Case Study Sprint- Book Rental B

**Code 1st**

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class BookRental{

private int rentalid;

private int userid;

private int bookid;

private int quantity;

private String startdate;

private String enddate;

private int totalamount;

private boolean status;

private String returndate;

private Book book;

public BookRental(int rentalid, int userid, int bookid, int quantity, String startdate, String enddate,

int totalamount, boolean status, String returndate, Book book) {

this.rentalid = rentalid;

this.userid = userid;

this.bookid = bookid;

this.quantity = quantity;

this.startdate = startdate;

this.enddate = enddate;

this.totalamount = totalamount;

this.status = status;

this.returndate=returndate;

this.book = book;

}

public int getRentalid() {

return rentalid;

}

public void setRentalid(int rentalid) {

this.rentalid = rentalid;

}

public int getUserid() {

return userid;

}

public void setUserid(int userid) {

this.userid = userid;

}

public int getBookid() {

return bookid;

}

public void setBookid(int bookid) {

this.bookid = bookid;

}

public int getQuantity() {

return quantity;

}

public void setQuantity(int quantity) {

this.quantity = quantity;

}

public String getStartdate() {

return startdate;

}

public void setStartdate(String startdate) {

this.startdate = startdate;

}

public String getEnddate() {

return enddate;

}

public void setEnddate(String enddate) {

this.enddate = enddate;

}

public int getTotalamount() {

return totalamount;

}

public void setTotalamount(int totalamount) {

this.totalamount = totalamount;

}

public boolean isStatus() {

return status;

}

public void setStatus(boolean status) {

this.status = status;

}

public String getReturndate() {

return returndate;

}

public void setReturndate(String returndate) {

this.returndate = returndate;

}

public Book getBook() {

return book;

}

public void setBook(Book book) {

this.book = book;

}

@Override

public String toString() {

return "BookRental [rentalid=" + rentalid + ", userid=" + userid + ", bookid=" + bookid + ", quantity="

+ quantity + ", startdate=" + startdate + ", enddate=" + enddate + ", totalamount=" + totalamount + ", status="

+ status + ", returndate=" + returndate + ", book=" + book + "]";

}

}

class Book{

private int bookid;

private String title;

private String description;

private int authorid;

private int price;

private int availablequantity;

private int totalquantity;

private int rentperday;

public Book(int bookid, String title, String description, int authorid, int price, int availablequantity, int totalquantity, int rentperday) {

super();

this.bookid = bookid;

this.title = title;

this.description = description;

this.authorid = authorid;

this.price = price;

this.availablequantity = availablequantity;

this.totalquantity = totalquantity;

this.rentperday = rentperday;

}

public int getBookid() {

return bookid;

}

public void setBookid(int bookid) {

this.bookid = bookid;

}

public String getTitle() {

return title;

}

public void setTitle(String title) {

this.title = title;

}

public String getDescription() {

return description;

}

public void setDescription(String description) {

this.description = description;

}

public int getAuthorid() {

return authorid;

}

public void setAuthorid(int authorid) {

this.authorid = authorid;

}

public int getPrice() {

return price;

}

public void setPrice(int price) {

this.price = price;

}

public int getAvailablequantity() {

return availablequantity;

}

public void setAvailablequantity(int availablequantity) {

this.availablequantity = availablequantity;

}

public int getTotalquantity() {

return totalquantity;

}

public void setTotalquantity(int totalquantity) {

this.totalquantity = totalquantity;

}

public int getRentperday() {

return rentperday;

}

public void setRentperday(int rentperday) {

this.rentperday = rentperday;

}

@Override

public String toString() {

return "Book [bookid=" + bookid + ", title=" + title + ", description=" + description + ", authorid="

+ authorid + ", price=" + price + ", availablequantity=" + availablequantity + ", totalquantity=" + totalquantity + ", rentperday="

+ rentperday + "]";

}

}

class Source{

public static void main(String[] args){

}

}

**Code 2nd**

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import java.util.\*;

class Book {

int bookId;

String title;

String description;

