

РК1 по курсу разработка интернет приложений  
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Задание:

Вариант запроса	Вариант предметной области
Б	Книжный магазин

Содержимое пакета Bookshop\_books:

файл book.py

```
class Book:
    def __init__(self, book_record_id=0, title="", author="", bookshop_record_id=0):
        self.book_record_id = book_record_id
        self.title = title
        self.author = author
        self.bookshop_record_id = bookshop_record_id
```

файл bookshop.py

```
class BookShop:
    def __init__(self, address="", name="", bookshop_record_id=0):
        self.address = address
        self.name = name
        self.bookshop_record_id = bookshop_record_id
```

файл bookshop\_books.py

```
class BookshopBooks:
    def __init__(self, book_record_id=0, bookshop_record_id=0):
        self.book_record_id = book_record_id
        self.bookshop_record_id = bookshop_record_id
```

Запросы по заданию

1) «Книга» и «Книжный магазин» связаны соотношением один-ко-многим. Вывести книги, продающиеся в каждом книжном магазине, отсортированные по названию

Код запроса:

```
def print_books_from_each_bookshop(_books_records_list, _bookshop_records_list):
    for bookshop in _bookshop_records_list:
        print("Bookshop: ", bookshop.name)
        for book in sorted(_books_records_list, key=lambda x: x.title):
            if book.bookshop_record_id == bookshop.bookshop_record_id:
                print(book.title, "by", book.author)
        print("-" * 50)
```

Результат выполнения запроса:

```
---Books from each bookshop-----
Bookshop:  Book Labirinth
Dagon by Lovecraft
War and Peace by Tolstoy
-----
Bookshop:  Good Old Books
Farewell Arms! by Ernest Hammingw
-----
Bookshop:  Peter I's Books
Master and Margarita by Bulgakov
Splinter Cell by Tom Clansey
Wildlands by Tom Clansey
-----
```

2) «Книга» и «Книжный магазин» связаны соотношением один-ко-многим. Вывести список книжных магазинов, отсортированных по количеству книг.

Код запроса:

```
def print_bookshops_by_book_count(_books_records_list, _bookshop_records_list):
    bookshop_books = list()
    for bookshop in _bookshop_records_list:
        counter = 0
        books = list()
        for book in _books_records_list:
            if book.bookshop_record_id == bookshop.bookshop_record_id:
                books.append(book)
                counter += 1
        bookshop_books.append((counter, bookshop.name, books))
    for bookshop in sorted(bookshop_books, key=lambda x: x[0]):
        print("Bookshop: ", bookshop[1])
        for book in bookshop[2]:
            print(book.title, "by", book.author)
        print("Book count:", bookshop[0])
        print("-" * 50)
```

Результат выполнения запроса:

```
---Bookshops sorted by book count---
Bookshop:  Good Old Books
Farewell Arms! by Ernest Hammingw
Book count: 1
-----
Bookshop:  Book Labirinth
War and Peace by Tolstoy
Dagon by Lovecraft
Book count: 2
-----
Bookshop:  Peter I's Books
Master and Margarita by Bulgakov
Splinter Cell by Tom Clansey
Wildlands by Tom Clansey
Book count: 3
```

3) «Книга» и «Книжный магазин» связаны соотношением многие-ко-многим. Вывести список всех книг магазинов, название которых кончается на «Books»

Код запроса:

```
def print_bookshops_ending_with_books(_bookshop_books_records_list,
                                     _books_records_list, _bookshop_records_list):
    bookshops = [bookshop for bookshop in _bookshop_records_list if bookshop.name[-5:] ==
                  "Books"]
    for bookshop in bookshops:
        print("Bookshop:", bookshop.name)
        for bookshops_book_record in _bookshop_books_records_list:
            if bookshop.bookshop_record_id == bookshops_book_record.bookshop_record_id:
                book = _books_records_list[bookshops_book_record.book_record_id - 1]
                print(book.title, "by", book.author)
        print("-" * 50)
```

Результат выполнения запроса:

```
---Bookshops names ending with 'books'---
Bookshop: Good Old Books
Dagon by Lovecraft
Farewell Arms! by Ernest Hammingw
Morphium by Bulgakov
Splinter Cell by Tom Clansey
-----
Bookshop: Peter I's Books
Master and Margarita by Bulgakov
Splinter Cell by Tom Clansey
-----
```

Код основного метода

```
def main():
    book_records_list = [
        Book(1, "War and Peace", "Tolstoy", 1),
        Book(2, "Dagon", "Lovecraft", 1),
        Book(3, "Farewell Arms!", "Ernest Hammingw", 2),
        Book(4, "Master and Margarita", "Bulgakov", 3),
        Book(5, "Splinter Cell", "Tom Clansey", 3),
        Book(6, "Wildlands", "Tom Clansey", 3),
        Book(7, "Morphium", "Bulgakov", 4),
    ]
    bookshop_records_list = [
        BookShop("Moscow Tverskaya st.", "Book Labirinth", 1),
        BookShop("Moscow Baumanskay st.", "Good Old Books", 2),
        BookShop("St. Petersburg Leninskay st.", "Peter I's Books", 3)
```

```
]
bookshop_books_records_list = [
    BookshopBooks(1, 1),
    BookshopBooks(2, 2),
    BookshopBooks(3, 2),
    BookshopBooks(7, 2),
    BookshopBooks(4, 3),
    BookshopBooks(5, 3),
    BookshopBooks(5, 2),
    BookshopBooks(5, 1)
]
print("---Books from each bookshop-----")
print_books_from_each_bookshop(book_records_list, bookshop_records_list)
print("\n---Bookshops sorted by book count---")
print_bookshops_by_book_count(book_records_list, bookshop_records_list)
print("\n---Bookshops names ending with 'books'---")
print_bookshops_ending_with_books(bookshop_books_records_list, book_records_list,
bookshop_records_list)
```