## 

## Payroll System

**(Systems Requirement Document)**

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## General

## **System Name:**

## Payroll System

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## **Purpose**

The purpose of a payroll system is to automate and manage employee compensation calculations and distribution, ensuring accuracy and timeliness of payment while complying with regulations. Additionally, it provides valuable information for decision-making and necessary documents for tax and financial statements. Some systems may also include a money-saving feature for employee salaries.

## Features

* Old Feature:

The old payroll system is a basic system that provides the essential function of paying salaries to employees. It includes a database of employee information, such as their name, address, and salary information. Payroll administrators use this database to calculate the gross pay for each employee, which is then adjusted for taxes and deductions to arrive at the net pay. The system also generates pay stubs for each employee, which detail their earnings and deductions for the pay period. Other standard features of the old payroll system include tracking sick time and vacation time, processing direct deposit payments, and generating payroll reports for accounting and management purposes. While this system is functional and effective at its core purpose of paying salaries, it lacks many of the advanced features and automations found in modern payroll systems.

* New Feature (Summarize)

A new feature for the payroll system could be a savings account function within the mobile app. The company could set up a savings account for employees and offer an interest rate on the balance. Employees could choose to contribute a portion of their paycheck to the savings account, and view their balance and interest earnings within the app. This feature would encourage employees to save money and help them build financial stability. It would also improve employee satisfaction and loyalty, as they would feel supported by the company in achieving their financial goals. Additionally, the savings account feature could be integrated with the payroll system to allow for automatic contributions, reducing the administrative burden on HR staff. Also, there are some features below and the new system will keep track all of the information into a variety of databases such as MySQL, Microsoft SQL Server or MongoDB (this new system is flexible).

* + - Payroll System Mobile App
      * Biometric clock-in and clock-out
      * Integration with Time & Attendance System
      * Automation of employee hours worked and calculation of taxes (eliminate people error)
      * Flexible payment options (direct deposit, pay cards, cryptocurrency)
    - Employee Self-Service Portal
      * Pay stubs and W-2 forms access
      * Personal information update
      * Time-off request submission
    - Analytics and Reporting
      * Track key payroll metrics
      * Generate custom reports
    - Compliance Updates
      * Keep track of compliance updates and tax law changes
      * Avoid costly penalties
    - Artificial Intelligence
      * Automate routine tasks (payroll processing, tax calculations)
      * Improve accuracy and save time
    - Savings Account Feature
      * Allowing employees to save money through the payroll system
      * Offering a company-set savings account with interest for employees

## Scenarios

#### Employee clock-in

This scenario will describe what happens during the moment employee using the fingerprint scanner at the entrance of company.

#### As an employee arrives at the company, they go to the entrance door equipped with a biometric fingerprint scanner.

#### The employee scans their fingerprint on the scanner, and the scanner verifies their identity against the stored data.

#### If the fingerprint is verified, the employee is considered clocked-in for the day, and the information is sent to the payroll system mobile app.

#### The system updates the employee's clock-in time and sends a notification to their device indicating that they have successfully clocked in for the day.

#### The employee can view their clock-in time in the app, and their manager can also see it in the employee's attendance record.

#### Employee clock-out

This scenario will describe what happens during the moment employee using the fingerprint scanner at the entrance of company.The employee finishes their shift and walks back to the entrance of the office building.

#### Redo the step as in the morning, there is a biometric scanner installed, which prompts the employee to scan their fingerprint to clock out.

#### The scanner quickly verifies the employee's identity and records the clock out time in the system.

#### The employee receives a confirmation message on the scanner screen that they have successfully clocked out.

#### The recorded clock out time is automatically updated in the payroll system, which calculates the employee's total hours worked for the day.

#### System submit data to supervisor and hr department

## This scenario outlines the process of submitting employee attendance data to the supervisor and HR department:

## After an employee clocks in or out using the biometric system, the data is automatically recorded and updated in the payroll system.

## The system then generates a report of all the punches made by the employee for that day.

## The report is sent to the employee's supervisor for review and approval.

## Once the supervisor approves the report, the data is forwarded to the HR system for further processing and documentation.

## This streamlined process helps to ensure accuracy, eliminate errors, and improve efficiency in managing employee attendance and payroll data.

#### Saving Function

This scenario outlines how employees can use the payroll system's savings account feature to save money and grow their savings.

1. Employees can opt to save a portion of their paycheck through the savings account feature in the payroll system.
2. The company sets up a savings account for the employee with an agreed-upon interest rate.
3. Once the employee receives their paycheck, they can choose to keep the money in the savings account or transfer it to their personal bank account.
4. The savings account feature in the payroll system allows employees to easily manage and grow their savings, while also providing added benefits such as interest earned through the company's savings account.

