc);    // Free the Connection Handle
    SQLFreeHandle(SQL_HANDLE_ENV, hEnv);    // Free the Environment Handle
}

int main(int argc, char* argv[])
{
    if (DBConnect() == true) {
        printf("Connection Success!!\n");
        static SQLCHAR query[100];
        SQLHSTMT hStmt;

        if (SQLAllocHandle(SQL_HANDLE_STMT, hDbc, &hStmt) == SQL_SUCCESS) {
            sprintf((char*)query, "DELETE PROJECT FROM EMPLOYEE AS E WHERE E
            //DELETE PROJECT FROM EMPLOYEE AS E
            //WHERE E.EMPNO=PROJECT.EMPNO AND E.TITLE <> 'ASSISTANT MANAGER'
            //AND PROJECT.TAKE_TIME<10
            SQLExecDirectA(hStmt, query, SQL_NTS);

            SQLCloseCursor(hStmt);
            SQLFreeHandle(SQL_HANDLE_STMT, hStmt);
        }
        DBDisconnect();
    }
    else {
        printf("Fail to Connect!!\n");
    }
    return 0;
    /*
            SQLCHAR empname[10];
```

Connection Success!!

C:\Users\user\OneDrive\2022-1학기\데이터베이스\DB_Test\Debug\DB_Test.exe(프로
).
이 창을 닫으려면 아무 키나 누르세요...

SQLQuery4.sql - DESKTOP-5O6JFNI\DBSERVER.COMPANY (CHO (63))* - Microsoft SQL Server Managemen

File   Edit   View   Query   Project   Tools   Window   Help

COMPANY   ▶ Execute

Object Explorer

Connect
DESKTOP-5O6JFNI\DBSERVER (SQL Serv
  Databases
    System Databases
    Database Snapshots
    COMPANY
      Database Diagrams
      Tables
        System Tables
        FileTables
        External Tables
        Graph Tables
        dbo.DEPARTMENT
      Views
    External Resources

SQLQuery4.sql -...OMPANY (CHO (63))*

```
SELECT * FROM PROJECT;
```

	PRONAME	EMPNO	TAKE_TIME
1	A	2106	10
2	A	3426	11
3	B	1003	6
4	B	3427	15