

SQLite/create.py (Page 1 of 3)

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1: #!/usr/bin/env python
2:
3: #-----
4: # create.py
5: # Author: Bob Dondero
6: #-----
7:
8: import sys
9: import contextlib
10: import sqlite3
11:
12: #-----
13:
14: DATABASE_URL = 'file:bookstore.sqlite'
15:
16: def main():
17:
18:     if len(sys.argv) != 1:
19:         print(f'usage: python {sys.argv[0]}', file=sys.stderr)
20:         sys.exit(1)
21:
22:     try:
23:         with contextlib.closing(
24:             sqlite3.connect(_DATABASE_URL + '?mode=rtc',
25:                 isolation_level=None, uri=True)) as connection:
26:
27:             with contextlib.closing(connection.cursor()) as cursor:
28:
29:                 cursor.execute('PRAGMA foreign_keys = ON')
30:
31:                 #-----
32:
33:                 cursor.execute('DROP TABLE IF EXISTS orders')
34:                 cursor.execute('DROP TABLE IF EXISTS customers')
35:                 cursor.execute('DROP TABLE IF EXISTS zipcodes')
36:                 cursor.execute('DROP TABLE IF EXISTS authors')
37:                 cursor.execute('DROP TABLE IF EXISTS books')
38:
39:                 #-----
40:
41:                 cursor.execute('''
42:                     CREATE TABLE books (
43:                         isbn TEXT NOT NULL,
44:                         title TEXT,
45:                         quantity INTEGER,
46:                         PRIMARY KEY (isbn))
47:                     ''')
48:
49:                 cursor.execute('''
50:                     CREATE TABLE authors (
51:                         isbn TEXT NOT NULL,
52:                         author TEXT NOT NULL,
53:                         PRIMARY KEY (isbn, author),
54:                         FOREIGN KEY (isbn) REFERENCES books(isbn))
55:                     ''')
56:
57:                 cursor.execute('''
58:                     CREATE TABLE zipcodes (
59:                         zipcode TEXT NOT NULL,
60:                         city TEXT,
61:                         state TEXT,
62:                         PRIMARY KEY (zipcode))
63:                     ''')
64:
65:                 cursor.execute('''
66:                     CREATE TABLE customers (
67:                         custid TEXT NOT NULL,
68:                         custname TEXT,

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66:                         street TEXT,
67:                         zipcode TEXT,
68:                         PRIMARY KEY (custid),
69:                         FOREIGN KEY (zipcode)
70:                             REFERENCES zipcodes(zipcode))''')
71:                 cursor.execute('''
72:                     CREATE TABLE orders (
73:                         isbn TEXT NOT NULL,
74:                         custid TEXT NOT NULL,
75:                         quantity INTEGER,
76:                         PRIMARY KEY (isbn, custid),
77:                         FOREIGN KEY (isbn) REFERENCES books(isbn),
78:                         FOREIGN KEY (custid)
79:                             REFERENCES customers(custid))
80:                     ''')
81:
82:                 #-----
83:
84:                 cursor.execute('''
85:                     INSERT INTO books (isbn, title, quantity)
86:                     VALUES ('123','The Practice of Programming',500)
87:                     ''')
88:
89:                 cursor.execute('''
90:                     INSERT INTO books (isbn, title, quantity)
91:                     VALUES ('234','The C Programming Language',800)
92:                     ''')
93:
94:                 cursor.execute('''
95:                     INSERT INTO books (isbn, title, quantity)
96:                     VALUES ('345','Algorithms in C',650)
97:                     ''')
98:
99:                 #-----
100:
101:                 cursor.execute('''INSERT INTO authors (isbn, author)
102:                     VALUES ('123','Kernighan')''')
103:                 cursor.execute('''INSERT INTO authors (isbn, author)
104:                     VALUES ('123','Pike')''')
105:                 cursor.execute('''INSERT INTO authors (isbn, author)
106:                     VALUES ('234','Kernighan')''')
107:                 cursor.execute('''INSERT INTO authors (isbn, author)
108:                     VALUES ('234','Ritchie')''')
109:                 cursor.execute('''INSERT INTO authors (isbn, author)
110:                     VALUES ('345','Sedgewick')''')
111:
112:                 #-----
113:
114:                 cursor.execute('''
115:                     INSERT INTO zipcodes (zipcode, city, state)
116:                     VALUES ('08540','Princeton', 'NJ')''')
117:                 cursor.execute('''
118:                     INSERT INTO zipcodes (zipcode, city, state)
119:                     VALUES ('02138','Cambridge', 'MA')''')
120:                 cursor.execute('''
121:                     INSERT INTO zipcodes (zipcode, city, state)
122:                     VALUES ('02142','Cambridge', 'MA')''')
123:
124:                 #-----
125:
126:                 cursor.execute('''
127:                     INSERT INTO customers
128:                     (custid, custname, street, zipcode) VALUES
129:                     ('111','Princeton','114 Nassau St','08540')''')
130:                 cursor.execute('''
131:                     INSERT INTO customers
132:                     (custid, custname, street, zipcode) VALUES

