JOURNAL-3

1. **Write a program which accepts starting character and ending character. Display one by one character from starting character till the ending character at the interval of one second using thread.**

CODE:

```
import java.util.Scanner;
public class CharacterThread implements Runnable
{
	private char startChar;
	private char endChar;
	public CharacterThread(char startChar, char endChar)
	{
		this.startChar = startChar;
		this.endChar = endChar;
	}
	@Override public void run()
	{
	try
	{
		for (char c = startChar; c <= endChar; c++)
		{
			System.out.print(c + " ");
			Thread.sleep(1000);
		}
	}
	catch (InterruptedException e)
	{
		e.printStackTrace();
	}
	}
	public static void main(String[] args)
	{
		Scanner scanner = new Scanner(System.in);
		System.out.print("Enter starting character: ");
		char startChar = scanner.next().charAt(0);
		System.out.print("Enter ending character: ");
		char endChar = scanner.next().charAt(0);
```

```
                CharacterThread characterThread = new
                CharacterThread(startChar, endChar);
                Thread thread = new Thread(characterThread);
                thread.start();
        }
    }
```

OUTPUT:

```
J:\sem-4\java>javac CharacterThread.java

J:\sem-4\java>java CharacterThread
Enter starting character: a
Enter ending character: j
a b c d e f g h i j
```

2. **Write a program that stores details of 5 employees and display this information after every10 second.**

CODE:

```
import java.util.ArrayList;
public class Ed
{
        public static void main(String[] args)
        {
                // Create an ArrayList to store employee objects ArrayList
                employees = new ArrayList();
                // Add 5 employees to the ArrayList employees.add(new
                Employee("John", "Doe", "john.doe@example.com"));
                employees.add(new Employee("Jane", "Doe",
                "jane.doe@example.com"));
                employees.add(new Employee("Bob", "Smith",
                "bob.smith@example.com"));
                employees.add(new Employee("Alice", "Johnson",
                "alice.johnson@example.com"));
                employees.add(new Employee("Tom", "Brown",
                "tom.brown@example.com"));
                // Create a new thread to display employee information every
                10 seconds Thread displayThread = new Thread(new
                Runnable()
```

```
{
        public void run()
        {
                while (true)
                {
                        System.out.println("Employee Details:");
                        for (Employee emp : employees)
                        {
                                System.out.println(emp);
                        }
                        System.out.println();
                        try
                        {
                                Thread.sleep(10000); // Wait for 10
                                seconds
                        }
                        catch (InterruptedException e)
                        {
                                e.printStackTrace();
                        }
                }
        }
    });
        // Start the thread displayThread.start();
        // Employee class with fields for first name, last name,
        and email class Employee
        {
                String firstName;
                String lastName;
                String email;
                public Employee(String firstName, String
                lastName, String email)
                {
                        this.firstName = firstName;
                        this.lastName = lastName;
                        this.email = email;
                }
```

```
        public String toString()
        {
            return firstName + " " + lastName + " (" +
            email + ")";
        }
    }
```

OUTPUT:

```
Employee Details:
John Doe (john.doe@example.com)
Jane Doe (jane.doe@example.com)
Bob Smith (bob.smith@example.com)
Alice Johnson (alice.johnson@example.com)
Tom Brown (tom.brown@example.com)
```

3. **Write a java application which accepts 10 names of student and their age. Sort names andage in descending order at an interval of 1 second using thread.**

