**Exercise 4: Employee Management System**

**Code:**

import java.util.Scanner;

class Employee {

    int employeeId;

    String name;

    String position;

    double salary;

    public Employee(int employeeId, String name, String position, double salary) {

        this.employeeId = employeeId;

        this.name = name;

        this.position = position;

        this.salary = salary;

    }

    public String toString() {

        return "ID: " + employeeId + ", Name: " + name + ", Position: " + position + ", Salary: " + salary;

    }

}

public class EmployeeManagementSystem {

    Employee[] employees;

    int size;

    public EmployeeManagementSystem(int capacity) {

        employees = new Employee[capacity];

        size = 0;

    }

    public boolean addEmployee(Employee emp) {

        employees[size++] = emp;

        return true;

    }

    public Employee searchEmployee(int employeeId) {

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

            if (employees[i].employeeId == employeeId) {

                return employees[i];

            }

        }

        return null;

    }

    public void traverseEmployees() {

        if (size == 0) {

            System.out.println("No employees to display.");

            return;

        }

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

            System.out.println(employees[i]);

        }

    }

    public boolean deleteEmployee(int employeeId) {

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

            if (employees[i].employeeId == employeeId) {

                for (int j = i; j < size - 1; j++) {

                    employees[j] = employees[j + 1];

                }

                employees[size - 1] = null;

                size--;

                return true;

            }

        }

        return false;

    }

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);

        EmployeeManagementSystem system = new EmployeeManagementSystem(10);

        while (true) {

            System.out.println("\n--- Employee Management System ---");

            System.out.println("1. Add Employee");

            System.out.println("2. Search Employee");

            System.out.println("3. Traverse Employees");

            System.out.println("4. Delete Employee");

            System.out.println("5. Exit");

            System.out.print("Enter your choice: ");

            int choice = sc.nextInt();

            sc.nextLine(); // consume newline

            switch (choice) {

                case 1:

                    System.out.print("Enter ID: ");

                    int id = sc.nextInt();

                    sc.nextLine();

                    System.out.print("Enter Name: ");

                    String name = sc.nextLine();

                    System.out.print("Enter Position: ");

                    String position = sc.nextLine();

                    System.out.print("Enter Salary: ");

                    double salary = sc.nextDouble();

                    system.addEmployee(new Employee(id, name, position, salary));

                    break;

                case 2:

                    System.out.print("Enter ID to search: ");

                    int searchId = sc.nextInt();

                    Employee found = system.searchEmployee(searchId);

                    if (found != null) {

                        System.out.println("Employee found: " + found);

                    } else {

                        System.out.println("Employee not found.");

                    }

                    break;

                case 3:

                    system.traverseEmployees();

                    break;

                case 4:

                    System.out.print("Enter ID to delete: ");

                    int deleteId = sc.nextInt();

                    if (system.deleteEmployee(deleteId)) {

                        System.out.println("Employee deleted successfully.");

                    } else {

                        System.out.println("Employee not found.");

                    }

                    break;

                case 5:

                    System.out.println("Exiting program.");

                    sc.close();

                    return;

                default:

                    System.out.println("Invalid choice. Try again.");

            }

        }

    }

}

**Output:**





