Experiment-2.4

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Subject Name: Java Lab **Subject Code:** 21CSP-319

1. Aim:

Create a menu-based Java application with the following options.1. Add an Employee 2. Display All 3.Exit If option 1 is selected, the application should gather details of the employee like employee name, employee id, designation and salary and store it in a file. If option 2 is selected, the application should display all the employee details. If option 3 is selected the application should exit.

2. Objective:

• To learn about concept of File Handling in java.
• To learn about LinkedList, Exception Handling in java

3. Algorithm:

1. Create a class Employee to store its details like id, name ,salary, age, etc.
2. Create a EmployeeManager class where you ask for your choice using:

- Add an employee
- Display All
- Exit

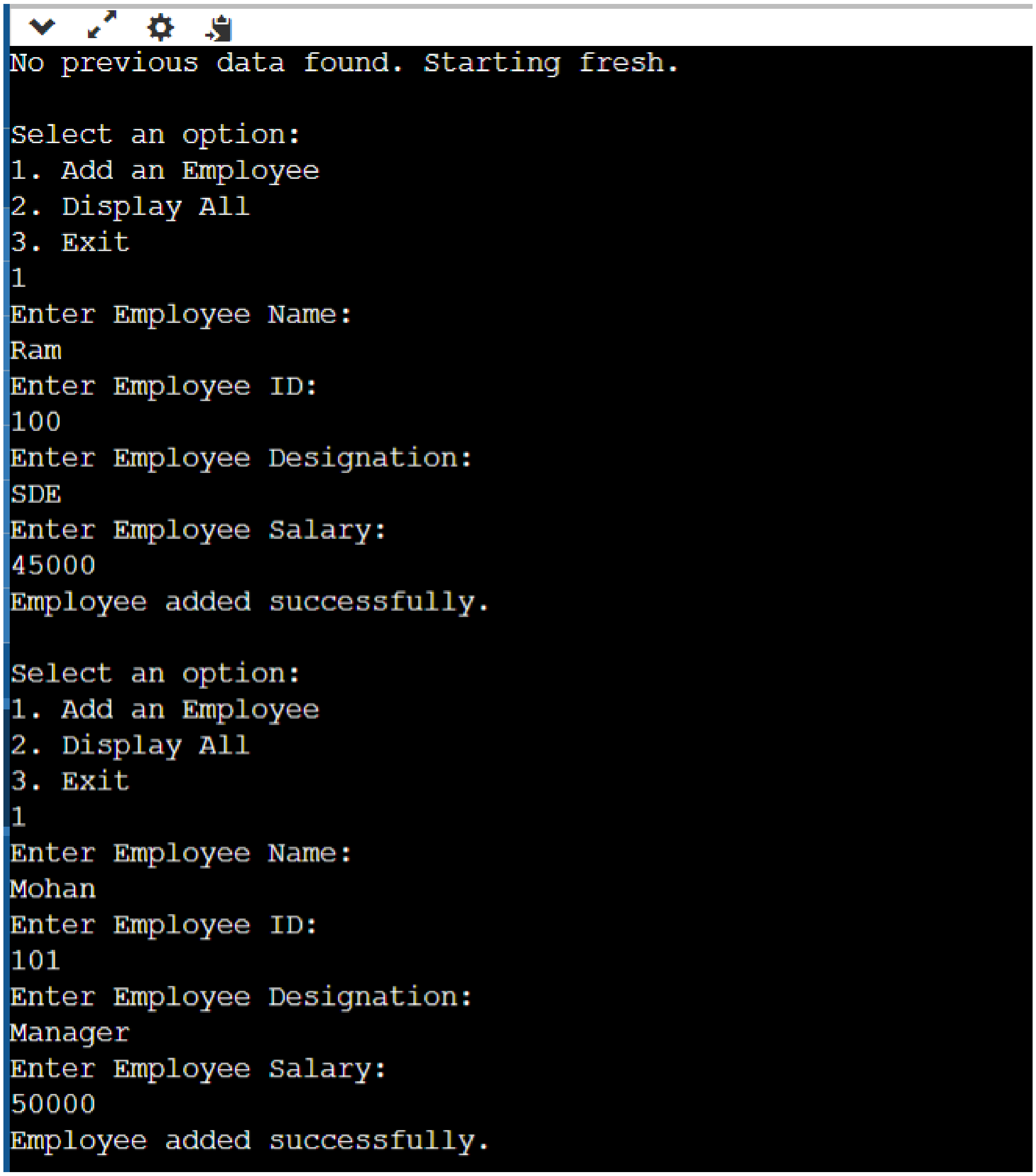
4. Code:

```
import java.io.*;
import java.util.LinkedList;
import java.util.Scanner;

class Employee implements Serializable {
   private static final long serialVersionUID = 1L;

   private String name;
   private int id;
   private String designation;
   private double salary;
```