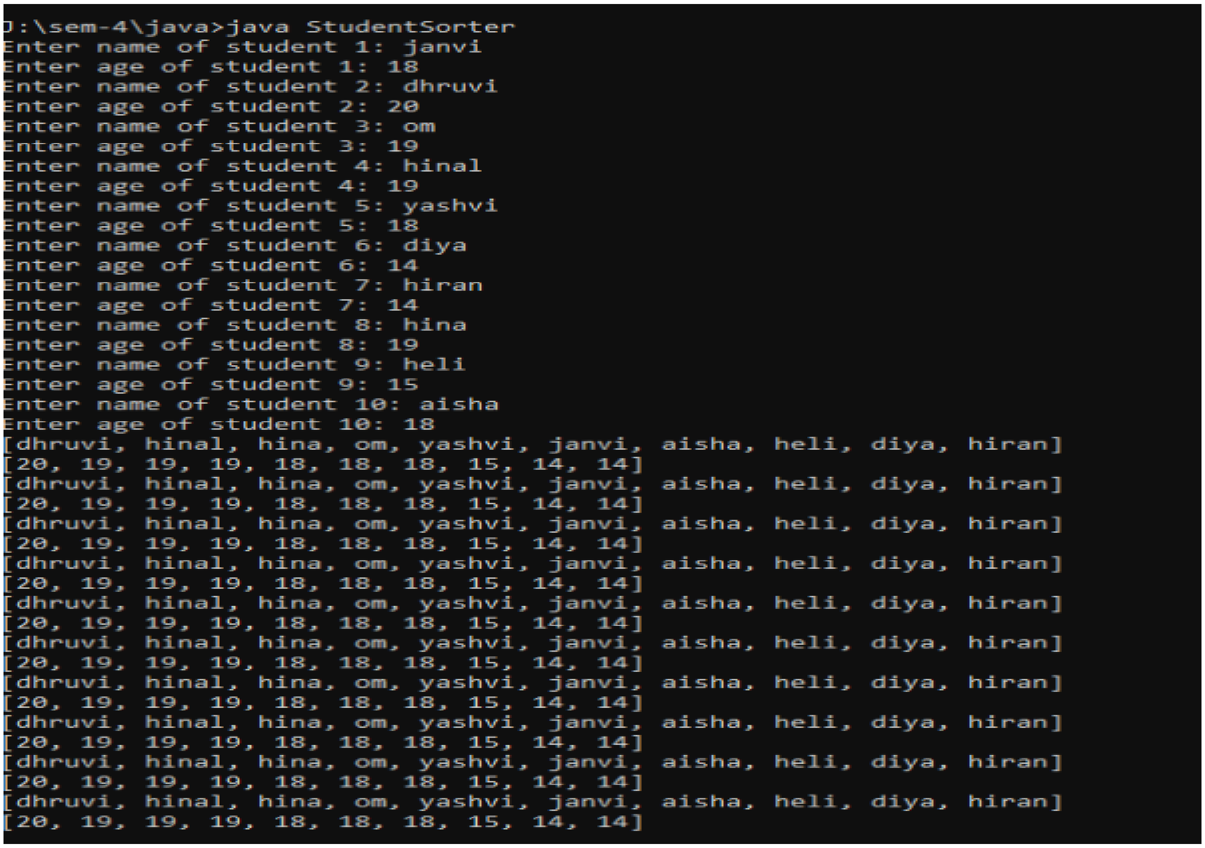
CODE:

```
import java.util.*;
public class StudentSorter implements Runnable
{
    private String[] names;
    private int[] ages;
    public StudentSorter(String[] names, int[] ages)
    {
        this.names = names;
        this.ages = ages;
    }
    public void run()
    {
        for (int i = 0; i < 10; i++)
        {
        try
        {
            Thread.sleep(1000); // wait for 1 second
        }
        catch (InterruptedException e)
```

```
        {
        e.printStackTrace();
        }
        sortDescending(); // sort the names and ages in descending
        order
        System.out.println(Arrays.toString(names));
        System.out.println(Arrays.toString(ages));
        }
    }
    private void sortDescending()
    {
        Map map = new HashMap<>();
        for (int i = 0; i < 10; i++)
        {
            map.put(names[i], ages[i]); // create a map of names and
            ages
        }
        List<Map.Entry> list = new ArrayList<>(map.entrySet());
        Collections.sort(list, new Comparator<Map.Entry>()
        {
            public int compare(Map.Entry o1, Map.Entry o2)
            {
                return (o2.getValue()).compareTo(o1.getValue());
                // sort in descending order based on age } });
                for (int i = 0; i < 10; i++)
                {
                    Map.Entry entry = list.get(i);
                    names[i] = entry.getKey();
                    // update the sorted names array ages[i] =
                    entry.getValue();
                    // update the sorted ages array
                }
            }
        public static void main(String[] args)
        {
            Scanner scanner = new Scanner(System.in);
            String[] names = new String[10];
```

```
                int[] ages = new int[10];
                for (int i = 0; i < 10; i++)
                {
                        System.out.print("Enter name of student " + (i+1)
                        + ": ");
                        names[i] = scanner.next();
                        System.out.print("Enter age of student " + (i+1) +
                        ": ");
                        ages[i] = scanner.nextInt();
                }
                StudentSorter sorter = new StudentSorter(names, ages);
                Thread thread = new Thread(sorter);
                thread.start();
        }
}
```