#### Tax Process

The payroll system calculates taxes based on employee information and tax laws. It withholds the appropriate amount of taxes from employee paychecks and submits them to the government.

1. The Payroll System calculates taxes for each employee based on their salary and tax withholding information.
2. The system automatically deducts federal, state, and local taxes from the employee's paycheck.
3. The system generates and sends tax forms to the appropriate government agencies.
4. The system provides employees with access to their tax forms through the Employee Self-Service Portal.
5. The system stays up-to-date with changes to tax laws and regulations to ensure compliance and avoid costly penalties.

## Interfaces

* The Payroll System will use the following technologies and Interfaces:
  + Biometric Scanner Program: Identify of employees finger print and checking in the clock-in and clock-out
  + Database: Employee information, time and attendance data, Payroll and Tax Information, Benefit Information, Compliance Information, Reporting and Analytics Data
  + Applications:
    - Payroll Calculation
    - Tax Calculation
    - Hours Tracking
    - Supervisors Dashboard (only show on supervisor account)
    - Savings Account Feature
    - Reporting and Analytics
    - Compliance Update

## 

## Overview of New System

* **­Process 1.0 – 4.0**

The biometric clock-in and clock-out feature is used to track an employee's attendance and work hours. This data is then integrated with the time and attendance system to automate the calculation of employee hours worked. Once the employee hours are calculated, the system can then use that data to automatically calculate taxes and benefits owed based on company policies and government regulations. This automation helps to eliminate human error in payroll processing and ensures that employees are accurately compensated for their work. The system can also provide flexible payment options, such as direct deposit, pay cards, and cryptocurrency, to give employees more control over how they receive their pay. Overall, the biometric clock-in feature is a critical component in the payroll system's ability to accurately calculate and process employee compensation.

Chart

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* **Process 5.0 to 6.0**

The step from flexible payment options to payroll processing involves taking the payment information submitted by employees and processing it through the payroll system. This includes converting the payment amounts into the appropriate format for the chosen payment option (such as direct deposit, pay cards, or cryptocurrency), and then incorporating that information into the overall payroll calculations.

Diagram

Description automatically generated with low confidence

* **Process 6.0 to 6.1.4 then 7.0 to 8.0**

The payroll process is the step where the employee's salary, taxes, and benefits are calculated based on their hours worked and payment options. Once the payroll process is completed, the employee can access the Employee Self-Service Portal (ESSP) to view their pay stubs and W-2 forms. From there, they can update their personal information if needed.

If the employee is interested in the saving account feature, they will need to provide some information in the ESSP before they can start saving money through the payroll system. After that, they can move on to the next step, which is the AI-assisted automation of routine tasks such as payroll processing and tax calculations.

Finally, the analytics and reporting tool generates custom reports and tracks key payroll metrics, giving the company valuable insights into their payroll system's performance. Overall, this flow provides employees with the flexibility to manage their personal information and payment options while streamlining the company's payroll process and improving accuracy through automation and AI.

Diagram

Description automatically generated

* **Process 6.0 to 8.0 (instead you do not want to set up accounting)**

After the payroll is processed, the system will automatically generate payroll reports that contain key metrics such as total hours worked, deductions, taxes, and net pay for each employee. These payroll reports will be used by the accounting department to reconcile and verify the accuracy of the payroll transactions.

Once the payroll reports are validated, they will be processed by the analytics and reporting tool. The tool will extract data from the payroll reports and convert it into meaningful insights and metrics. It will also generate custom reports that cater to specific needs and requests from stakeholders such as managers, executives, and auditors.

For instance, the analytics and reporting tool can generate a report that shows the percentage of payroll expenses as a proportion of total company expenses over the last five years. This report can be used by the finance team to assess the impact of payroll costs on the company's profitability.

In summary, the analytics and reporting tool plays a crucial role in transforming raw payroll data into valuable information that can be used to make informed business decisions.

Diagram

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* The whole system:

Diagram

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* Testing:

Once the payroll system has been developed and implemented, it is important to thoroughly test it to ensure it is functioning properly. This typically involves creating various test scenarios, which may include different employee profiles, pay rates, and benefits packages, and then running payroll for each scenario to ensure accurate calculations. In addition, it is important to test the system's integration with other tools and software, such as the time and attendance system and the employee self-service portal, to ensure data is being transferred accurately. Testing should also involve verifying that compliance updates and tax law changes are being properly implemented, and that the system is generating accurate reports and analytics. Once testing is complete and any issues have been identified and resolved, the system can be fully implemented for use by the organization.