Homework 12 - Big Data

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CIS -2532 - NET 001

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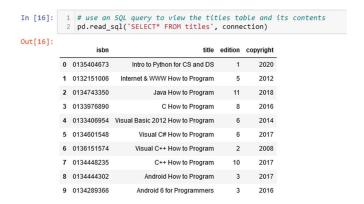
Outputs

Section 17.2.1: A Books Database

Execute an SQL query and return a DataFrame containing the query's results



Use an SQL query to view the titles table and its contents



Use SQL and pandas to view the five rows from the author_ISBN table



Exercise 17.1: Books Database

a) Select all authors' last names from the authors table in descending order

```
# use SQL query to return a dataframe with the query's results and sort in descending order by last name using SQL
               pd.read_sql("""

SELECT *
                            FROM authors
                            ORDER BY last DESC
                            """, connection)
Out[133]:
              id
                          last
                     first
           0 5 Alexander
                          Wald
           1 4
                     Dan Quirk
                    Paul Deitel
           3 2
                   Harvey Deitel
           4 3
                   Abbey Deitel
```

b) Select all book titles from the titles table in ascending order

```
# use SQL query to retrun a dataframe with the query's results and sort in ascending order with SQL
                pd.read_sql("
                              SELECT * FROM titles
             4
                              ORDER BY title ASC
                                "", connection)
             5
Out[120]:
                      isbn
                                                    title edition copyright
            0 0134289366
                                 Android 6 for Programmers
            1 0134444302
                                   Android How to Program
                                                                   2017
            2 0133976890
                                        C How to Program
                                                                   2016
            3 0134448235
                                      C++ How to Program
                                                                   2017
            4 0132151006
                             Internet & WWW How to Program
                                                                   2012
            5 0135404673
                                Intro to Python for CS and DS
                                                                   2020
            6 0134743350
                                      Java How to Program
                                                                   2018
            7 0133406954 Visual Basic 2012 How to Program
                                                                    2014
            8 0134601548
                                  Visual C# How to Program
                                                                   2017
            9 0136151574
                                 Visual C++ How to Program
                                                             2
                                                                   2008
```

c) Use an INNER JOIN to select all the books from a specific author. Include the title, copyright year, and ISBN. Order the information alphabetically by title.

```
# use SQL query to retrun a dataframe with the query's results
               firstname= 'Paul'
lastname = 'Deitel'
                def select_all_books_author(firstname, lastname):
                    return pd.read_sql(f"""
             8
                                          SELECT
             9
                                          authors.first,
            10
                                          authors.last,
            11
                                          titles.title,
                                          titles.copyright,
            13
                                          titles.isbn
            14
                                          FROM authors
            15
            16
            17
                                          INNER JOIN author_ISBN
            18
                                               ON authors.id = author_ISBN.id
            19
            20
                                          INNER JOIN titles
            21
                                               ON author_ISBN.isbn = titles.isbn
            22
            23
                                          WHERE authors.first LIKE '{firstname}' AND authors.last LIKE '{lastname}'
            24
            25
                                          ORDER BY title ASC
                                           """, connection)
            26
            28 #display output in Jupyter Notebook
            29 select_all_books_author(firstname, lastname)
Out[144]:
                                                 title copyright
                                                                    isbn
               first
                     last
            0 Paul
                                Android 6 for Programmers
                                                        2016 0134289366
            1 Paul Deitel
                                 Android Howto Program
                                                        2017 0134444302
            2 Paul Deitel
                                                        2016 0133976890
                                      C Howto Program
            3 Paul Deitel
                                    C++ Howto Program
                                                        2017 0134448235
                           Internet & WWW How to Program
            4 Paul Deitel
                                                        2012 0132151006
            5 Paul Deitel
                              Intro to Python for CS and DS
                                                        2020 0135404673
```

2018 0134743350

2014 0133406954

2017 0134601548

2008 0136151574

d) Insert a new author into the authors table

6 Paul Deitel

7 Paul Deitel

8 Paul Deitel

9 Paul Deitel

```
pd.read_sql("""
In [149]:
             1
                              SELECT * FROM authors
             3
                              """, connection)
Out[149]:
               id
                       first
                                last
            0
               1
                       Paul
                              Deitel
            1
               2
                     Harvey
                              Deitel
            2
               3
                     Abbey
                              Deitel
            3 4
                       Dan
                               Quirk
               5 Alexander
                               Wald
            5 6
                         Al Sweigart
```

Java Howto Program

Visual C# Howto Program

Visual C++ Howto Program

Visual Basic 2012 Howto Program

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

```
1 # insert new entry into titles table
            cursor = cursor.execute(f"""
                                       INSERT INTO titles(isbn, title, edition, copyright)
            3
            4
                                       VALUES('{isbn_book}', '{title}', '{edition}', '{copyright}')
            5
              pd.read_sql(f"""
In [243]:
                           SELECT * FROM titles
            3
                           WHERE isbn LIKE '{isbn_book}'
                           """, connection)
            4
Out[243]:
                   isbn
                                        title edition copyright
           0 1593275994 Automate the Boring Stuff
                                                         2015
```