OUTPUT:



```
D:\sem-4\java>java StudentSorter
Enter name of student 1: janvi
Enter age of student 1: 18
Enter name of student 2: dhruvi
Enter age of student 2: 20
Enter name of student 3: om
Enter age of student 3: 19
Enter name of student 4: hinal
Enter age of student 4: 19
Enter name of student 5: yashvi
Enter age of student 5: 18
Enter name of student 6: diya
Enter age of student 6: 14
Enter name of student 7: hiran
Enter age of student 7: 14
Enter name of student 8: hina
Enter age of student 8: 19
Enter name of student 9: heli
Enter age of student 9: 15
Enter name of student 10: aisha
Enter age of student 10: 18
[dhruvi, hinal, hina, om, yashvi, janvi, aisha, heli, diya, hiran]
[20, 19, 19, 19, 18, 18, 18, 15, 14, 14]
[dhruvi, hinal, hina, om, yashvi, janvi, aisha, heli, diya, hiran]
[20, 19, 19, 19, 18, 18, 18, 15, 14, 14]
[dhruvi, hinal, hina, om, yashvi, janvi, aisha, heli, diya, hiran]
[20, 19, 19, 19, 18, 18, 18, 15, 14, 14]
[dhruvi, hinal, hina, om, yashvi, janvi, aisha, heli, diya, hiran]
[20, 19, 19, 19, 18, 18, 18, 15, 14, 14]
[dhruvi, hinal, hina, om, yashvi, janvi, aisha, heli, diya, hiran]
[20, 19, 19, 19, 18, 18, 18, 15, 14, 14]
[dhruvi, hinal, hina, om, yashvi, janvi, aisha, heli, diya, hiran]
[20, 19, 19, 19, 18, 18, 18, 15, 14, 14]
[dhruvi, hinal, hina, om, yashvi, janvi, aisha, heli, diya, hiran]
[20, 19, 19, 19, 18, 18, 18, 15, 14, 14]
[dhruvi, hinal, hina, om, yashvi, janvi, aisha, heli, diya, hiran]
[20, 19, 19, 19, 18, 18, 18, 15, 14, 14]
[dhruvi, hinal, hina, om, yashvi, janvi, aisha, heli, diya, hiran]
[20, 19, 19, 19, 18, 18, 18, 15, 14, 14]
[dhruvi, hinal, hina, om, yashvi, janvi, aisha, heli, diya, hiran]
[20, 19, 19, 19, 18, 18, 18, 15, 14, 14]
```

4. **Create package stores. Under it create a class called stock with member variable (item_no, item_name, stock_availible, and cost). Under the default package create a class called sales with field name (qty_sold) and it is the child class of stores class. Write a program to print the**