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131:         ('222','Harvard','1256 Mass Ave','02138')'''
132:     cursor.execute('''
133:         INSERT INTO customers
134:         (custid, custname, street, zipcode) VALUES
135:         ('333','MIT','292 Main St','02142')'''
136:
137:     #-----
138:
139:     cursor.execute('''
140:         INSERT INTO orders (isbn, custid, quantity)
141:         VALUES ('123','222',20)'''
142:     cursor.execute('''
143:         INSERT INTO orders (isbn, custid, quantity)
144:         VALUES ('345','222',100)'''
145:     cursor.execute('''
146:         INSERT INTO orders (isbn, custid, quantity)
147:         VALUES ('123','111',30)'''
148:
149:     except Exception as ex:
150:         print(ex, file=sys.stderr)
151:         print(f'{sys.argv[0]}: {ex}', file=sys.stderr)
152:
153:     #-----
154:
155: if __name__ == '__main__':
156:     main()

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SQLite/display.py (Page 1 of 2)

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1: #!/usr/bin/env python
2:
3: #-----
4: # display.py
5: # Author: Bob Dondero
6: #-----
7:
8: import sys
9: import contextlib
10: import sqlite3
11:
12: #-----
13:
14: DATABASE_URL = 'file:bookstore.sqlite'
15:
16: def main():
17:
18:     if len(sys.argv) != 1:
19:         print(f'usage: python {sys.argv[0]}', file=sys.stderr)
20:         sys.exit(1)
21:
22:     try:
23:         with contextlib.closing(
24:             sqlite3.connect(_DATABASE_URL + '?mode=ro',
25:                 isolation_level=None, uri=True)) as connection:
26:
27:             with contextlib.closing(connection.cursor()) as cursor:
28:
29:                 print('-----')
30:                 print('books')
31:                 print('-----')
32:                 cursor.execute("SELECT * FROM books")
33:                 table = cursor.fetchall()
34:                 for row in table:
35:                     print(row)
36:
37:                 print('-----')
38:                 print('authors')
39:                 print('-----')
40:                 cursor.execute("SELECT * FROM authors")
41:                 table = cursor.fetchall()
42:                 for row in table:
43:                     print(row)
44:
45:                 print('-----')
46:                 print('zipcodes')
47:                 print('-----')
48:                 cursor.execute("SELECT * FROM zipcodes")
49:                 table = cursor.fetchall()
50:                 for row in table:
51:                     print(row)
52:
53:                 print('-----')
54:                 print('customers')
55:                 print('-----')
56:                 cursor.execute("SELECT * FROM customers")
57:                 table = cursor.fetchall()
58:                 for row in table:
59:                     print(row)
60:
61:                 print('-----')
62:                 print('orders')
63:                 print('-----')
64:                 cursor.execute("SELECT * FROM orders")
65:                 table = cursor.fetchall()

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66:         for row in table:
67:             print(row)
68:
69:     except Exception as ex:
70:         print(f'{sys.argv[0]}: {ex}', file=sys.stderr)
71:         sys.exit(1)
72:
73: #-----
74:
75: if __name__ == '__main__':
76:     main()

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SQLite/authorsearch.py (Page 1 of 1)

```

1: #!/usr/bin/env python
2:
3: #-----
4: # authorsearch.py
5: # Author: Bob Dondero
6: #-----
7:
8: import sys
9: import contextlib
10: import sqlite3
11:
12: #-----
13:
14: DATABASE_URL = 'file:bookstore.sqlite'
15:
16: def main():
17:
18:     if len(sys.argv) != 2:
19:         print(f'usage: python {sys.argv[0]} author', file=sys.stderr)
20:         sys.exit(1)
21:
22:     author = sys.argv[1]
23:
24:     try:
25:         with contextlib.closing(
26:             sqlite3.connect(_DATABASE_URL + '?mode=ro',
27:                 isolation_level=None, uri=True)) as connection:
28:
29:             with contextlib.closing(connection.cursor()) as cursor:
30:
31:                 stmt_str = f'''
32:                     SELECT books.isbn, title, quantity
33:                     FROM books, authors
34:                     WHERE books.isbn = authors.isbn
35:                     AND author = '{author}'
36:                     '''
37:                 cursor.execute(stmt_str)
38:
39:                 table = cursor.fetchall()
40:                 for row in table:
41:                     print('ISBN:', row[0])
42:                     print('Title:', row[1])
43:                     print('Quantity:', row[2])
44:                     print()
45:
46:     except Exception as ex:
47:         print(f'{sys.argv[0]}: {ex}', file=sys.stderr)
48:         sys.exit(1)
49:
50: #-----
51:
52: if __name__ == '__main__':
53:     main()

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SQLite/order.py (Page 1 of 1)

