

Integrated Payroll System – A Design Science Approach

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Abstract – *Integrated Payroll System (IPS) is a web-based application, design for the use of KUST to manage the record of its employee of different category. It can be use by any organization to manage the records of the of its employee working in that organization. Payroll Application has been designed to for the purpose of maintaining details of various employees, their allowances and deductions that need to be processed to the employees of the institution. The unique personal number (P. No. as an identification number) assign to each member of employee of the KUST generated sequentially to create the employee record. Payment are made according to the employee carder, rank, and status of the employee attendance records which use to be analyzed at the 25th of each month to generate the payment including gross and net payment after deductions.*

Key words: - Payroll, Salary, Information System, Design Science, Allowances, deductions, web-based application, educational institutes, corporates.

1. INTRODUCTION

Payroll is a system of payment of salaries and wages to the employees in an organization which has critical operations in ensuring accuracy and timely[1]. "Integrated Payroll System" is a distributed application, developed to evaluate the performance of employees working in any organization. It maintains the information about an organization, personal details of their employee, the details of the projects/task assigned to the employee and the progressive report records on how the project/task has been carried out. The project has been divided into four major modules and their further sub modules.

Design science, on the other hand, is described as a method of designing in a systematic manner[2]. It was obvious that design was not a science and that design science applied to the study of design from a technical standpoint. A science of design (the empirical study of design) does not involve or

presume that the actions of designing are scientific in and of themselves, and a growing number of research programs hold this viewpoint.

Using a design science approach, the current project "Integrated Payroll System" has been developed to solve the problems found in the practice of manual processes. This program is designed to remove and, in some situations, reduce the issues that the current system has. Furthermore, this framework was created to meet the needs of KUST in terms of running its operations smoothly and efficiently.

This web application has been kept as simple as possible to prevent data entry errors. When entering invalid data, it also shows an error message. It is user-friendly since it does not need any formal knowledge to function. Any company faces human resource problems that must be addressed by the organization. Every business has its own set of employee and payroll management requirements. As a result, we've built an exclusive Integrated Payroll Framework that's customized to the Institution's managerial needs.

1.2 Purpose

The purpose of this document is to define the features and design requirements for a web application that manages employees and their payroll. This paper is intended for the web application's developers and administrators. With the aid of this device, the administrator now has all of the information at his fingertips and can quickly build a good record based on their needs. Finally, we may conclude that this system will not only simplify the process but will also save the manager or administrator precious time, which can be put to better use by the institute. This would be an added benefit and power control dependent on their time off from their regular duties.

The stated project is targeted at the delivery of a cost effective, compact and portable system that makes it the

best choice of product for the end users. The ease of installation of this system aims to make it a suitable choice for easy insertion and management of records in any domain. The work aims to not only provide a high-quality user experience, but also provide better features than the prevalent systems, while keeping in mind that these features are provided not at the compromise or loss of any other features that the existing systems provide personal details, leaves taken, salary deducted and all the functionalities mentioned above.

The following salary data should be generated by the system:

- i. Monthly and annual salary calculations for each employee.
- ii. Estimate of total compensation for the whole University for each month.
- iii. Estimate of a year's gross income for the whole University.
- iv. Total monthly and annual wage of the company within a city.
- v. Estimate of total salary for each university domain, for each month, and for the entire year.

1.3 Literature Review

The final product should meet the user's requirements if custom software is built with proper review, design, and implementation. Since end users have input into the design, user acceptance should be higher. Via staggered implementation, custom creation also helps a company to escape a "big bang" system implementation[3]. Design development phases which result in longer and larger projects, which may be one of the limitations[2]. The choice between a client-server system and a web-based system is important. [4]

1.3.1 Employee

In the Institution, this is the employee's knowledge. Employee identification number (Pno), employee name, designation, cadre (job nature), date of appointment, experience, phone number, gender, and date of birth are all included. The new user provides this information through a webpage.

1.3.2 Department

This table gives the details of the various departments of the company. Its attributes are Department name, department number (which is the primary key), department location. This information is preexisting in the database.