CODE:

```
import java.util.Scanner;
class Book
{
        private int id;
        private String name;
        private int quantity;
        private String author;
        private Book next;
        public Book(int id, String name, int quantity, String author)
        {
                this.id = id;
                this.name = name;
                this.quantity = quantity;
                this.author = author;
                this.next = null;
                System.out.println("\nData Inserted Successfully.");
        }
        public int getId()
        {
                return id;
        }
        public void setId(int id)
        {
                this.id = id;
        }
        public String getName()
        {
                return name;
        }
        public void setName(String name)
        {
                this.name = name;
```

```
        }
        public int getQuantity()
        {
                return quantity;
        }
        public void setQuantity(int quantity)
        {
                this.quantity = quantity;
        }
        public String getAuthor()
        {
                return author;
        }
        public void setAuthor(String author)
        {
                this.author = author;
        }
        public Book getNext()
        {
                return next;
        }
        public void setNext(Book next)
        {
                this.next = next;
        }
}
class BookList
{
        private Book head;
        public BookList()
        {
                head = null;
        }
        public void addBookAtBeginning(int id, String name, int quantity,
        String author)
        {
```

```
        Book newBook = new Book(id, name, quantity, author);
        newBook.setNext(head);
        head = newBook;
    }
    public void addBookAtEnd(int id, String name, int quantity, String
    author)
    {
        Book newBook = new Book(id, name, quantity, author);
        if (head == null)
        {
            head = newBook;
        }
        else
        {
            Book current = head;
            while (current.getNext() != null)
            {
                current = current.getNext();
            }
            current.setNext(newBook);
        }
    }
    public void addBookAtPosition(int id, String name, int quantity,
    String author, int position)
    {
        if (position == 1)
        {
            addBookAtBeginning(id, name, quantity, author);
        }
        else
        {
            Book newBook = new Book(id, name, quantity, author);
            Book current = head;
            int currentPosition = 1;
            while (currentPosition < position - 1 && current != null)
            {
                current = current.getNext(); currentPosition++;
```

```
                }
                if (current != null)
                {
                        newBook.setNext(current.getNext());
                        current.setNext(newBook);
                }
                else
                {
                        System.out.println("Invalid position");
                }
        }
}
public void removeFirstBook()
{
        if (head == null)
        {
                System.out.println("List is empty");
        }
        else
        {
                head = head.getNext();
        }
}
public void removeLastBook()
{
        if (head == null)
        {
                System.out.println("List is empty");
        }
        else if (head.getNext() == null)
        {
                head = null;
        }
        else
        {
                Book current =head;
                while (current.getNext().getNext() != null)
```

```
                {
                        current = current.getNext();
                }
                        current.setNext(null);
            }
        }
        public void displayBooks()
        {
                if (head == null)
                {
                        System.out.println("List is empty");
                }
                else
                {
                        Book current = head;
                        System.out.println("-----------------------------------
                        ----------");
                        while (current != null)
                        {
                                System.out.println("ID: " + current.getId() +
                                ", Name: " + current.getName() + ",
                                Quantity: " + current.getQuantity() + ",
                                Author: " + current.getAuthor()); current =
                                current.getNext();
                         }
                        System.out.println("-----------------------------------
                        ----------");
                        }
                }
        }
        public class BOOK_DETAIL_01
        {
                public static void main(String[] args)
                {
                        int id;
                        String name;
                        int quantity;
```

```
String author;
Scanner scan = new Scanner(System.in);
BookList bookList = new BookList(); while (true)
{
        System.out.println("\n-------------------------
        --------------------");
        System.out.println("\nSingly Linked List
        Operations\n");
        System.out.println("----------------------------
        ------------------");
        System.out.println("1. Insert at Begining.");
        System.out.println("2. Insert at End.");
        System.out.println("3. Insert at Position.");
        System.out.println("4. Delete from Head.");
        System.out.println("5. Delete from Tail.");
        System.out.println("6. Display Data.");
        System.out.println("7. Exit.");
        System.out.println("----------------------------
        ------------------");
        System.out.print("Enter your Choice : ");
        int choice = scan.nextInt();
        switch (choice)
        {
        case 1 :
                System.out.print("Enter Your ID : ");
                id=scan.nextInt();
                scan.nextLine();
                System.out.print("Enter Your Name :
                ");
                name=scan.nextLine();
                System.out.print("Enter Quantity of
                Books : ");
                quantity=scan.nextInt();
                scan.nextLine();
                System.out.print("Enter Author Name
                : ");
```

```
            author=scan.nextLine();
            bookList.addBookAtBeginning(id,na
            me,quantity,author);
        break;
        case 2 :
            System.out.print("Enter Your ID : ");
            id=scan.nextInt();
            scan.nextLine();
            System.out.print("Enter Your Name :
            ");
            name=scan.nextLine();
            System.out.print("Enter Quantity of
            Books : ");
            quantity=scan.nextInt();
            scan.nextLine();
            System.out.print("Enter Author Name
            : ");
            author=scan.nextLine();
            bookList.addBookAtEnd(id,name,qua
            ntity,author);
        break;
        case 3 :
            int position;
            System.out.print("Enter Position you
            want to Insert Record : ");
            position=scan.nextInt();
            System.out.print("Enter Your ID : ");
            id=scan.nextInt();
            scan.nextLine();
            System.out.print("Enter Your Name :
            ");
            name=scan.nextLine();
            System.out.print("Enter Quantity of
            Books : ");
            quantity=scan.nextInt();
            scan.nextLine();
```

```
                    System.out.print("Enter Author Name
                    : ");
                    author=scan.nextLine();
                    bookList.addBookAtPosition(id,name
                    ,quantity,author,position);
                break;
                case 4 :
                    bookList.removeFirstBook();
                    System.out.println("\nData Deleted
                    Successfully.");
                break;
                case 5 :
                    bookList.removeLastBook();
                    System.out.println("\nData Deleted
                    Successfully.");
                break;
                case 6 :
                    bookList.displayBooks();
                break;
                case 7 :
                    System.out.println("Program
                    Exited...");
                    System.exit(0);
                break;
                default :
                    System.out.println("Invalid choice.
                    Try again.");
                break;
            }
        }
    }
}
```