String author;

double price;

int totalQuantity;

int availableQuantity;

double rentPerDay;

public Book(int bookId, String title, String description, String author,double price,int totalQuantity, int availableQuantity,

double rentPerDay) {

this.bookId = bookId;

this.title = title;

this.description = description;

this.author = author;

this.totalQuantity = totalQuantity;

this.availableQuantity = availableQuantity;

this.price = price;

this.rentPerDay = rentPerDay;

}

public Book() {}

public int getBookId() {

return bookId;

}

public void setBookId(int bookId) {

this.bookId = bookId;

}

public String getTitle() {

return title;

}

public void setTitle(String title) {

this.title = title;

}

public String getDescription() {

return description;

}

public void setDescription(String description) {

this.description = description;

}

public String getAuthor() {

return author;

}

public void setAuthor(String author) {

this.author = author;

}

public int getTotalQuantity() {

return totalQuantity;

}

public void setTotalQuantity(int totalQuantity) {

this.totalQuantity = totalQuantity;

}

public int getAvailableQuantity() {

return availableQuantity;

}

public void setAvailableQuantity(int availableQuantity) {

this.availableQuantity = availableQuantity;

}

public double getPrice() {

return price;

}

public void setPrice(double price) {

this.price = price;

}

public double getRentPerDay() {

return rentPerDay;

}

public void setRentPerDay(double rentPerDay) {

this.rentPerDay = rentPerDay;

}

@Override

public String toString() {

return "Book [bookId=" + bookId + ", title=" + title + ", description=" + description + ", author=" + author+

", price=" + price+ ", totalQuantity=" + totalQuantity + ", availableQuantity=" + availableQuantity +

", rentPerDay=" + rentPerDay + "]";

}

}

class Admin {

int adminId;

String emailId;

String password;

String firstName;

public Admin(int adminId, String emailId, String firstName,String password ) {

super();

this.adminId = adminId;

this.emailId = emailId;

this.password = password;

this.firstName = firstName;

}

public Admin() {}

public int getAdminId() {

return adminId;

}

public void setAdminId(int adminId) {

this.adminId = adminId;

}

public String getEmailId() {

return emailId;

}

public void setEmailId(String emailId) {

this.emailId = emailId;

}

public String getPassword() {

return password;

}

public void setPassword(String password) {

this.password = password;

}

public String getFirstName() {

return firstName;

}

public void setFirstName(String firstName) {

this.firstName = firstName;

}

@Override

public String toString() {

return "Admin [adminId=" + adminId + ", emailId=" + emailId + ", firstName="

+ firstName +", password=" + password+ "]" ;

}

}

**Code 3rd**

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import java.util.Date;

import java.util.regex.Pattern;

interface BookRentalService {

void createBookRental(BookRental bookRental);

BookRental updateBookRental(BookRental bookRental);

void deleteBookRental(int rentalId);

BookRental[] getBookRentals();

BookRental[] searchByCustomerId(int customerId);

BookRental[] searchByBookId(int bookId);

}

class BookRentalServiceImpl implements BookRentalService {

public static BookRental[] bookRentalArray = new BookRental[5];

public static int size = 0;

@Override

public void createBookRental(BookRental bookRental) {

bookRentalArray[size] = bookRental;

size++;

}

@Override

public BookRental updateBookRental(BookRental bookRental) {

int ctr;

for (ctr = 0; ctr < size; ctr++) {

if (bookRentalArray[ctr] == bookRental) {

bookRentalArray[ctr] = bookRental;

break;

}

}

return bookRentalArray[ctr];

}

@Override

public void deleteBookRental(int rentalId) {

for (int ctr = 0; ctr < size; ctr++) {

if (bookRentalArray[ctr].getRentalId() == rentalId) {

bookRentalArray[ctr] = null;

}

}

}

@Override

public BookRental[] getBookRentals() {

return bookRentalArray;

}

@Override

public BookRental[] searchByCustomerId(int customerId) {

BookRental[] result = new BookRental[2];

int rindex = 0;

for (int ctr = 0; ctr < 5; ctr++) {

if (customerId == bookRentalArray[ctr].getUserId()) {

result[rindex] = bookRentalArray[ctr];

rindex++;

}

}

return result;

