

SQLite/purchase.py (Page 1 of 1)

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1: #!/usr/bin/env python
2:
3: #-----
4: # purchase.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:
33:                 cursor.execute('BEGIN')
34:
35:                 stmt_str = '''
36:                     UPDATE orders SET quantity = quantity+1
37:                     WHERE isbn = ? AND custid = ?
38:                 '''
39:                 cursor.execute(stmt_str, [isbn, custid])
40:
41:                 stmt_str = '''
42:                     UPDATE books SET quantity = quantity-1
43:                     WHERE isbn = ?
44:                 '''
45:                 cursor.execute(stmt_str, [isbn])
46:
47:                 cursor.execute('COMMIT')
48:                 print('Transaction committed.')
49:
50:     except Exception as ex:
51:         print(f'{sys.argv[0]}: {ex}', file=sys.stderr)
52:         sys.exit(1)
53:
54: #-----
55:
56: if __name__ == '__main__':
57:     main()

```

SQLite/recovery.py (Page 1 of 1)

```

1: #!/usr/bin/env python
2:
3: #-----
4: # recovery.py
5: # Author: Bob Dondero
6: #-----
7:
8: import sys
9: import random
10: import contextlib
11: import sqlite3
12:
13: #-----
14:
15: DATABASE_URL = 'file:bookstore.sqlite'
16:
17: def main():
18:
19:     if len(sys.argv) != 1:
20:         print(f'usage: python {sys.argv[0]}', file=sys.stderr)
21:         sys.exit(1)
22:
23:     try:
24:         connection = sqlite3.connect(DATABASE_URL + '?mode=rw',
25:                                       isolation_level=None, uri=True)
26:         cursor = connection.cursor()
27:
28:         for i in range(20):
29:
30:             cursor.execute('BEGIN')
31:
32:             stmt_str = '''
33:                 UPDATE orders SET quantity = quantity+1
34:                 WHERE isbn = '123' AND custid = '222'
35:             '''
36:             cursor.execute(stmt_str)
37:
38:             # Simulate a HW/SW failure occurring randomly.
39:             if random.randrange(10) == 0:
40:                 print(f'Simulated failure with i = {i}')
41:                 sys.exit(1)
42:
43:             stmt_str = '''
44:                 UPDATE books SET quantity = quantity-1
45:                 WHERE isbn = '123'
46:             '''
47:             cursor.execute(stmt_str)
48:
49:             cursor.execute('COMMIT')
50:             print(f'Transaction {i} committed.')
51:
52:         cursor.close()
53:         connection.close()
54:
55:     except Exception as ex:
56:         print(f'{sys.argv[0]}: {ex}', file=sys.stderr)
57:         sys.exit(1)
58:
59: #-----
60:
61: if __name__ == '__main__':
62:     main()

```