The database administrator manages it not the users.

1.3.3 Loans and Deductions

The employee may obtain a loan from the university, the staff union, or a cooperative society run by the institution to manage the well-being of its members, depending on the loan's definition. Loanid, loan name, amount collected, and employee id are some of the loan attributes.

1.3.4 Salary

It consists of attributes such as Annual Salary Scale for each cadre, Rank and the tax associated with each Rank.

1.3.5 Allowance

Employee ID specifies the allowance of an employee. Basic Pay in this case is determined by a person's title and experience. Existing users can view their Basic Salary and Net Pay by entering their Employee Id, received leaves, and other charges such as medical allowance.

2.0 Methodology

The following are the suggested measures for completing this research project.

- a. Conduct a literature review to assess best practices in current information system design
- b. Create the architecture of the proposed IPS
- c. Implement the IPS system
- d. Deploy the IPS system for testing and evaluation
- e. Gather input from IPS users
- f. Analyze user feedback in relation to the IPS objectives
- g. Complete the system's final modifications, documentation, and implementation.

2.1 Feasibility analysis

A feasibility study should be undertaken in the field of computer and technology to determine the advantages of automation over manual systems and other alternatives[3]. The feasibility analysis in the current framework is focused on research into both current activities and the new project's effect on the organization's operations. The feasibility report also considers the benefits and drawbacks of the existing system as well as the new plan. A schedule is a list of activities that may take place at a given time in the future. The aim of schedule feasibility in this proposed method is to divide the task and time properly, then execute and end it effectively. The schedule feasibility was determined at the time of the synopsis submission by

specifying time periods for each phase, and the schedule work-flow diagram depicts the development, schedules for each process in the project, and the overall project time. The term "technical feasibility" refers to the process of determining which technology can be included in a proposed project. Performance, ease of learning, ease of implementation, ease of support, interoperability with other technologies, and scalability are some of the technology issues to consider for this project. Economic viability, also known as economic analysis, is the most common tool for assessing a new system's effectiveness. The method is more generally known as cost/benefit analysis, and it involves determining the potential advantages and savings from a proposed scheme and comparing them to the costs. If the advantages outweigh the costs, the decision to build and implement the system is taken[5]. To conduct a cost/benefit analysis, the current system determines the initial monetary costs of growth, the expected monetary costs of running and maintaining the application, and the expected future monetary benefits of using the application. The term "operational viability" refers to the ability to maintain and sustain the proposed system once it is in use. It is a measure of how well a proposed system adds and updates employee payroll records in accordance with the specifications defined during the system implementation requirements review process.

2.2 Requirement analysis

The process of understanding user needs and requirements from a proposed computer-based system is known as requirement analysis[6]. The following elements are included in the requirement review process of this proposed project: What is the relationship between the user, the system's hardware, other hardware, and other systems in the proposed system? What is the system's speed, availability, response time, and recovery time for

2.4 Data flow Diagram (DFD)

A data flow diagram (DFD) is a visual illustration of how data flows through an information system. It's a documentation tool that both programmers and nonprogrammers can appreciate[9]. A physical DFD defines where data flows from, who processes it, and who receives the processed data. The background Level DFD of the proposed system is shown in Fig 1.

various functions and modules? What is the current system's portability, correctness, maintainability, security, and other considerations? What are the implementation constraints for this system's design?

The Requirements Analysis Process consists of the following steps: Fix system boundaries: At this stage, the prototype application's relation to other Kano University of Science and Technology systems, such as the budget system, has been checked. The project's framework is condensed within the university, and it is also determined here. Identify the personnel; the next step in the requirement review process is to determine who will be using this computer-based payroll method. Users are those that report on the system's full functionality [7], [8]. This proposed application is used by clerks, senior assistants, department heads, and administrators.