}

@Override

public BookRental[] searchByBookId(int bookId) {

BookRental[] result = new BookRental[2];

int rindex = 0;

for (int ctr = 0; ctr < 5; ctr++) {

if (bookId == bookRentalArray[ctr].getBookId()) {

result[rindex] = bookRentalArray[ctr];

rindex++;

}

}

return result;

}

}

class BookRental {

private int rentalId;

private int bookId;

private int userId;

private int quantity;

private Date startDate;

private Date endDate;

private double totalAmount;

private Date returnedDate;

public BookRental(int rentalId, int bookId, int userId, int quantity, Date startDate, Date endDate,

double totalAmount, Date returnedDate) {

this.rentalId = rentalId;

this.bookId = bookId;

this.userId = userId;

this.quantity = quantity;

this.startDate = startDate;

this.endDate = endDate;

this.totalAmount = totalAmount;

this.returnedDate = returnedDate;

}

public int getRentalId() {

return rentalId;

}

public void setRentalId(int rentalId) {

this.rentalId = rentalId;

}

public int getBookId() {

return bookId;

}

public void setBookId(int bookId) {

this.bookId = bookId;

}

public int getUserId() {

return userId;

}

public void setUserId(int userId) {

this.userId = userId;

}

public int getQuantity() {

return quantity;

}

public void setQuantity(int quantity) {

this.quantity = quantity;

}

public Date getStartDate() {

return startDate;

}

public void setStartDate(Date startDate) {

this.startDate = startDate;

}

public Date getEndDate() {

return endDate;

}

public void setEndDate(Date endDate) {

this.endDate = endDate;

}

public double getTotalAmount() {

return totalAmount;

}

public void setTotalAmount(double totalAmount) {

this.totalAmount = totalAmount;

}

public Date getReturnedDate() {

return returnedDate;

}

public void setReturnedDate(Date returnedDate) {

this.returnedDate = returnedDate;

}

}

interface CustomerService {

public void createCustomer(Customer customer);

public Customer updateCustomer(Customer customer) throws CustomerNotFoundException;

public void deleteCustomer(int id) throws CustomerNotFoundException;

public Customer searchCustomer(int id) throws CustomerNotFoundException;

public Customer[] getCustomers();

public BookRental[] rentBook(BookRental bookRental);

public BookRental[] getRentalBookDetails(int customerId);

}

class CustomerServiceImpl implements CustomerService {

BookRentalService service = new BookRentalServiceImpl();

static Customer[] customerArray = new Customer[5];

int size = 0, count = 0;

@Override

public void createCustomer(Customer customer) {

customerArray[size] = customer;

size++;

}

@Override

public Customer updateCustomer(Customer customer) throws CustomerNotFoundException {

int flag = 0;

for (int ctr = 0; ctr < 5; ctr++) {

if (customer.equals(customerArray[ctr])) {

flag = 1;

break;

}

}

if (flag == 0) {

throw new CustomerNotFoundException();

}

return customer;

}

@Override

public void deleteCustomer(int id) throws CustomerNotFoundException {

int flag = 0;

for (int ctr = 0; ctr < size; ctr++) {

if (id == customerArray[ctr].getUserId()) {

flag = 1;

break;

}

}

if (flag == 0) {

throw new CustomerNotFoundException();

}

}

@Override

public Customer searchCustomer(int id) throws CustomerNotFoundException {

int flag = 0, ctr;

for (ctr = 0; ctr < size; ctr++) {

if (id == customerArray[ctr].getUserId()) {

flag = 1;

break;

}

}

if (flag == 0) {

throw new CustomerNotFoundException();

}

return customerArray[ctr];

}

@Override

public Customer[] getCustomers() {

return customerArray;

}

@Override

public BookRental[] rentBook(BookRental bookRental) {

service.createBookRental(bookRental);

return service.getBookRentals();

}

@Override

public BookRental[] getRentalBookDetails(int customerId) {

return (service.searchByCustomerId(customerId));

}

}

class Customer {

private int userId;

private String emailId;

private String password;

private String firstName;

private String lastName;

private String city;

private String gender;

private long phoneNumber;

private Address address;

private int result;

Customer() {

}

public Customer(int userId, String emailId, String password, String firstName, String lastName, String city,

