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## **Section: 2A** **Employee Management System: Project Report** **1. Functional Requirements**

The Employee Management System is designed to handle employee records efficiently, providing functionalities to add, update, delete, display, and promote employees. Key requirements include:

## - **Login System:** User authentication to ensure secure access. - **Employee Types:** Support for managing both Managers and Workers with unique attributes: - **Managers**: Department (dept) **- Workers:** Hours worked (hours\_worked) **- Data Storage:** Use of a CSV file (Management.csv) for persistent data storage. **- Employee Management:** - Add new employees. - Display all employees with relevant details. - Update existing employee records. - Delete employee records. - Promote employees by increasing their salary based on a percentage input. **- Inheritance:** Implement OOP principles with Manager and Worker classes inheriting from the base Employee class. **2. CRUD Operations**

### **Create**

- Adding a new employee (Manager or Worker).  
- Input data such as name, age, salary, department (for Managers), or hours worked (for Workers).

### **Read**

- Displaying a list of all employees, showing their specific attributes.  
- Differentiates between Manager and Worker while displaying their details.

### **Update**

- Modify employee details like name, age, salary, department, or hours worked.  
- Allows selective updates (fields can remain unchanged if not specified).

### **Delete**

- Remove an employee from the system by specifying their name.  
- Updates the CSV file to reflect the deletion.

## **3. Scope**

The system is ideal for small to medium-sized businesses requiring a simple, file-based employee management solution. It emphasizes:

**- Ease of Use:** Simple menu-driven interface for non-technical users.  
- **Extendability:** The OOP structure supports future enhancements, such as:  
 - Adding more employee roles.  
 - Integration with a database for scalable storage.  
 - Implementing additional features like attendance tracking.  
- **Cost-Effective Solution**: No need for third-party software.

**Limitations:**  
- The system relies on a CSV file, which may not scale well for very large datasets.  
- Requires user input validation and additional error handling to ensure robustness.

## **4. Problem Statement**

**"Managing employee records manually is time-consuming, error-prone, and inefficient. This Employee Management System provides a streamlined, computerized solution to handle employee data, ensuring quick access, easy updates, and secure management."**

**The primary challenges addressed include:**  
- Elimination of manual errors in record-keeping.  
- Secure and structured storage of employee data.  
- Providing a flexible, user-friendly interface for HR tasks like updating salaries or promoting employees.  
- Differentiating between various employee roles to manage specific attributes.

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