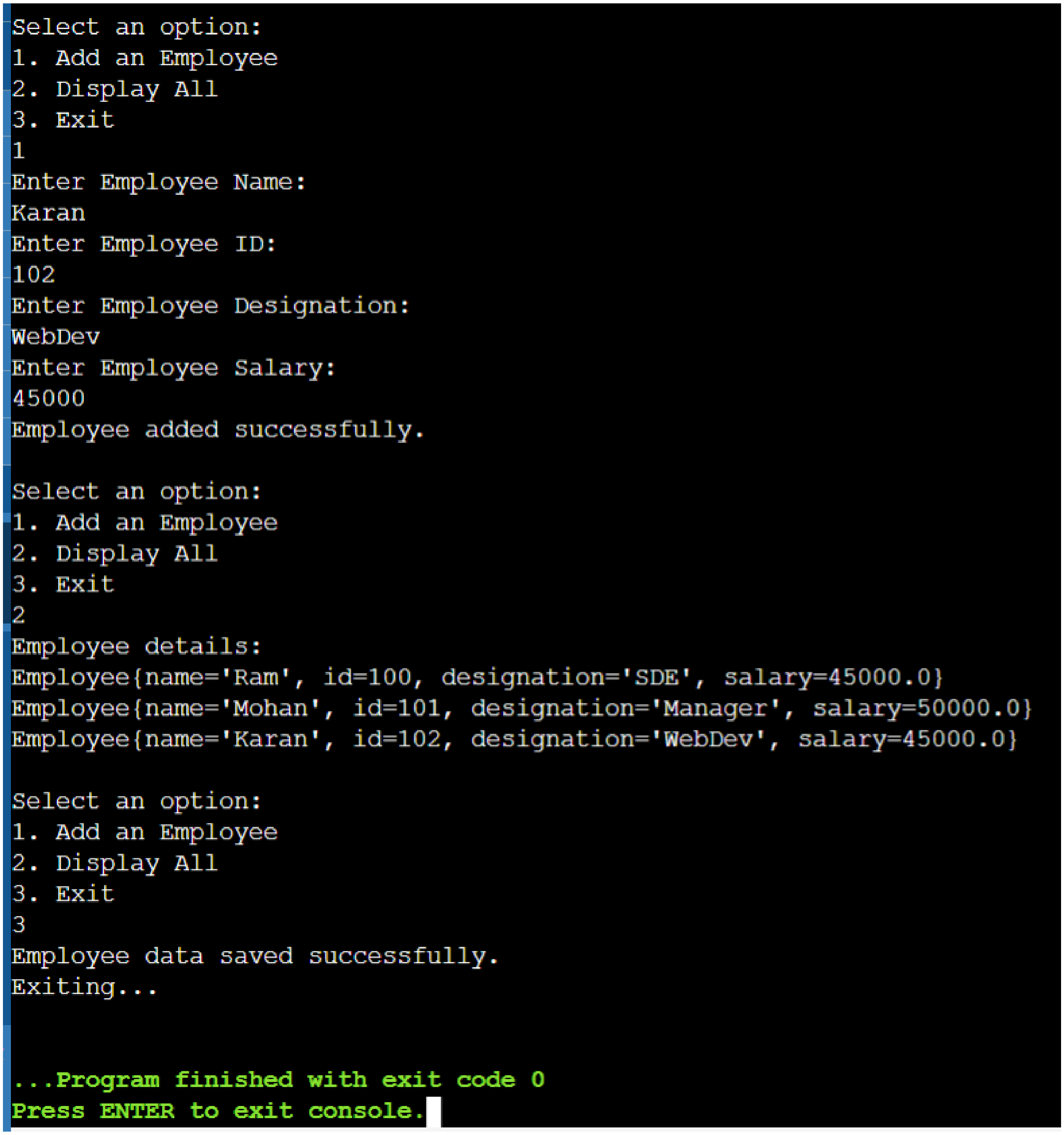
```
    public Employee(String name, int id, String designation, double salary) {
        this.name = name;
        this.id = id;
        this.designation = designation;
        this.salary = salary;
    }

    @Override
    public String toString() {
        return "Employee{" +
                "name='" + name + '\'' +
                ", id=" + id +
                ", designation='" + designation + '\'' +
                ", salary=" + salary +
                '}';
    }
}

public class EmployeeManagement {
    private static final String FILE_NAME = "employee_data.dat";
    private static LinkedList<Employee> employeeList = new LinkedList<>();

    public static void main(String[] args) {
        loadEmployeeDataFromFile();

        Scanner scanner = new Scanner(System.in);
        boolean running = true;

        while (running) {
            System.out.println("\nSelect an option:");
            System.out.println("1. Add an Employee");
            System.out.println("2. Display All");
            System.out.println("3. Exit");
            int choice = scanner.nextInt();
            scanner.nextLine(); // Consume the newline character

            switch (choice) {
                case 1:
                    addEmployee(scanner);
                    break;
                case 2:
                    displayAllEmployees();
                    break;
                case 3:
                    saveEmployeeDataToFile();
                    running = false;
                    System.out.println("Exiting...");
                    break;
                default:
                    System.out.println("Invalid choice!");
            }
        }

        scanner.close();
    }

    private static void addEmployee(Scanner scanner) {
        System.out.println("Enter Employee Name:");
        String name = scanner.nextLine();

        System.out.println("Enter Employee ID:");
        int id = scanner.nextInt();
        scanner.nextLine(); // Consume the newline character

        System.out.println("Enter Employee Designation:");
        String designation = scanner.nextLine();

        System.out.println("Enter Employee Salary:");
        double salary = scanner.nextDouble();
        scanner.nextLine(); // Consume the newline character

        Employee employee = new Employee(name, id, designation, salary);
        employeeList.add(employee);
        System.out.println("Employee added successfully.");
    }

    private static void displayAllEmployees() {
        if (employeeList.isEmpty()) {
            System.out.println("No employees to display.");
        } else {
            System.out.println("Employee details:");
            for (Employee employee : employeeList) {
                System.out.println(employee);
            }
        }
    }

    private static void loadEmployeeDataFromFile() {
        try (ObjectInputStream ois = new ObjectInputStream(new
FileInputStream(FILE_NAME))) {
            employeeList = (LinkedList<Employee>) ois.readObject();
            System.out.println("Employee data loaded successfully.");
        } catch (FileNotFoundException e) {
            System.out.println("No previous data found. Starting fresh.");
        } catch (IOException | ClassNotFoundException e) {
            System.out.println("Error loading employee data from file: " +
e.getMessage());
        }
    }

    private static void saveEmployeeDataToFile() {
        try (ObjectOutputStream oos = new ObjectOutputStream(new
FileOutputStream(FILE_NAME))) {
```

```
            oos.writeObject(employeeList);
            System.out.println("Employee data saved successfully.");
        } catch (IOException e) {
            System.out.println("Error saving employee data to file: " + e.getMessage());
        }
    }
}
```