String gender, long phoneNumber, Address address) throws InvalidNameException {

this.userId = userId;

this.emailId = emailId;

this.password = password;

result = Pattern.matches("^[A-Za-z]{6,}", firstName) ? 1 : -1;

if (result == 1) {

this.firstName = firstName;

} else {

throw new InvalidNameException();

}

result = Pattern.matches("^[A-Za-z]{6,}", firstName) ? 1 : -1;

if (result == 1) {

this.lastName = lastName;

} else {

throw new InvalidNameException();

}

this.firstName = firstName;

this.lastName = lastName;

this.city = city;

this.gender = gender;

this.phoneNumber = phoneNumber;

this.address = address;

}

public long getUserId() {

return userId;

}

public void setUserId(int userId) {

this.userId = userId;

}

public String getEmailId() {

return emailId;

}

public void setEmailId(String emailId) {

this.emailId = emailId;

}

public String getPassword() {

return password;

}

public void setPassword(String password) {

this.password = password;

}

public String getFirstName() {

return firstName;

}

public void setFirstName(String firstName) throws InvalidNameException {

int result = Pattern.matches("^[A-Za-z]{6,}", firstName) ? 1 : -1;

if (result == 1) {

this.firstName = firstName;

} else {

throw new InvalidNameException();

}

}

public String getLastName() {

return lastName;

}

public void setLastName(String lastName) throws InvalidNameException {

int result = Pattern.matches("^[A-Za-z]{6,}", lastName) ? 1 : -1;

if (result == 1) {

this.lastName = lastName;

} else {

throw new InvalidNameException();

}

}

public String getCity() {

return city;

}

public void setCity(String city) {

this.city = city;

}

public String getGender() {

return gender;

}

public void setGender(String gender) {

this.gender = gender;

}

public long getPhoneNumber() {

return phoneNumber;

}

public void setPhoneNumber(long phoneNumber) {

this.phoneNumber = phoneNumber;

}

public Address getAddress() {

return address;

}

public void setAddress(Address address) {

this.address = address;

}

@Override

public String toString() {

return String.format(

"Customer [userId=%s, emailId=%s, password=%s, firstName=%s, lastName=%s, city=%s, gender=%s, phoneNumber=%s, address=%s]",

userId, emailId, password, firstName, lastName, city, gender, phoneNumber, address);

}

}

class Address {

private String city;

private String state;

private int zip;

private String country;

Address() {

}

public Address(String city, String state, int zip, String country) {

this.city = city;

this.state = state;

this.zip = zip;

this.country = country;

}

public String getCity() {

return city;

}

public void setCity(String city) {

this.city = city;

}

public String getState() {

return state;

}

public void setState(String state) {

this.state = state;

}

public int getZip() {

return zip;

}

public void setZip(int zip) {

this.zip = zip;

}

public String getCountry() {

return country;

}

public void setCountry(String country) {

this.country = country;

}

@Override

public String toString() {

return String.format("Address [city=%s, state=%s, zip=%s, country=%s]", city, state, zip, country);

}

}

class InvalidNameException extends RuntimeException {

private static final long serialVersionUID = 1L;

public InvalidNameException() {

}

public InvalidNameException(String message) {

super(message);

}

public InvalidNameException(Throwable cause) {

super(cause);

}

public InvalidNameException(String message, Throwable cause) {

super(message, cause);

}

public InvalidNameException(String message, Throwable cause, boolean enableSuppression,

boolean writableStackTrace) {

super(message, cause, enableSuppression, writableStackTrace);

}

}

class CustomerNotFoundException extends RuntimeException {

private static final long serialVersionUID = 1L;

public CustomerNotFoundException() {

}

public CustomerNotFoundException(String message) {

super(message);

}

public CustomerNotFoundException(Throwable cause) {

super(cause);

}

public CustomerNotFoundException(String message, Throwable cause) {

super(message, cause);

}

public CustomerNotFoundException(String message, Throwable cause, boolean enableSuppression,

boolean writableStackTrace) {

super(message, cause, enableSuppression, writableStackTrace);

}

}

public class Source {

public static void main(String[] args) {

}

}