Web Based Attendance, Leave and Payroll system for small scale industries: A Case of SOSOMA Industries Lmitited Rwanda

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ABSTRACT

The advancement in technology has positively impacted human department working conditions in the processing industries domain that require many employees to accomplish certain tasks. For reliable management of employee's attendance, leave and payroll which are critical operations in the human resource department of every institution, the use of the latest technology includes high-level language PHP, JQUERY, BOOTSTRAP, HTML, CSS, MYSQL, TCPDF, and Xamp server have been used to efficiently store and retrieve data, process data, generate reports. To accomplish all these tasks effectively, a computer web-based application has been designed, developed, and deployed as well. It keeps attendance and leave records for every employee, and generates monthly payroll to be deposited at the employee bank account after calculating allowances, deductions, and taxes. Individual pay slip is generated out as receipt. Compared to manual or excel sheet methods for processing attendance, leave and payroll, this system processes data accurately at the level of 100%. The developed software was tested for any error and it is suitable to use in any industry.

Keywords: Payroll, Pay slip, Php, JQuery, Bootstrap, MySQL.

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1. INTRODUCTION

In this century of the 21st, the use of computer-based technologies is changing the lives of small-scale companies. Many small scale industries have several activities such as finding partners, recruitment, training, productions, and payroll [1]. Payroll, leave and attendance are the main issues at the company, an integrated computer management applications have been developed to solve paper based or excel sheet work approaches. Currently, attendance, leave application and payroll system where employee's monthly salaries calculations include allowances, taxes and deductions require time consumption to process it manually or in excel sheet. In order to get a monthly salary using a manual or excel sheet involves checking attendance and leave from employee filled papers. This approach requires time consumption and can cause delay in salary calculation, and the number of days each employee has worked can be calculated on a monthly basis. Therefore, salary calculation can proceed where it involves gross salary calculation from basic salary, and compensation cost which both depend on the number of days' employee has worked, overtime cost, transport cost, accommodation, and food cost. Net salary is also calculated from gross salary by deducting taxes and health insurances. Net pay, which is the money received by employees in its bank account, is calculated from net salary after removing some deductions including cash advance, and other related loans. Therefore, the use of the latest technologies is an effective tool for storing and retrieving data, processing data, and generating reports [2][3]. Thus, it saves time, minimizes the error rate in inputting data or making reports, and motivates employees when their salaries are processed on time. Attendance system was integrated in the developed web application where each employee has its own identification number generated by software itself that is usable during attendance. Personal pay slip as a receipt can be printed out with all the details related to payment including basic salary, overtime, taxes, allowances and deductions. This computer-based payroll system has been developed in accordance with requirements of SOSOMA Industries ltd is secure, easy to use and currently, is being used by accountants to manage attendance, leave and payroll.

2. RELATED WORKS

According to Sandiwarno, 2018 payroll is an important activity of organizing employees' salaries of the company done by employee staff from the department of finance and accountant. Payroll is based on computing the net salary from many attributes such as basic salary, compensation cost, overtime cost, transport cost, taxes deductions, allowances and loans deductions [4][5].

Basic salary depends on a person's level and experience. For temporary employees, it depends on days' employee has worked [6]. According to Moth 2015 and Mshelia 2017, attendance is a very important criterion used for different purposes such as storing data, assessment, promotion and attendance for employees, and is the key attribute for computing basic salary and compensation costs [7] [8].

Summarized pay slips for each employee can be printed out to show all information related to the employee payment including basic salary, overtime, taxes, allowances and deductions [9].

3. METHODOLOGY

Here is a system design that is running at SOSOMA industries ltd, and each page that is made, consist of front end, back-end and server. For front end design, bootstrap, html, css, JavaScript have been used, and php has been used for connecting the frontend with the back-end. Xampp server was used to locally host the web-application and MySQL as the database of the system.

1. Every day employees have to attend. Attendance data is stored and it shows all the information, time in and time out. Admin can manage during time of report, using system tools if necessary.

2. Each employee can apply for leave. Its data are stored with all the details including reason for leave, number of leave employees have taken and leave remaining. Admin has full access to it during the report.

3. For monthly salary processing. In order to be paid on time and without error, admin enters each employee's salary information such as basic salary, compensation money, total overtime hours, transport cost, allowances and deductions. Then the system calculates gross salary, net salary and net pay. Admin can print out pay slips for each employee during the report.
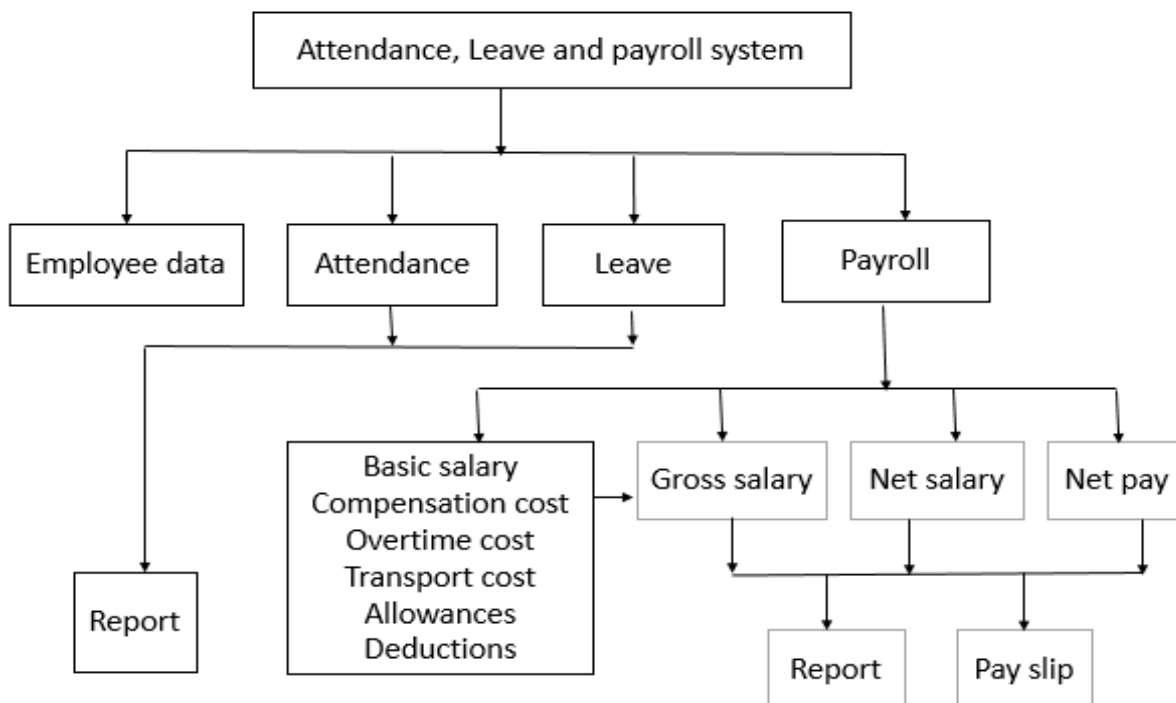

Figure 1. System Design

4. RESULTS AND DISCUSSION

Through testing analysis, the figures below show results and details obtained during testing. Home page shows both the number of male and female employees, daily attendance and main features of the system.
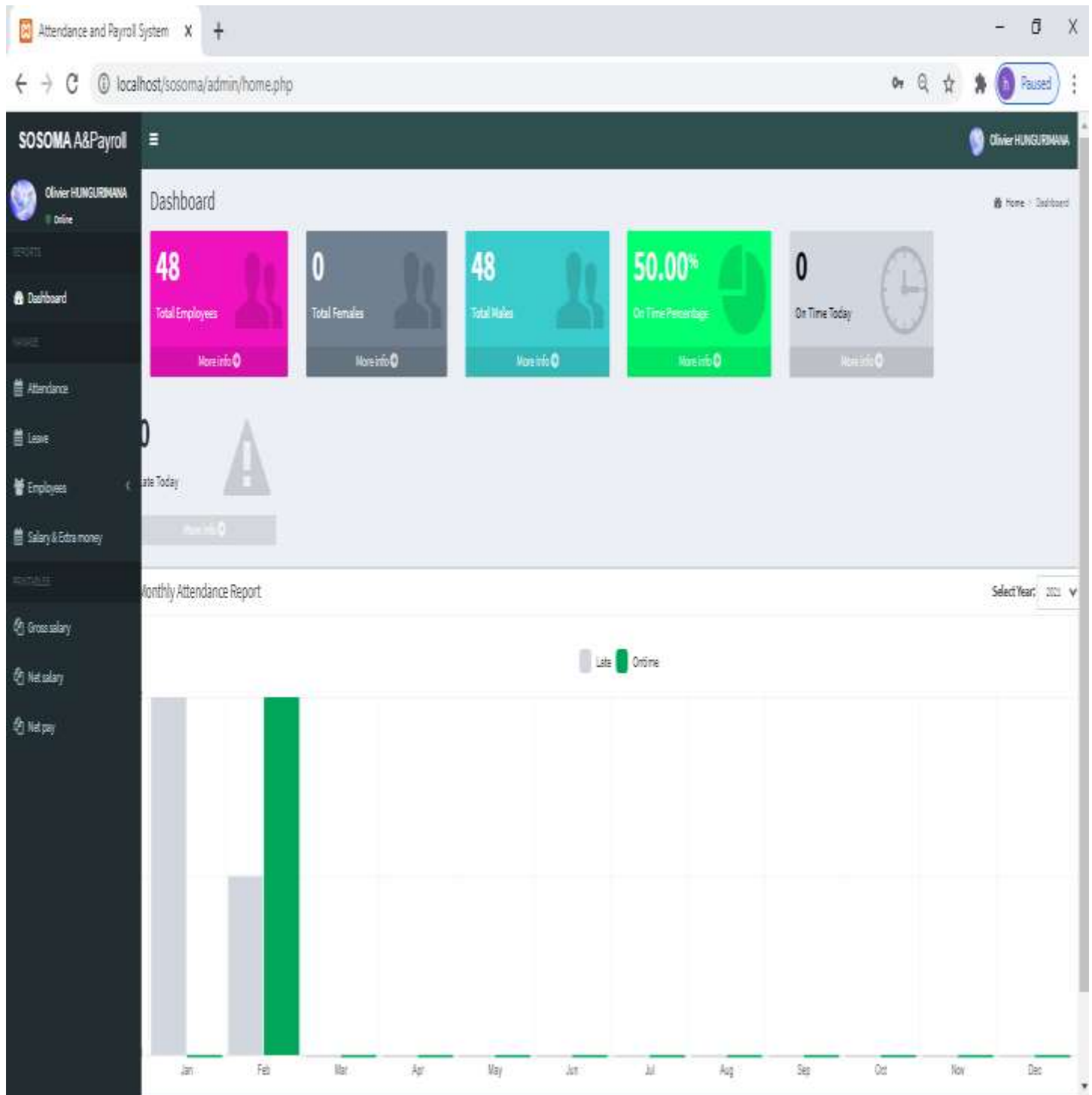

Figure 2. Home page

Admin and other staff as users must login by entering the username and password, if the username and password match with the existing credentials in the system, they will be granted permission to access the system.
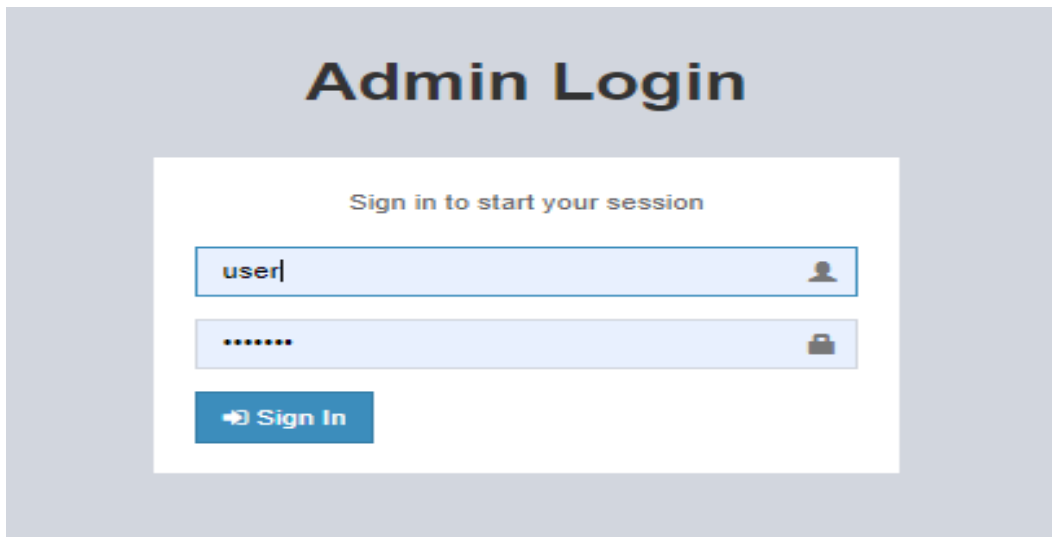
Figure 3. Login page

Attendance system is built in with machine biometrics. During registering a new employee by admin in charge, an auto generated code is generated, and used as identification number by employee during attendance for time in and time out. Once attendance is made, data will be stored in the server to allow any manipulation which will be done by the admin when necessary. From attendance data, basic salary and compensation cost can be calculated.
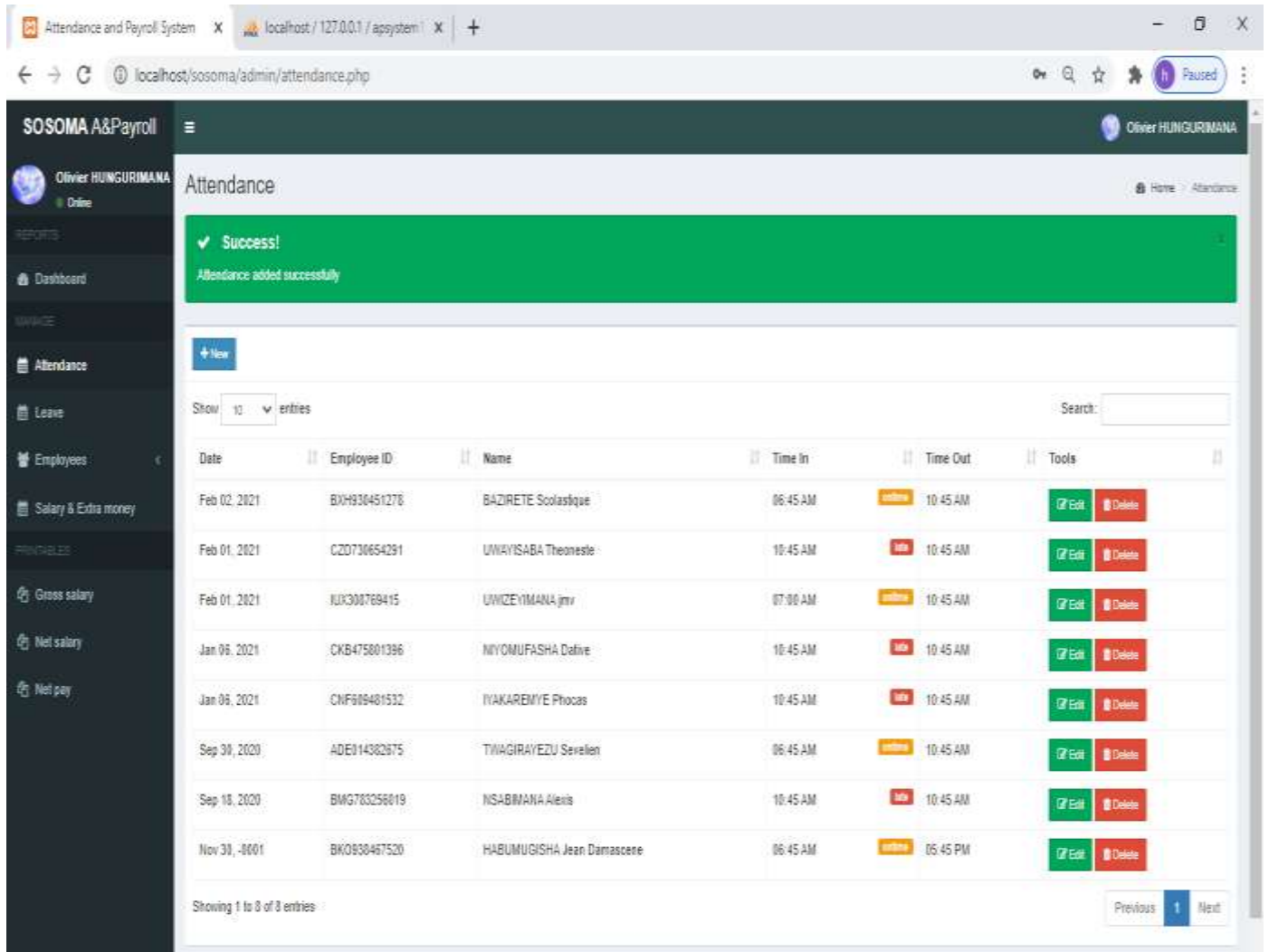

Figure 4. Attendance portal

Figure 1. Attendance data recorded

Payroll which is a series of calculations can be processed from gross salary, net salary, and net pay. Gross salary is calculated from basic salary, compensation cost, overtime cost, transport cost, accommodation, and food cost. Net salary is calculated from gross salary by deducting all the taxes, while net pay, which is the total amount received by an employee, is calculated from net salary by deducting all related loans. Once payroll is made, from a clone of the hypertext preprocessor library to generate portable document format which is built within the system, individual pay slip can be printed out for each employee.

Figure 2. Salaries information

Figure 3. Individual pay slip

5. CONCLUSION AND FUTURE WORKS

The web based attendance, leave and payroll system was developed, tested, and implemented to allow accountants to process salaries at time and its complementary data. For easy access, each employee's data is made with tools for editing, delete, save, view, update and add new records, and many other features that help in payroll calculation, maintaining and recording data operated by the administrator since has full control on the system. Admin can generate attendance, leave and payroll reports. Furthermore, pay slips can also be printed out for each employee. Since the system is currently hosted locally, as part of future work, other researchers may improve the system by deploying into the cloud. Besides, the system can be integrated with a phone number to notify the respected user via SMS. Also, the system can be integrated with email to allow users to easily retrieve salary slips through mail.

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