5. Output



```
No previous data found. Starting fresh.

Select an option:
1. Add an Employee
2. Display All
3. Exit
1
Enter Employee Name:
Ram
Enter Employee ID:
100
Enter Employee Designation:
SDE
Enter Employee Salary:
45000
Employee added successfully.

Select an option:
1. Add an Employee
2. Display All
3. Exit
1
Enter Employee Name:
Mohan
Enter Employee ID:
101
Enter Employee Designation:
Manager
Enter Employee Salary:
50000
Employee added successfully.
```



```
Select an option:
1. Add an Employee
2. Display All
3. Exit
1
Enter Employee Name:
Karan
Enter Employee ID:
102
Enter Employee Designation:
WebDev
Enter Employee Salary:
45000
Employee added successfully.

Select an option:
1. Add an Employee
2. Display All
3. Exit
2
Employee details:
Employee{name='Ram', id=100, designation='SDE', salary=45000.0}
Employee{name='Mohan', id=101, designation='Manager', salary=50000.0}
Employee{name='Karan', id=102, designation='WebDev', salary=45000.0}

Select an option:
1. Add an Employee
2. Display All
3. Exit
3
Employee data saved successfully.
Exiting...


...Program finished with exit code 0
Press ENTER to exit console.
```

6. Learning outcomes:

- Learnt about concept of File Handling in java.
- Learnt about LinkedList, Exception Handling in java