

SQLite/purchase.py (Page 1 of 1)

```

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:pearson.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 os
9: import sys
10: import random
11: import contextlib
12: import sqlite3
13:
14: #-----
15:
16: DATABASE_URL = 'file:pearson.sqlite'
17:
18: def main():
19:
20:     if len(sys.argv) != 1:
21:         print(f'usage: python {sys.argv[0]}', file=sys.stderr)
22:         sys.exit(1)
23:
24:     try:
25:         with contextlib.closing(
26:             sqlite3.connect(DATABASE_URL + '?mode=rw',
27:                             isolation_level=None, uri=True)) as connection:
28:
29:             with contextlib.closing(connection.cursor()) as cursor:
30:
31:                 for i in range(20):
32:
33:                     cursor.execute('BEGIN')
34:
35:                     stmt_str = '''
36:                         UPDATE orders SET quantity = quantity+1
37:                         WHERE isbn = '123' AND custid = '222'
38:                     '''
39:                     cursor.execute(stmt_str)
40:
41:                     # Simulate a HW/SW failure occurring randomly.
42:                     if random.randrange(10) == 0:
43:                         print(f'Simulated failure with i = {i}')
44:                         os._exit(1) # Hard crash!!!
45:
46:                     stmt_str = '''
47:                         UPDATE books SET quantity = quantity-1
48:                         WHERE isbn = '123'
49:                     '''
50:                     cursor.execute(stmt_str)
51:
52:                     cursor.execute('COMMIT')
53:                     print(f'Transaction {i} committed.')
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()

```