```

1: #!/usr/bin/env python
2:
3: #-----
4: # order.py
5: # Author: Bob Dondero
6: #-----
7:
8: import sys
9: import contextlib
10: import sqlite3
11:
12: #-----
13:
14: DATABASE_URL = 'file:bookstore.sqlite'
15:
16: def main():
17:
18:     if len(sys.argv) != 3:
19:         print(f'usage: python {sys.argv[0]} isbn custid',
20:             file=sys.stderr)
21:         sys.exit(1)
22:
23:     isbn = sys.argv[1]
24:     custid = sys.argv[2]
25:
26:     try:
27:         with contextlib.closing(
28:             sqlite3.connect(_DATABASE_URL + '?mode=rw',
29:                 isolation_level=None, uri=True)) as connection:
30:             with contextlib.closing(connection.cursor()) as cursor:
31:                 stmt_str = f'''
32:                     UPDATE orders SET quantity = quantity+1
33:                     WHERE isbn = '{isbn}' AND custid = '{custid}'
34:                     '''
35:                 cursor.execute(stmt_str)
36:
37:     except Exception as ex:
38:         print(f'{sys.argv[0]}: {ex}', file=sys.stderr)
39:         sys.exit(1)
40:
41: #-----
42:
43: if __name__ == '__main__':
44:     main()

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SQLite/authorsearchprep.py (Page 1 of 1)

```

1: #!/usr/bin/env python
2:
3: #-----
4: # authorsearchprep.py
5: # Author: Bob Dondero
6: #-----
7:
8: import sys
9: import contextlib
10: import sqlite3
11:
12: #-----
13:
14: DATABASE_URL = 'file:bookstore.sqlite'
15:
16: def main():
17:
18:     if len(sys.argv) != 2:
19:         print(f'usage: python {sys.argv[0]} author', file=sys.stderr)
20:         sys.exit(1)
21:
22:     author = sys.argv[1]
23:
24:     try:
25:         with contextlib.closing(
26:             sqlite3.connect(_DATABASE_URL + '?mode=ro',
27:                 isolation_level=None, uri=True)) as connection:
28:
29:             with contextlib.closing(connection.cursor()) as cursor:
30:
31:                 # Create a prepared statement and substitute values.
32:                 stmt_str = '''
33:                     SELECT books.isbn, title, quantity
34:                     FROM books, authors
35:                     WHERE books.isbn = authors.isbn
36:                     AND author = ?
37:                 '''
38:                 cursor.execute(stmt_str, [author])
39:
40:                 table = cursor.fetchall()
41:                 for row in table:
42:                     print('ISBN:', row[0])
43:                     print('Title:', row[1])
44:                     print('Quantity:', row[2])
45:                     print()
46:
47:     except Exception as ex:
48:         print(f'{sys.argv[0]}: {ex}', file=sys.stderr)
49:         sys.exit(1)
50:
51: #-----
52:
53: if __name__ == '__main__':
54:     main()

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SQLite/orderprep.py (Page 1 of 1)

```

1: #!/usr/bin/env python
2:
3: #-----
4: # orderprep.py
5: # Author: Bob Dondero
6: #-----
7:
8: import sys
9: import contextlib
10: import sqlite3
11:
12: #-----
13:
14: DATABASE_URL = 'file:bookstore.sqlite'
15:
16: def main():
17:
18:     if len(sys.argv) != 3:
19:         print(f'usage: python {sys.argv[0]} isbn custid',
20:             file=sys.stderr)
21:         sys.exit(1)
22:
23:     isbn = sys.argv[1]
24:     custid = sys.argv[2]
25:
26:     try:
27:         with contextlib.closing(
28:             sqlite3.connect(_DATABASE_URL + '?mode=rw',
29:                 isolation_level=None, uri=True)) as connection:
30:
31:             with contextlib.closing(connection.cursor()) as cursor:
32:                 stmt_str = '''
33:                     UPDATE orders SET quantity = quantity+1
34:                     WHERE isbn = ? AND custid = ?
35:                 '''
36:                 cursor.execute(stmt_str, [isbn, custid])
37:
38:     except Exception as ex:
39:         print(f'{sys.argv[0]}: {ex}', file=sys.stderr)
40:         sys.exit(1)
41:
42: #-----
43:
44: if __name__ == '__main__':
45:     main()

```