5. **current stock of each item and perform addition. 5. Create a class namely Vehicle to maintain vehicle data like chassisNo, nameOfVehicle, colour, owner using singly circular linked list. Perform following operations on student list: a. Add vehicle details at the end of the list b. Remove last vehicle detail in the list c. Display all vehicle details in the list.**

CODE:

```
import java.lang.*;
class Vehicle
{
        private int chassisNo;
        private String nameOfVehicle;
        private String colour;
        private String owner;
        private Vehicle next;
        public Vehicle(int chassisNo, String nameOfVehicle, String colour,
        String owner)
        {
                this.chassisNo = chassisNo;
                this.nameOfVehicle = nameOfVehicle;
                this.colour = colour;
                this.owner = owner;
                this.next = null;
        }
        public void setNext(Vehicle next)
        {
                this.next = next;
        }
        public Vehicle getNext()
        {
                return next;
        }
        public void addVehicle(Vehicle vehicle)
        {
                Vehicle current = this;
                while (current.next == this)
                {
```

```
                current = current.next;
            }
            current.next = vehicle;
            vehicle.next = this;
        }
        public void removeLastVehicle()
        {
            Vehicle current = this;
            while (current.next.next != this)
            {
                current = current.next;
            }
            current.next = this;
        }
        public void displayAllVehicles()
        {
            Vehicle current = this;
            do
            {
                System.out.println("Chassis No: " + current.chassisNo);
                System.out.println("Name of Vehicle: " +
                current.nameOfVehicle);
                System.out.println("Colour: " + current.colour);
                System.out.println("Owner: " + current.owner);
                System.out.println("------------------------");
                current = current.next;
            }
            while (current != this);
        }
    }
    public class vehicle_detail
    {
        public static void main(String[] args)
        {
            Vehicle vehicle1 = new Vehicle(1234, "Car", "Red", "John");
            Vehicle vehicle2 = new Vehicle(5678, "Motorcycle", "Blue",
            "Jane");
```

```
            Vehicle vehicle3 = new Vehicle(9012, "Truck", "Green",
            "Bob");
            vehicle1.addVehicle(vehicle2);
            vehicle1.addVehicle(vehicle3);
            vehicle1.displayAllVehicles();
            vehicle1.removeLastVehicle();
            vehicle1.displayAllVehicles();
        }
    }
```

