

SOFTWARE ENGINEERING PRINCIPLES

PAYROLL MANAGEMENT SYSTEM

Software Requirements Specification (SRS)

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FUNCTIONAL REQUIREMENT:

PURPOSE

The purpose of this document is to build an online system to manage payroll to make salary payment easy

PROJECT SCOPE

The purpose of the online payroll management system is to ease payroll management and to create a convenient and easy-to-use application for employers, trying to pay salaries to their

employees. The system is based on a relational database with its payroll management. We will have a database server supporting thousands of employees in the system of that organisation. Above all, we hope to provide a comfortable user experience along with the best pricing available.

LIST OF FUNCTIONALITIES

1. Employee Information Management:
2. Time and Attendance Tracking:
3. Payroll Calculation and Processing
4. Taxation and Deduction Management
5. Payment Processing
6. Reporting and Analytics
7. Expense Reimbursement
8. Employee Self-Service Portal

Use Case ID:	1		
Use Case Name:	Employee Information Management:		
Created By:	Rahul(21MID0103)	Last Updated By:	
Date Created:	august 8, 2023	Date Last Updated:	
Actors:	HR Manager, Payroll Administrator		
Description:	This functionality involves storing and managing employee details such as personal information, job roles, and salary structures		
Preconditions:	<ul style="list-style-type: none">• Authorized user with access to employee records.		

Post conditions:	<ul style="list-style-type: none"> Employee information is accurately stored and updated.
Normal Flow	<ul style="list-style-type: none"> HR Manager logs in. HR Manager navigates to employee management section. HR Manager selects an employee's profile. HR Manager updates the necessary details. Changes are saved in the system.
Alternative Flows:	None
Exceptions:	Invalid data, unauthorized access

Use Case ID:	2		
Use Case Name:	Time and Attendance Tracking:		
Created By:	Rahul(21MID0103)	Last Updated By:	
Date Created:	august 8, 2023	Date Last Updated:	
Actors:	Employees, Managers		
Description:	This functionality involves recording employee work hours, absences, leaves, and overtime.		
Preconditions:	<ul style="list-style-type: none"> Employee is registered in the system. 		
Post conditions:	<ul style="list-style-type: none"> Accurate attendance and leave records are maintained.. 		

Normal Flow	<ul style="list-style-type: none"> Employee logs in. Employee records work hours or submits leave requests. Manager approves or rejects leave requests.
Alternative Flows:	None
Exceptions:	Overlapping leave requests, incorrect input.

Use Case ID:	3		
Use Case Name:	Payroll Calculation and Processing:		
Created By:	Rahul(21MID0103)	Last Updated By:	
Date Created:	august 8, 2023	Date Last Updated:	
Actors:	Payroll Administrator, Finance Manager		
Description:	This functionality involves calculating employee salaries, deductions, taxes, and generating paychecks.		
Preconditions:	<ul style="list-style-type: none"> Accurate attendance and leave data, up-to-date tax rates. 		
Post conditions:	<ul style="list-style-type: none"> Accurate payroll data and paychecks are generated. 		
Normal Flow	<ul style="list-style-type: none"> Payroll Administrator initiates payroll processing. System retrieves attendance and leave data. System calculates salaries, deductions, taxes, and bonuses. Paychecks are generated and distributed. 		
Alternative Flows:	None		
Exceptions:	Calculation errors, missing data.		

Use Case ID:	4		
Use Case Name:	Taxation and Deduction Management:		
Created By:	Rahul(21MID0103)	Last Updated By:	
Date Created:	august 8, 2023	Date Last Updated:	
Actors:	Tax Specialist, Payroll Administrator		
Description:	This functionality involves managing tax calculations, deductions, and contributions to comply with legal requirements		
Preconditions:	<ul style="list-style-type: none"> Accurate tax rate information, employee data. 		
Post conditions:	<ul style="list-style-type: none"> Accurate tax and deduction calculations. 		
Normal Flow	<ul style="list-style-type: none"> Tax Specialist updates tax rates and deduction policies. Payroll Administrator applies updated rates to calculations. 		
Alternative Flows:	None		
Exceptions:	Incorrect tax rates, policy updates.		

Use Case ID:	5		
Use Case Name:	Payment Processing:		
Created By:	Rahul(21MID0103)	Last Updated By:	
Date Created:	august 8, 2023	Date Last Updated:	
Actors:	Finance Manager, Bank		
Description:	This functionality involves processing and disbursing employee salaries to their designated bank accounts		

Preconditions:	<ul style="list-style-type: none"> Accurate payroll calculations, valid bank account information.
Post conditions:	<ul style="list-style-type: none"> Employees receive their salaries on time
Normal Flow	<ul style="list-style-type: none"> Finance Manager initiates payment processing. Payment files are generated. Payment files are sent to the bank for processing.
Alternative Flows:	None
Exceptions:	Incorrect bank account details, payment file errors..

