

JAVA LAB - 5

```
C:\> Users > Student > Desktop > TBM124CS314 > Books.java > Java > Book
 3  class Book {
 4
 5      // to String() method to display complete details
 6      public String toString() {
 7          return "Book Details:\n" +
 8              "Name: " + name + "\n" +
 9              "Author: " + author + "\n" +
10              "Price: Rs " + price + "\n" +
11              "Number of Pages: " + numPages;
12      }
13
14
15
16
17
18  public class Books {
19      Run main | Debug main | Run | Debug
20      public static void main(String[] args) {
21          Scanner scanner = new Scanner(System.in);
22
23          System.out.print("Enter the number of books: ");
24          int n = scanner.nextInt();
25          scanner.nextLine(); // Consume newline
26
27          // Create an array to store n book objects
28          Book[] books = new Book[n];
29
30          // Input details for each book
31          for (int i = 0; i < n; i++) {
32              System.out.println("\nEnter details for Book " + (i + 1) + ":" );
33              books[i] = new Book(name:"", author:"", price:0.0, numPages:0);
34              books[i].setDetails();
35          }
36
37          // Display details of all books
38          System.out.println("\n==== Basic Details of All Books ===");
39          for (int i = 0; i < n; i++) {
40              System.out.println("\nBook " + (i + 1) + ":" );
41              books[i].getDetails();
42          }
43
44          // Display complete details using to String()
45          System.out.println("\n==== Complete Details of All Books ===");
46          for (int i = 0; i < n; i++) {
47              System.out.println("\nBook " + (i + 1) + ":" + books[i].toString());
48          }
49      }
50  }
```

```
34     while (true) {
35         System.out.println(x:"\n==== MAIN MENU ===");
36         System.out.println(x:"Select shape:");
37         System.out.println(x:"1. Rectangle");
38         System.out.println(x:"2. Triangle");
39         System.out.println(x:"3. Circle");
40
41         System.out.print(s:"Enter your choice: ");
42         n = sn.nextInt();
43
44         switch (n) {
45             case 1:
46                 System.out.print(s:"Enter length: ");
47                 r.a = sn.nextDouble();
48                 System.out.print(s:"Enter breadth: ");
49                 r.b = sn.nextDouble();
50                 r.printArea();
51                 break;
52
53             case 2:
54                 System.out.print(s:"Enter base: ");
55                 t.a = sn.nextDouble();
56                 System.out.print(s:"Enter height: ");
57                 t.b = sn.nextDouble();
58                 t.printArea();
59                 break;
50
51             case 3:
52                 System.out.print(s:"Enter radius: ");
53                 c.a = sn.nextDouble();
54                 c.printArea();
55                 break;
56
57             default:
58                 System.out.println(x:"Invalid input. Try again!");
59         }
60     }
61 }
```

```
\workspaceStorage\b3d7508adbf296428211f7a8444eaf8a\redhat.java\jdt_ws\jdt.ls-ja
Enter the number of books: 1

Enter details for Book 1:
Enter book name: java basics
Enter author name: alex
Enter price: 501
Enter number of pages: 6000

==== Basic Details of All Books ===

Book 1:
Book Name: java basics
Author: alex
Price: Rs 501.0
Number of Pages: 6000

==== Complete Details of All Books ===

Book 1:
Book Details:
Name: java basics
Author: alex
Price: Rs 501.0
Number of Pages: 6000
PS C:\Users\student\Desktop\1BF24CS321> []
```

NG
NG
NG
NG
NG

```
2
3 class Student {
4     private String name;
5     private int age;
6     private String course;
7
8     Student(String name, int age, String course) {
9         this.name = name;
10        this.age = age;
11        this.course = course;
12    }
13
14     public String toString() {
15         return "Student Details [Name: " + name + ", Age: " + age + ", Course: " + course + "]";
16     }
17 }
18
19 public class ToStringExample {
20     Run main | Debug main | Run | Debug
21     public static void main(String[] args) {
22         Student s1 = new Student(name:"Alice", age:20, course:"Computer Science");
23         Student s2 = new Student(name:"Bob", age:22, course:"Electronics");
24
25         // Implicit call to toString()
26         System.out.println(s1);
27         System.out.println(s2);
28
29         // Explicit call to toString()
30         System.out.println("Explicit call: " + s1.toString());
31     }
32
33 }
```

```
41
42     // toString() method to display complete details
43     public String toString() {
44         return "Book Details:\n" +
45                "Name: " + name + "\n" +
46                "Author: " + author + "\n" +
47                "Price: Rs " + price + "\n" +
48                "Number of Pages: " + numPages;
49    }
50 }
51
52 public class Books {
53     Run main | Debug main | Run | Debug
54     public static void main(String[] args) {
55         Scanner scanner = new Scanner(System.in);
56
57         System.out.print(s:"Enter the number of books: ");
58         int n = scanner.nextInt();
59         scanner.nextLine(); // Consume newline
59
60         // Create an array to store n book objects
61         Book[] books = new Book[n];
62
63         // Input details for each book
64         for (int i = 0; i < n; i++) {
65             System.out.println("\nEnter details for Book " + (i + 1) + ":" );
66             books[i] = new Book(name:"", author:"", price:0.0, numPages:0);
67             books[i].setDetails();
68         }
69
70         // Display details of all books
71         System.out.println(x:"\n==== Basic Details of All Books ===");
72         for (int i = 0; i < n; i++) {
73             System.out.println("\nBook " + (i + 1) + ":" );
74             books[i].getDetails();
75         }
76 }
```

```
workspaces\storage (558) 3668db\25042021\7d84\learns\LearnJava\juc_13\juc13.java-project (bin) -> strings
Student Details [Name: Alice, Age: 20, Course: Computer Science]
Student Details [Name: Bob, Age: 22, Course: Electronics]
Explicit call: Student Details [Name: Alice, Age: 20, Course: Computer Science]
PS C:\Users\student\Desktop\1BF24CS321>
```

```
Student@251a69d7
Student@7344699f
PS C:\Users\student\Desktop\1BF24CS321>
```