2.3 Requirements elicitation

Information was gathered from the multiple users (clerks, senior assistant, employees, HOD) listed in the previous phase during the requirements elicitation stage. - of these groups is asked a series of questions about what they expect from the proposed application and what they expect it to achieve. The list of criteria was created after taking into account the opinions of several users. The tools used in the requirements elicitation phase of the proposed project are listed below. For collecting valid requirements, the current framework has used methods such as flowcharting of organization processes, existing payroll documents, organizational maps, process models, systems or process specifications, on-site review, and interviews with end-users. Prototypes, Data flow diagrams, and Usage Case Diagrams are some of the other criteria elicitation techniques used in this framework.

2.5 Design

The design phase's aim is to formulate a strategy for resolving the problem described in the requirement text. The physical system design of the payroll system is converted from the conceptual system design that resulted from the systems analysis. The current system's architecture is divided into two stages: The proposed system's system design defined the components, their specifications, and how they communicate with one another to achieve the desired performance[10]. Detailed Design: At this stage, the proposed system's design became more organized. Each module's internal logic has been determined, as well as their data structure and algorithmic architecture. This phase also

decides which device components are necessary and how they will be implemented. Finally, PHP, MySQL, HTML, and JavaScript were chosen as the programming languages for this framework.

2.5 Coding

To make the proposed system a viable project, the system design must be implemented. This necessitates the translation of design into a computer-readable language, or programming language. The coding for the proposed projects was performed using PHP, MySQL, JavaScript, and HTML. The comprehensive design software specifications have been translated into PHP, MySQL, HTML, and JavaScript instructions in this step. In a computer-based payroll system, the programs produced from these languages organize data movements and control the entire process.

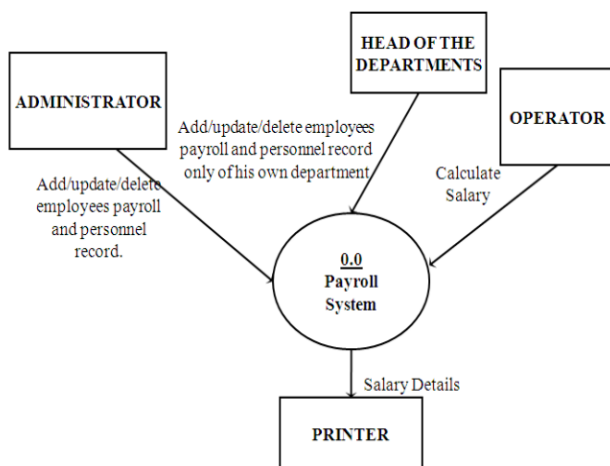


Fig – 2: Data Flow Diagram

2.6 Testing

Before putting the proposed system into service, it is put through a test run to see if there are any bugs. All of the defects encountered in the current application were discovered during the development phase. The following test runs are carried out for the current system using the test data: Unit testing is the process of testing individual modules. Each module interface in the proposed payroll system has been checked to ensure that information flows properly into and out of the program unit. After and module of the current system has been extensively checked, its integration with other modules has been examined. Each module of this framework has been checked to ensure that

there are no errors in parameter passing or when one module calls another. Finally, the system test is designed to test a fully developed payroll system to ensure that it meets the user's needs. The test is carried out on real data at this stage. The entire system is run on real-world data. In addition, the system's performance or effects are examined [8] Clerks, senior assistants, and the head of department have checked the proposed payroll system.

3.0 Result

The implementation process began after the proposed system was approved by the users. The term "implementation" refers to the transformation of a simple program into a complete computer system replacement. Acquisition and installation of hardware and software, conversion, and user training are the major steps in this process. To begin, the Xampp Server has been installed locally on the device. The data from the old payroll system was then converted to work for the new system. During this process, all of the proposed system's programs have been loaded into the user's computer. To migrate from an older clipper-based payroll system to a modern computerized payroll system, the parallel run technique was used. Users (clerk, senior assistant, and HOD) were educated after the device was loaded by providing clear instructions.