OUTPUT:

```
J:\sem-4\java>javac vehicle_detail.java

J:\sem-4\java>java vehicle_detail
Chassis No: 1234
Name of Vehicle: Car
Colour: Red
Owner: John
-------------------------
Chassis No: 9012
Name of Vehicle: Truck
Colour: Green
Owner: Bob
-------------------------
Chassis No: 1234
Name of Vehicle: Car
Colour: Red
Owner: John
-------------------------
```

6. **Create a class namely Book to maintain Book details like id, name, quantity and author using singly linked list. Perform following operations on book list: a. Add book details in the begging of the list b. Add book details at the end of the list c. Add book detail at particular position d. Remove first book detail from the list e. Remove last book detail from the list f. Display all book details in the list.**

CODE:

```
import java.util.Scanner;
class Book
{
    private int id;
```

```
private String name;
private int quantity;
private String author;
private Book next;
public Book(int id, String name, int quantity, String author)
{
        this.id = id;
        this.name = name;
        this.quantity = quantity;
        this.author = author;
        this.next = null;
        System.out.println("\nData Inserted Successfully.");
}
public int getId()
{
        return id;
}
public void setId(int id)
{
        this.id = id;
}
public String getName()
{
        return name;
}
public void setName(String name)
{
        this.name = name;
}
public int getQuantity()
{
        return quantity;
}
public void setQuantity(int quantity)
{
        this.quantity = quantity;
}
```

```
        public String getAuthor()
        {
                return author;
        }
        public void setAuthor(String author)
        {
                this.author = author;
        }
        public Book getNext()
        {
                return next;
        }
        public void setNext(Book next)
        {
                this.next = next;
        }
}
class BookList
{
        private Book head;
        public BookList()
        {
                head = null;
        }
        public void addBookAtBeginning(int id, String name, int quantity,
        String author)
        {
                Book newBook = new Book(id, name, quantity, author);
                newBook.setNext(head);
                head = newBook;
        }
        public void addBookAtEnd(int id, String name, int quantity, String
        author)
        {
                Book newBook = new Book(id, name, quantity, author);
                if (head == null)
                {
```

```
                head = newBook;
            }
        else
        {
                Book current = head;
                while (current.getNext() != null)
                {
                        current = current.getNext();
                }
                        current.setNext(newBook);
        }
}
public void addBookAtPosition(int id, String name, int quantity,
String author, int position)
{
        if (position == 1)
        {
                addBookAtBeginning(id, name, quantity, author);
        }
        else
        {
                Book newBook = new Book(id, name, quantity, author);
                Book current = head;
                int currentPosition = 1;
                while (currentPosition < position - 1 && current != null)
                {
                        current = current.getNext();
                        currentPosition++;
                }
                if (current != null)
                {
                        newBook.setNext(current.getNext());
                        current.setNext(newBook);
                }
                else
                {
                         System.out.println("Invalid position");
```

```
                }
        }
}
public void removeFirstBook()
{
        if (head == null)
        {
                System.out.println("List is empty");
        }
        else
        {
                head = head.getNext();
        }
}
public void removeLastBook()
{
        if (head == null)
        {
                System.out.println("List is empty");
        }
        else if (head.getNext() == null)
        {
                head = null;
        }
        else
        {
                Book current =head;
                while (current.getNext().getNext() != null)
                {
                        current = current.getNext();
                }
                current.setNext(null);
        }
 }
public void displayBooks()
{
        if (head == null)
```

```
        {
                System.out.println("List is empty");
        }
        else
        {
                Book current = head;
                System.out.println("-----------------------------------------
                --");
                while (current != null)
                {
                        System.out.println("ID: " + current.getId() + ",
                        Name: " + current.getName() + ", Quantity: " +
                        current.getQuantity() + ", Author: " +
                        current.getAuthor());
                        current = current.getNext();
                }
                System.out.println("-----------------------------------------
                --");
        }
}
public class BOOK_DETAIL_01
{
        public static void main(String[] args)
        {
                int id;
                String name;
                int quantity;
                String author;
                Scanner scan = new Scanner(System.in);
                BookList bookList = new BookList();
                while (true)
                {
                        System.out.println("\n-----------------------------
                        ------------");
                        System.out.println("\nSingly Linked List
                        Operations\n");
```

```
System.out.println("-------------------------------------
----------");
System.out.println("1. Insert at Begining.");
System.out.println("2. Insert at End.");
System.out.println("3. Insert at Position.");
System.out.println("4. Delete from Head.");
System.out.println("5. Delete from Tail.");
System.out.println("6. Display Data.");
System.out.println("7. Exit.");
System.out.println("-------------------------------------
----------");
System.out.print("Enter your Choice : ");
int choice = scan.nextInt();
switch (choice)
{
case 1 :
        System.out.print("Enter Your ID : ");
        id=scan.nextInt();
        scan.nextLine();
        System.out.print("Enter Your Name : ");
        name=scan.nextLine();
        System.out.print("Enter Quantity of Books :
        ");
        quantity=scan.nextInt();
        scan.nextLine();
        System.out.print("Enter Author Name : ");
        author=scan.nextLine();
        bookList.addBookAtBeginning(id,name,qua
        ntity,author);
break;
case 2 :
        System.out.print("Enter Your ID : ");
        id=scan.nextInt();
        scan.nextLine();
        System.out.print("Enter Your Name : ");
        name=scan.nextLine();
```

```
            System.out.print("Enter Quantity of Books :
            ");
            quantity=scan.nextInt();
            scan.nextLine();
            System.out.print("Enter Author Name : ");
            author=scan.nextLine();
            bookList.addBookAtEnd(id,name,quantity,a
            uthor);
        break;
        case 3 :
            int position;
            System.out.print("Enter Position you want
            to Insert Record : ");
            position=scan.nextInt();
            System.out.print("Enter Your ID : ");
            id=scan.nextInt();
            scan.nextLine();
            System.out.print("Enter Your Name : ");
            name=scan.nextLine();
            System.out.print("Enter Quantity of Books :
            ");
            quantity=scan.nextInt();
            scan.nextLine();
            System.out.print("Enter Author Name : ");
            author=scan.nextLine();
            bookList.addBookAtPosition(id,name,quanti
            ty,author,position);
        break;
        case 4 :
            bookList.removeFirstBook();
            System.out.println("\nData Deleted
            Successfully.");
        break;
        case 5 :
            bookList.removeLastBook();
            System.out.println("\nData Deleted
            Successfully.");
```

```
                    break;
                    case 6 :
                        bookList.displayBooks();
                        break;
                    case 7 :
                        System.out.println("Program Exited...");
                        System.exit(0);
                    break;
                    default :
                        System.out.println("Invalid choice. Try
                        again.");
                        break;
                    }
                }
            }
        }
```

