Program 3

Create a class Book which contains four members: name, author, price, num_pages. Include a constructor to set the values for the members. Include methods to set and get the details of the objects. Include a toString( ) method that could display the complete details of the book. Develop a Java program to create n book objects.

```java
import java.util.ArrayList;
import java.util.List;
import java.util.Scanner;

class Book {
    private String name;
    private String author;
    private double price;
    private int numPages;

    // Constructor
    Book(String name, String author, double price, int numPages) {
        this.name = name;
        this.author = author;
        this.price = price;
        this.numPages = numPages;
    }

    // Setters
    void setName(String name) {
        this.name = name;
    }

    void setAuthor(String author) {
        this.author = author;
    }

    void setPrice(double price) {
        this.price = price;
    }

    void setNumPages(int numPages) {
        this.numPages = numPages;
    }

    // Getters
    String getName() {
        return name;
    }

    String getAuthor() {
        return author;
```

```java
    }

    double getPrice() {
        return price;
    }

    int getNumPages() {
        return numPages;
    }

    // toString method
    @Override
    public String toString() {
        return "Book{" +
            "Name='" + name + '\'' +
            ", Author='" + author + '\'' +
            ", Price=" + price +
            ", Number of Pages=" + numPages +
            '}';
    }
}

class BookStore {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        List<Book> books = new ArrayList<>();

        System.out.print("Enter the number of books: ");
        int n = scanner.nextInt();
        scanner.nextLine(); // Consume newline

        for (int i = 0; i < n; i++) {
            System.out.println("Enter details for book " + (i + 1) + ":");

            System.out.print("Name: ");
            String name = scanner.nextLine();

            System.out.print("Author: ");
            String author = scanner.nextLine();

            System.out.print("Price: ");
            double price = scanner.nextDouble();

            System.out.print("Number of Pages: ");
            int numPages = scanner.nextInt();
            scanner.nextLine(); // Consume newline

            Book book = new Book(name, author, price, numPages);
```

```java
            books.add(book);
        }

        System.out.println("\nBook Details:");
        for (Book book : books) {
            System.out.println(book);
        }

        scanner.close();
    }
}
```

```
C:\1BM23CS333>javac Book.java

C:\1BM23CS333>java BookStore
Enter the number of books: 2
Enter details for book 1:
Name: abc
Author: xyz
Price: 200
Number of Pages: 100
Enter details for book 2:
Name: pqr
Author: ddd
Price: 150
Number of Pages: 200

Book Details:
Book{Name='abc', Author='xyz', Price=200.0, Number of Pages=100}
Book{Name='pqr', Author='ddd', Price=150.0, Number of Pages=200}

C:\1BM23CS333>
```

Java program for the Book class & BookStore class   19/10/2024

```java
import java.util.ArrayList;
import java.util.List;
import java.util.Scanner;
class Book {
    String name;
    String author;
    double price;
    int numPages;

    // Constructor
    Book (String name, String author, double price, int numPages) {
        this.name = name;
        this.author = author;
        this.price = price;
        this.numPages = numPages;
    }

    void setName( String name) {
        this.name = name;
    }
    void setAuthor (String author) {
        this.author = author;
    }
    void setPrice (double price) {
        this.price = price;
    }
    void setNumPages (int numPages) {
        this.numPages = numPages;
    }
```

```java
String getName() {
    return name;
}
String getAuthor() {
    return author;
}
double getPrice() {
    return price;
}
int getNumPages() {
    return numPages;
}
// tostring method
@Override
public String tostring() {
    return "Book{" +
        "Name = '" + name + '\'' +
        ",Author = '" + author + '\'' +
        ", Price = " + price +
        ", Number of Pages=" + numPages +
        '}';
}
}

class BookStore {
    psvm (String[] args) {
        Scanner sc = new Scanner(System.in);
        List<Book> books = new ArrayList<>();
        S.o.p("Enter the no. of books: ");
        int n = sc.nextInt();
```

```java
        sc.nextLine();

        for (int i = 0; i < n; i++) {
            s.o.p ("Enter details for book " + (i+1)+ ":");

            s.o.p ("Name:");
            String name = sc.nextLine ();
            s.o.p ("Author :");
            String author = sc.nextLine ();
            s.o.p ("Price: ");
            double price = sc.nextDouble ();
            s.o.p ("Number of pages: ");
            int numPages = sc. nextInt ();
            sc.nextLine ();

            Book book = new Book (name, author, price, numPages);
            books.book add (book);
        }

        s.o.p ("\n Book Details:");
        for (Book book : books) {
            s.o.p (book);
        }
        sc.close ();
    }
}
```

Question:

Create a class Book which contains 4 members: name, author, price, num_Pages, Include a constructor to set the values for the members. Include methods to set and get the details of the objects. Include a tostring() method that could display the complete details of the book. Develop a java program to create n book objects.

Output:

Area of Rectangle: 80

Area of Triangle: 12.0

Area of Circle: 28.2743338823081738

Enter the no. of books: 2
Enter details for book1:
Name: abc
Author: xyz
Price: 150
No. of Pages: 200
Enter details for book 2:
Name: def
Author: pqr
Price: 130
No. of Pages: 100
Book Details:
Book { Name="abc", Author='xyz', Price=150.0, No. of pages=200 }
Book { Name= 'def', Author= 'pqr', Price= 130.0, No. of pages=100 }

24/10/24