3.1 User interfaces

User interfaces are the front end of any device that users interact with in order to connect with it. Team leaders and project managers are the two main users of this framework. As a result, we can split our system's interface into two main interfaces. The user interfaces for team leaders and project managers are different. Users can only see their approved sections after logging into the system, so a Team leader can only see the employee registration, employee management, and salary estimation interfaces. Project managers, on the other hand, have access to an interface that produces different reports than team leaders. XHTML, CSS, java scripting, and the ajax toolkit are among the web development techniques used to build and enforce these interfaces. We built interactive and user-friendly interfaces using these techniques.

3.2 Salary Calculation

Both the team leader and the project manager have access to a compensation estimation gui. Two ajax-enabled drop-down menus are included in this user interface. After selecting a specific employee from a list of employees who belong to a department that is selected from the drop-down

menu of departments, PHP code is used to retrieve data from the database. After the fields are filled out automatically, the user can fill out any extra fields manually, such as allowances or deductions. Behind the calculate button is PHP code that will be triggered and will return a response to the user. The salary could be saved in the database or estimated again after it has been calculated.

3.3 Maintenance

The proposed method has been retained to remove errors that occur during parallel execution. Maintenance is a periodic analysis of the proposed framework. The proposed system was examined to determine its functionality, as well as to identify any additional improvements or specifications, as well as to assess its performance.

4.0 System Description

Integrated Payroll System (IPS) is functioning. This system will be combined with the IPS client management system, which is already in use at the university. Since the Integrated Payroll System is a web-based system, users may access various graphical forms that can only be filled by approved personnel. The data is entered into the forms, and after going through a series of queries, it is checked and processed before being stored in the database at the system's back end. And the data can be retrieved from the database whenever it is needed. This method uses a set of criteria to measure the monthly wages of its workers. It can also measure tax for each person and create different types of files, such as bank files or employee salary slips (pay slips), among other items. In addition, the system will measure the cumulative amount of payroll tax for all workers for each month. It can also calculate the salaries and payments due to the institution for the whole year. The cumulative amount of tax payable by the institution for each

4.3 Employee Registration

This function is used to register a new employee. The user can store all necessary information such as, name, person number, address in detail, bank details, contact information,

year is then calculated. All information is saved in the system's database for the institution's records and can be accessed at any time.

4.1 Anatomy of the System

We'll go over the system's overall operation and functions in this portion. The following functions will be discussed and explained separately: After logging into the system, the user is presented with a welcome screen that lists all of the functions available under the heading Contents, including logout, employee registration, employee management, wage calculator, bank file, employee pay slip, employee salary report, and monthly salary report. All of these functions are listed in detail below.

4.2 Login

The login screen appears as soon as the user logs in to the device, as shown in Figure 4.1. By choosing a department from the list of departments, the user can see all of the employees in the form of a list of that department's employees. The user will see basic details like the person's number, first and last name. To view detailed details about a particular employee, go to that employee's detail information page and select the view detail option. Under the heading contents, the user will also see the functions that are available to him.

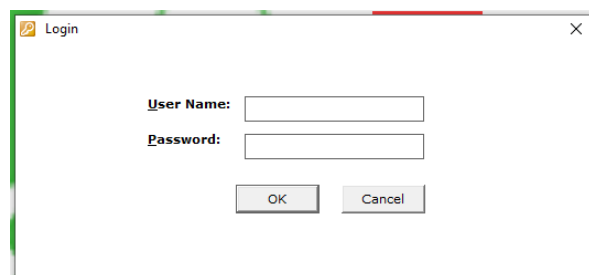


Fig - 4.1: User Login Form

information about salary, tax and the status of employment, in the database.

Members of Staff

Members of Staff View: All Staff All Staff Deleted

Permanent Staff Principal Officers
 Casual Staff Visiting Lecturers
 Academic Staff Department Staff
 Non Academic Staff Search Staff Records