OUTPUT:

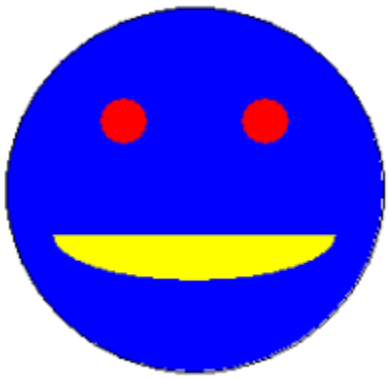
```
J:\>cd sem-4

J:\sem-4>cd java

J:\sem-4\java>javac BOOK_DETAIL_01.java

J:\sem-4\java>java BOOK_DETAIL_01

-----------------------------------------------

Singly Linked List Operations

-----------------------------------------------
1. Insert at Begining.
2. Insert at End.
3. Insert at Position.
4. Delete from Head.
5. Delete from Tail.
6. Display Data.
7. Exit.
-----------------------------------------------
Enter your Choice : 1
Enter Your ID : 100
Enter Your Name : xyz
Enter Quantity of Books : 2
Enter Author Name : xyz

Data Inserted Successfully.

-----------------------------------------------

Singly Linked List Operations

-----------------------------------------------
1. Insert at Begining.
2. Insert at End.
3. Insert at Position.
4. Delete from Head.
5. Delete from Tail.
6. Display Data.
7. Exit.
```

