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#pK 1
class Book:
#pK 1
class CD_disk:
    def __init__(self, CD_disk_id, title, genre, price, library_id):
        self.CD_disk_id = CD_disk_id
        self.title = title
        self.genre = genre
        self.price = price
        self.library_id = library_id

class Library:
    def __init__(self, library_id, name):
        self.library_id = library_id
        self.name = name

class CD_disksLibrary:
    def __init__(self, CD_disk_id, library_id):
        self.CD_disk_id = CD_disk_id
        self.library_id = library_id

def list_CD_disks_by_library(CD_disks, libraries):
    CD_disks_by_library = {}

    for CD_disk in CD_disks:
        if CD_disk.library_id not in CD_disks_by_library:
            CD_disks_by_library[CD_disk.library_id] = []
        CD_disks_by_library[CD_disk.library_id].append(CD_disk)

    for library in libraries:
        if library.library_id in CD_disks_by_library:
            CD_disks_in_library = CD_disks_by_library[library.library_id]
            CD_disks_in_library.sort(key=lambda b: b.title)
            print(f"Библиотека: {library.name}")
            for CD_disk in CD_disks_in_library:
                print(f" - {CD_disk.title} (Жанр: {CD_disk.genre}, Цена: {CD_disk.price})")

def list_libraries_by_total_CD_disk_price(CD_disks, libraries):
    library_prices = {}

    for CD_disk in CD_disks:
        if CD_disk.library_id not in library_prices:
            library_prices[CD_disk.library_id] = 0
        library_prices[CD_disk.library_id] += CD_disk.price

    sorted_libraries = sorted(library_prices.items(), key=lambda x: x[1],
reverse=True)
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    for library_id, total_price in sorted_libraries:
        library = next(lib for lib in libraries if lib.library_id == library_id)
        print(f"Библиотека: {library.name}, Суммарная цена книг: {total_price}")

def list_libraries_and_CD_disks_with_keyword(CD_disks, libraries,
CD_disks_libraries, keyword):
    relevant_libraries = [lib for lib in libraries if keyword.lower() in
lib.name.lower()]

    for library in relevant_libraries:
        print(f"Библиотека: {library.name}")
        CD_disks_in_library = [CD_disk for CD_disk in CD_disks if
any(bl.CD_disk_id == CD_disk.CD_disk_id for bl in CD_disks_libraries if
bl.library_id == library.library_id)]

        for CD_disk in CD_disks_in_library:
            print(f" - {CD_disk.title} (Жанр: {CD_disk.genre}, Цена:
{CD_disk.price})")

# задание 1
print("\nЗадание 1")
CD_disks = [
    CD_disk(1, "CD 1", "Фантастика", 100, 1),
    CD_disk(2, "CD 2", "Роман", 150, 1),
    CD_disk(3, "CD 3", "Фэнтези", 200, 2),
]
libraries = [
    Library(1, "Библиотека 1"),
    Library(2, "Библиотека 2"),
]
list_CD_disks_by_library(CD_disks, libraries)

#задание 2
print("\nЗадание 2")
list_libraries_by_total_CD_disk_price(CD_disks, libraries)

#задание 3
print("\nЗадание 3")
CD_disks_libraries=[
    CD_disksLibrary(1,1),
    CD_disksLibrary(1,2),
    CD_disksLibrary(2,2),
    CD_disksLibrary(3,1),
    CD_disksLibrary(3,2)
]
keyword = "Библиотека"
list_libraries_and_CD_disks_with_keyword(CD_disks, libraries, CD_disks_libraries,
keyword)

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Задание 1

Библиотека: Библиотека 1

- CD 1 (Жанр: Фантастика, Цена: 100)
- CD 2 (Жанр: Роман, Цена: 150)

Библиотека: Библиотека 2

- CD 3 (Жанр: Фэнтези, Цена: 200)

Задание 2

Библиотека: Библиотека 1, Суммарная цена книг: 250

Библиотека: Библиотека 2, Суммарная цена книг: 200

Задание 3

Библиотека: Библиотека 1

- CD 1 (Жанр: Фантастика, Цена: 100)
- CD 3 (Жанр: Фэнтези, Цена: 200)

Библиотека: Библиотека 2

- CD 1 (Жанр: Фантастика, Цена: 100)
- CD 2 (Жанр: Роман, Цена: 150)
- CD 3 (Жанр: Фэнтези, Цена: 200)

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