StaffID	Full Name	Department	Type of Appointment	Grade	Personnel Detail
A35	A. H. DAURA		Visiting		
A73	A. O. MUSA		Visiting		
P1973	ABBA IBRAHIM ALIYU		Permanent		
P1993	ABBA NUHU ABDULLAHI		Permanent		
JP1477	Abba Sale		Permanent		
PV886	ABBA IBRAHIM		Permanent		
P1066	ABBA ADAMU SIYA SIYA		Permanent		
P43	ABBA GARBA GAYA		Permanent		
JP1492	Abba Ibrahim Umar		Permanent		
P1593	ABBA MUHAMMAD ABDULKADIR		Permanent		
IPP2001	ABBA NAZIRU HAMZA		Permanent		
JP541	ABBA SARKI ALIYU		Permanent		
P869	ABBAS GARBA IBRAHIM		Permanent		
P2255	ABDULWAHAB FARUK		Permanent		
JP86	ABDU ALI		Permanent		
JP780	ABDU AMINU	Mathematics	Permanent		
JP152	ABDU HAMZA		Permanent		
JP784	ABDU MOHD		Permanent		
JP1561	ABDU SULE		Permanent		
A85	ABDU AHMED MANGA		Visiting		

Voucher General Information

November, 2020 Voucher

Select Report Type

General Voucher Report
 Pay Advice Deduction Report
 Nominal Roll Group Deduction Report
 Bank Summary Staff Deduction Detail
 Pay Slip Pension Contribution
 Gross Difference Staff Pension
 Pension Summary

Select Staff List

All Staff
 Academic Staff
 Non Academic Staff
 Permanent Staff
 Visiting Lecturers
 Casual Staff

Summary Reports

Select Year

(Select Year)

1st Quarter Report (1-3)
 2nd Quarter Report (4-6)
 3rd Quarter Report (7-9)
 4th Quarter Report (10-12)
 Annual Report (1-12)
 All Marge

Previous Voucher List
 October, 2018
 November, 2018
 December, 2018
 January, 2019
 February, 2019
 March, 2019
 April, 2019
 May, 2019
 June, 2019
 July, 2019
 August, 2019
 September, 2019
 October, 2019
 November, 2019
 December, 2019
 January, 2020
 February, 2020
 March, 2020
 April, 2020
 May, 2020
 June, 2020
 July, 2020
 August, 2020
 September, 2020
 October, 2020
 November, 2020

Create New Voucher
 New Voucher Information
 December, 2020

Fig - 4.2b: Employee's Edit

Note: All Underline Fields are Essentially Needed

Staff I.D. No.: JP780

First Name: ABDU

Middle Name:

Last Name: AMINU

Date of Birth: Sun, Jun 13, 2010

Gender: Male Female

Addresses

Home: KAND

Contact: KAND

Residential: KAND

Phone Number: 080

Email:

G. A. of Origin: KAND

State of Origin: KAND

Nationality: KAND

Marital Status: Married

Religion: Islam

App. Type: Permanent

Work Type: Non Academic Staff

Department: Mathematics

Date Employed: Sun, Jun 13, 2010

Date Confirmed: Mon, Jan 1, 1990

Spouse Number: 0

Children No.: 0

4.4 Salary Calculator

From a list of employees in a department, the user can choose an employee. He will fill in the required details, such as working hours, allowances, deductions, tax percentage, and remarks. This will be the system's input, and once the user clicks the Generate button at the bottom, the system will provide the output.

4.5 Employee Salary Slip

It contains all the necessary information such as, employee name, address, person number, Institution's name and number, total salary per month before tax, amount of tax, salary after tax and various allowances and deductions. The salary slips will be sent to the employees via email.

Kano University of Science and Technology, Wudil

Pay Slip for November, 2020

NAME: MUKHTAR MUHAMMAD ALIYU

STAFF NO.: [REDACTED]

DEPARTMENT: [REDACTED]

SCALE: CONUASS 03/05

POST HELD: [REDACTED]

PAY MODE: Bank Payment

BANK: JAIZ BANK

ACC. NO.: [REDACTED]