Use Case ID:	6		
Use Case Name:	Reporting and Analytics:		
Created By:	Rahul(21MID0103)	Last Updated By:	
Date Created:	august 8, 2023	Date Last Updated:	
Actors:	Managers, Executives		
Description:	This functionality involves generating various reports and analytics related to payroll data.		
Preconditions:	<ul style="list-style-type: none"> Up-to-date payroll information. 		
Post conditions:	<ul style="list-style-type: none"> Comprehensive payroll reports are available for analysis. 		
Normal Flow	<ul style="list-style-type: none"> Manager selects the desired report type. System generates and displays the requested report. 		
Alternative Flows:	None		

Exceptions:	Report generation errors, missing data..
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Use Case ID:	7		
Use Case Name:	Expense Reimbursement		
Created By:	Rahul(21MID0103)	Last Updated By:	
Date Created:	august 8, 2023	Date Last Updated:	
Actors:	Employees, HR Manager		
Description:	This functionality involves processing and reimbursing employees for eligible expenses.		
Preconditions:	<ul style="list-style-type: none"> Check whether the correct name and amount details entered or not 		
Post conditions:	<ul style="list-style-type: none"> Reimbursement is processed and paid to the employee. 		
Normal Flow	<ul style="list-style-type: none"> Employee submits reimbursement request with supporting documents. HR Manager reviews and approves the request. Finance processes reimbursement payment. 		
Alternative Flows:	None		
Exceptions:	Missing documentation, ineligible expenses.		

Use Case ID:	8		
Use Case Name:	Employee Self-Service Portal		
Created By:	Rahul(21MID0103)	Last Updated By:	
Date Created:	august 8, 2023	Date Last Updated:	
Actors:	Employees		
Description:	This functionality allows employees to access and manage their own payroll-related information.		
Preconditions:	<ul style="list-style-type: none"> Employee has valid login credentials. 		
Post conditions:	<ul style="list-style-type: none"> Employees can view their pay stubs, tax information, and make adjustments. 		
Normal Flow	<ul style="list-style-type: none"> Employee logs into the self-service portal. Employee accesses their personal payroll information. Employee makes updates or views relevant details. 		
Alternative Flows:	None		
Exceptions:	login issues, restricted access.		

NON-FUNCTIONAL REQUIREMENTS

SAFETY REQUIREMENTS

If there is extensive damage to a wide portion of the database due to catastrophic failure, such as a disk crash, the recovery method restores a past copy of the database that was backed up to archival storage (typically tape) and reconstructs a more current state by reapplying or redoing the operations of committed transactions from the backed up log, up to the time of failure.

SECURITY REQUIREMENTS

Security systems need database storage just like many other applications. However, the special requirements of the security market mean that vendors must choose their database partner carefully.

SOFTWARE QUALITY ATTRIBUTES

Software quality attributes, also known as software quality characteristics or non-functional requirements, are important factors that contribute to the overall quality and performance of a software system. When it comes to a payroll management system, several key quality attributes should be considered:

- **Reliability:** The system should accurately calculate and process payroll data, ensuring that employees are paid correctly and on time. It should be able to handle unexpected situations, such as system failures or data discrepancies, and recover gracefully.
- **Accuracy:** The payroll calculations should be precise, ensuring that deductions, taxes, and payments are calculated accurately to prevent errors in employees' paychecks.
- **Security:** Payroll data often contains sensitive and confidential information, including personal employee details and financial data. The system should have robust security measures to protect against unauthorized access, data breaches, and cyberattacks.
- **Performance:** The system should be able to handle a large number of payroll transactions efficiently, especially during peak processing periods. This involves ensuring that response times are acceptable and that the system can scale to accommodate growing demands.
- **Scalability:** As the organization grows and the number of employees increases, the payroll system should be able to scale to accommodate the increased workload without a significant drop in performance.
- **Usability:** The user interface of the payroll system should be intuitive and easy to use for administrators responsible for managing payroll. This can help reduce errors and increase productivity.

- **Maintainability:** The system should be designed in a way that makes it easy to maintain and update. This includes well-organized code, clear documentation, and a modular architecture that allows for changes without disrupting the entire system.
- **Availability:** The payroll system should be available for use whenever it's needed. This may involve setting up redundancy, failover mechanisms, and backup systems to ensure uninterrupted service.
- **Compliance:** Payroll management involves adhering to various legal and regulatory requirements related to taxation, labor laws, and data protection. The system should support compliance with these regulations.
- **Auditability:** The system should maintain a detailed log of payroll transactions and changes, enabling administrators to trace and verify any discrepancies.
- **Integration:** Many organizations use a variety of software systems, such as HR management systems and accounting software, that need to integrate with the payroll system. Smooth integration is crucial for data consistency and accuracy.
- **Interoperability:** The ability of the payroll system to work seamlessly with different hardware, software, and network components is important, particularly in a heterogeneous IT environment.
- **Flexibility:** Business requirements can change over time. The system should be designed in a way that allows for easy customization and adaptation to accommodate future changes without major modifications.
- **Efficiency:** The system's resource usage, such as memory and processing power, should be optimized to prevent wastage and ensure efficient operation.
- **Error Handling:** The system should provide meaningful error messages and gracefully handle errors to guide users and administrators in resolving issues.
- **Considering these software quality attributes during the design, development, and testing phases of a payroll management system can help ensure that the final product meets the needs of the organization and its employees while maintaining high standards of reliability, security, and performance.**