Working with SQL

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Compuklsary task1

```sql
1  /* Creating Attribute Name and Data TyPES*/
2
3  CREATE TABLE Student(
4    STU_NUM CHAR PRIMARY KEY,
5    STU_SNAME VARCHAR(15),
6    STU_FNAME VARCHAR(15),
7    STU_INITIAL CHAR(1),
8    STU_STARTDATE DATE,
9    COURSE_CODE CHAR(3),
10   PROJ_NUM INT
11 )
12
13 /* Entering first two rows*/
14 INSERT INTO Student
15   (STU_NUM, STU_SNAME, STU_FNAME, STU_INITIAL, STU_STARTDATE , COURSE_CODE, PROJ_NUM)
16 VALUES
17   (01, 'Snow', 'John', 'E', '05-Apr-14', '201', 6),
18   (02, 'Stark', 'Arya', 'C', '12-Jul-17', '305', 11);
19
20 /* Entering rest of the rows*/
21 INSERT INTO Student
22   (STU_NUM, STU_SNAME, STU_FNAME, STU_INITIAL, STU_STARTDATE , COURSE_CODE, PROJ_NUM)
23 VALUES
24   (03,'Lannister', 'Jamie', 'C', '05-Sep-12','101',2),
25   (04, 'Lannister', 'Cercei', 'J', '05-Sep-12', '101',2),
26   (05, 'Greyjoy', 'Theon', 'I','09-dEC-15', '402', 14),
27   (06, 'Tyrell', 'Margaery', 'Y', '12-Jul-17', '305',10),
28   (07, 'Baratheon', 'Tommen', 'R', '13-Jun-19', '201',5);
29
30 /*Now we know, which student number 7 has course code of 201, it need to be update to 304*/
31 SELECT *
32 FROM Student
33 WHERE STU_NUM = 7;
34
35 UPDATE student
36 SET COURSE_CODE = '304'
37 WHERE STU_NUM = 7;
38
39 /*Checking dataset*/
40 SELECT *
41 FROM student
42
43 /*SQL code to delete the row of the person named Jamie Lannister,
44 who started on 5 September 2012, whose course code is 101 and project
45 number is 2. Use logical operators to include all of the information given in
46 this problem.*/
47
48 DELETE student
49 WHERE STU_FNAME like '%Jamie%' and STU_SNAME like '%Lannister%'
50 and STU_STARTDATE='05-Sep-12' and COURSE_CODE = 101
51 and PROJ_NUM =2;
52
53
54 /* Write the SQL code that will change the PROJ_NUM to 14 for all those
55 students who started before 1 January 2016 and whose course code is at
56 least 201.
57  */
58  UPDATE student
59  SET PROJ_NUM = 14
60  WHERE STU_STARTDATE < '01-Jan-2016' and COURSE_CODE>=201;
61
62  /* SQL code that will delete all of the data inside a table, but not the
63 table itself.*/
64 DELETE from student WHERE STU_NUM = 1
65 DELETE student
66
67 /*the SQL code that will delete the Student table entirely*/
68 SELECT * FROM student
69 DROP TABLE student
70
71 /*Verifying the deleted Student table entirely*/
72 SELECT * FROM student
```

Compulasry task2

In [24]:

```python
#Importing SQLite3 Library
import sqlite3 as sql
#creating database
db = sql.connect('database_python_programming.db')
#Create a table called python_programming
cursor = db.cursor()
cursor.execute('''
    CREATE TABLE python_programming(id INTEGER PRIMARY KEY, name TEXT, grade INTEGER)
''')
db.commit()

#Insert the following new rows into the python_programming table:
#creating id, name and grade
id1 = 55
name1 = 'Clark Davis'
grade1 = 61
id2 = 66
name2 = 'Dennis Fredrickson'
grade2 = 88
id3 = 77
name3 = 'Jane Richards'
grade3 = 78
id4 = 12
name4 = 'Peyton Sawyer'
grade4 = 45
id5 = 2
name5 = 'Lucas Brooke'
grade5 = 99

#creating list of id, name and grade
students = [(id1,name1, grade1),(id2,name2, grade2),(id3,name3, grade3),(id4,name4, grade4),(id5,name5, grade5)]
#insert several user, use executemany and a list with the tuples.
cursor.executemany('''INSERT INTO python_programming(id, name,grade) VALUES(?,?,?)''', students)
db.commit()
cursor.execute('''SELECT id, name, grade FROM python_programming''')
print('Printing Tables from database')
result = cursor.fetchall()
for row in result:
    print(row)
#Select all records with a grade between 60 and 80
print()
print('Select all records with a grade between 60 and 80')
query = 'SELECT id, name, grade FROM python_programming WHERE grade BETWEEN 60 AND 80'
cursor.execute(query)
result = cursor.fetchall()
for row in result:
    print(row)
#Change Carl Davis's grade to 65
print()
print('Change Carl Davis's grade to 65.')
query = "UPDATE python_programming SET grade = 65 WHERE name = 'Clark Davis'"
cursor.execute(query)
db.commit()
query = "SELECT id, name, grade FROM python_programming WHERE name = 'Clark Davis'"
cursor.execute(query)
result = cursor.fetchone()
print(result)
#Delete Dennis Fredrickson's row.
print()
print('Delete Dennis Fredrickson's row.')
query = "DELETE FROM python_programming WHERE name = 'Dennis Fredrickson'"
cursor.execute(query)
db.commit()
cursor.execute('''SELECT id, name, grade FROM python_programming''')
result = cursor.fetchall()
for row in result:
    print(row)
#Change the grade of all people with an id below than 55
print()
print('Change the grade of all people with an id below than 55')
query = "UPDATE python_programming SET grade = 50 WHERE id < 55"
cursor.execute(query)
db.commit()
cursor.execute('''SELECT id, name, grade FROM python_programming''')
result = cursor.fetchall()
for row in result:
    print(row)
```

```
Printing Tables from database
(2, 'Lucas Brooke', 99)
(12, 'Peyton Sawyer', 45)
(55, 'Clark Davis', 61)
(66, 'Dennis Fredrickson', 88)
(77, 'Jane Richards', 78)

Select all records with a grade between 60 and 80
(55, 'Clark Davis', 61)
(77, 'Jane Richards', 78)

Change Carl Davis's grade to 65.
(55, 'Clark Davis', 65)

Delete Dennis Fredrickson's row.
(2, 'Lucas Brooke', 99)
(12, 'Peyton Sawyer', 45)
(55, 'Clark Davis', 65)
(77, 'Jane Richards', 78)

Change the grade of all people with an id below than 55
(2, 'Lucas Brooke', 50)
(12, 'Peyton Sawyer', 50)
(55, 'Clark Davis', 65)
(77, 'Jane Richards', 78)
```