7. Write a programme to draw smiley with colour using applet.

CODE:

```
import java.applet.Applet;
import java.awt.Color;
import java.awt.Graphics;
public class Smiley extends Applet
{
        /*<applet code="Smiley.class" width="100"
        height="100"></applet>*/
        public void paint(Graphics g)
        {
                // draw face g.setColor(Color.YELLOW);
                g.fillOval(50, 50, 200, 200);
                g.setColor(Color.BLACK);
                g.drawOval(50, 50, 200, 200);
                // draw eyes g.setColor(Color.BLUE);
                g.fillOval(100, 100, 25, 25);
                g.fillOval(175, 100, 25, 25);
                // draw mouth g.setColor(Color.RED);
                g.fillArc(75, 150, 150, 50, 180, 180);
```

OUTPUT:

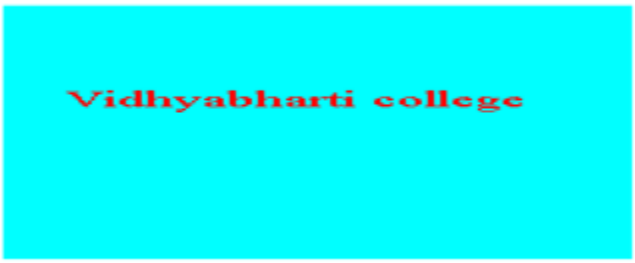


8. **Create an applet which displays a solid square having red colour. Display name of your college 21BCA92 43 Java journal within the square with font style =’Times New Roman’, font size=12 and font colour=’Yellow’.**

CODE:

```
import java.applet.Applet;
import java.awt.Color;
import java.awt.Font;
import java.awt.Graphics;
public class CollegeSquare_1 extends Applet
{
        /*<applet code="CollegeSquare_1.class" width="100"
        height="100"></applet>*/
        public void paint(Graphics g)
        {
                // draw square
                g.setColor(Color.cyan);
                g.fillRect(50, 50, 200, 200);
                // set font
                Font font = new Font("Times New Roman", Font.PLAIN, 18);
                g.setFont(font);
                // draw text
                g.setColor(Color.red);
                g.drawString("Vidhyabharti college", 70, 130);
        }
}
```

OUTPUT:



9. **Write a program to draw circle inside a square in applet with different colours.**

CODE:

```
import java.applet.Applet;
import java.awt.Color;
import java.awt.Graphics;
public class CircleSquare extends Applet
{
        public void paint(Graphics g)
        {
                // draw square g.setColor(Color.pink);
                g.fillRect(50, 50, 200, 200);
                // draw circle g.setColor(Color.YELLOW);
                g.fillOval(75, 75, 150, 150);
        }
}
```

OUTPUT:

10. **Write an applet program which accepts number of ovals user wants to display usingparameter tag and draws ovals in different positions.**

CODE:

```
import java.applet.Applet;
import java.awt.Color;
import java.awt.Graphics;
import java.util.Random;
public class OvalApplet extends Applet
```

```
{
        /* <applet code="OvalApplet.class" width="500" height="500">
        <param name="numOvals" value="5"> </applet>*/
        int numOvals;
        public void init()
        {
                String num = getParameter("numOvals");
                numOvals = Integer.parseInt(num);
        }
        public void paint(Graphics g)
        {
                for(int i = 1; i <= numOvals; i++)
                {
                        int x = (int)(Math.random() * getWidth());
                        int y = (int)(Math.random() * getHeight());
                        int width = (int)(Math.random() * 100);
                        int height = (int)(Math.random() * 100);
                        g.drawOval(x, y, width, height);
                }
        }
}
```

OUTPUT: