Author: Kayla Bandy
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Assignment: Week 12
Program: WK12Bandy_SQL2.ipynb
Description: Notebook for textbook exercise 17.1, to complete five exercises.
A. Select all authors' last names from the authors table in descending order.
B. Select all book titles from the titles table in ascending order.
C. Use an inner join to select all the books for a specific author. Include the title, copyright year, and ISBN. Order the information alphabetically by title.
D. Insert a new author into the authors table.
E. Insert a new title for an author. Remember that the book must have an entry in the author_ISBN table and an entry in the titles table.

In [1]:
```
#Import needed libraries for SQL and dataset manipulation
import sqlite3
import pandas as pd
```

In [2]:
```
#Create connection with existing database file, books.db
connection = sqlite3.connect('books.db')
```

In [3]:
```
#Set option
pd.options.display.max_columns = 10
```

A. Select all authors' last names from the authors table in descending order.

In [4]:
```
#Select statement
pd.read_sql("""SELECT last
            FROM authors
            ORDER BY last DESC""",
            connection)
```

Out[4]:

	last
0	Wald
1	Quirk
2	Deitel
3	Deitel
4	Deitel

B. Select all book titles from the titles table in ascending order.

In [5]:
```
#Select statement
pd.read_sql("""SELECT title
            FROM titles
            ORDER BY title""",
            connection)
```

Out[5]:

	title
0	Android 6 for Programmers
1	Android How to Program
2	C How to Program
3	C++ How to Program
4	Internet & WWW How to Program
5	Intro to Python for CS and DS
6	Java How to Program
7	Visual Basic 2012 How to Program
8	Visual C# How to Program
9	Visual C++ How to Program

C. Use an inner join to select all the books for a specific author. Include the title, copyright year, and ISBN. Order the information alphabetically by title.

In [6]:
```
#Select statement
pd.read_sql("""SELECT title, copyright, c.ISBN
            , a.first AS 'Author First', a.last AS 'Author Last'
            FROM authors a
            INNER JOIN author_ISBN b ON a.ID = b.ID
            INNER JOIN titles c ON b.ISBN = c.ISBN
            WHERE first = 'Abbey' AND last = 'Deitel'
            ORDER BY title""",
            connection)
```

Out[6]:

	title	copyright	isbn	Author First	Author Last
0	Internet & WWW How to Program	2012	0132151006	Abbey	Deitel
1	Visual Basic 2012 How to Program	2014	0133406954	Abbey	Deitel

D. Insert a new author into the authors table.

In [7]:
```
#Create cursor from the connection
cursor = connection.cursor()
```

In [8]:
```
#Insert statement
cursor = cursor.execute(""" INSERT INTO authors (first, last)
                        VALUES('J.K.', 'Rowling')""")
```

In [9]:
```
#Select statement to check what was inserted
pd.read_sql("""SELECT *
            FROM authors""",
            connection)
```

Out[9]:

	id	first	last
0	1	Paul	Deitel
1	2	Harvey	Deitel
2	3	Abbey	Deitel
3	4	Dan	Quirk
4	5	Alexander	Wald
5	6	J.K.	Rowling

E. Insert a new title for an author. Remember that the book must have an entry in the author_ISBN table and an entry in the titles table.

In [10]:
```
#Reuse the cursor from Part D
#Insert statement into author_ISBN table
cursor = cursor.execute(""" INSERT INTO author_ISBN (id, isbn)
                        VALUES(6, '0439708184')""")
```

In [11]:
```
#Insert statement into titles table
cursor = cursor.execute(""" INSERT INTO titles (isbn, title, edition, copyright)
        VALUES('0439708184', 'Harry Potter and the Philosopher''s Stone', 1, '1998')""")
```

In [12]:
```
#Select statement to check what was inserted
pd.read_sql("""SELECT title, copyright, c.ISBN, a.ID as 'Author ID'
            , a.first AS 'Author First', a.last AS 'Author Last'
            FROM authors a
            INNER JOIN author_ISBN b ON a.ID = b.ID
            INNER JOIN titles c ON b.ISBN = c.ISBN
            WHERE title LIKE 'Harry%'
            ORDER BY title""",
            connection)
```

Out[12]:

	title	copyright	isbn	Author ID	Author First	Author Last
0	Harry Potter and the Philosopher's Stone	1998	0439708184	6	J.K.	Rowling

In [13]:
```
#Close the connection/close the database file
connection.close()
```