PAYMENTS		LOAN		DEDUCTIONS		OTHER DEDUCTS	
Basic:	83,211.42	VEHICLE 4:	5,555.56	25 of 36	Tax-Pay:	3,658.95	
Rent:	16,664.50	2019MPCS:	1,000.00	2 of 2	Pension Cont.:	7,950.07	
Peculiar:	53,303.75	ASUU Zonal CNTR:	1,000.00	2 of 2	ASUU:	1,000.00	
Other Allowances:		ASUU SSF:	1,000.00	2 of 2	ASUU Due:	1,684.23	
Responsibility:					ASUU 2:	1,000.00	
Hazard:	2,000.00				MPCS:	5,000.00	
					KUST MPCS:	500.00	
					ASUU IS Levy:		

Total Allowances: [REDACTED] Total Deductions: [REDACTED]

Gross Pay: [REDACTED] Net Pay: [REDACTED]

Fig - 4.4: Employee Pay Slip

4.6 Institution's Salary Report

User can access salary report form by clicking various options on the page on fig. 4.3, salary report as shown in figure 4.5 will be displayed. The user can select either the general, nominal or pay advice from the radio options on fig. 4.3 respectively. Certain queries will run as soon as the View and Print Report button is clicked and a report is generated. This report includes the details of the salaries, total amount of tax paid by the institution for each month as shown in the results.

Bank ID: 48
Bank Name: A ZENITH BANK
Bank Address: WUDIL



Kano University of Science and Technology, Wudil

Payroll Sheet Report for November, 2020

S/No.	P/No.	Staff Name	Level	Basic	COMP./PEC.	Rent	Total Allowance	Gross Total	Loans	Deducts	Tax	Tot. Dedts.	Net Pay	Acc. No
1	CP2220	AHMAD MUHAMMAD PANDA	11/04	91,164.50	59,437.42	20,204.17	94,641.58	185,806.08	39,117.50	2,323.29	5,292.46	46,733.25	139,072.83	
2	CP1602	UMAR LAWAN	09/04	71,146.75	46,132.25	15,316.75	76,449.00	147,595.75	3,395.28	1,922.94	3,201.39	8,519.60	139,076.15	
3	CP1897	BASHIR MAMUDA ISMAIL	09/04	71,146.75	46,132.25	15,316.75	76,449.00	147,595.75	617.50	1,922.94	3,201.39	5,741.83	141,853.93	
4	P1582	HAFIZU LMAN	09/04	71,146.75	46,132.25	15,316.75	76,449.00	147,595.75	617.50	9,340.02	3,201.39	13,158.91	134,436.85	
5	P1589	MARYAM ABDULLAHI BAALI	09/04	71,146.75	46,132.25	15,316.75	76,449.00	147,595.75	617.50	8,840.02	3,201.39	12,658.91	134,936.85	
6	P1847	IMRAN ABDULKADIR SALE	08/04	61,805.42	39,961.83	13,071.58	68,033.42	129,838.83	617.50	8,226.27	2,460.71	11,304.48	118,534.36	0
7	PP2000	NAZIRU HARUNA	08/04	61,805.42	39,961.83	13,071.58	68,033.42	129,838.83	0.00	7,726.27	2,460.71	10,186.98	119,651.86	
8	CP2120	AMINU A LAWAL	07/04	53,245.33	34,329.92	11,079.00	60,408.92	113,654.25	617.50	1,564.91	1,201.08	3,383.49	110,270.76	
9	CP2171	SADIKU MUSTAPHA ABUBAKAR	07/04	53,245.33	34,329.92	11,079.00	60,408.92	113,654.25	9,784.17	11,564.91	1,201.08	22,550.15	91,104.10	2021451315
10	CP2221	AMIR ADO MUHAMMAD	07/04	53,245.33	34,329.92	11,079.00	60,408.92	113,654.25	0.00	5,145.95	1,201.08	6,347.03	122,307.22	
11	JP1375	Nasiru Sani	07/04	53,245.33	34,329.92	11,079.00	60,408.92	113,654.25	1,000.00	6,210.85	1,201.08	8,411.93	105,242.32	
12	JP1376	Anas inusa isa	07/04	53,245.33	34,329.92	11,079.00	60,408.92	113,654.25	1,000.00	6,210.85	1,201.08	8,411.93	105,242.32	
13	JP1378	Abubakar Ya'u	07/04	53,245.33	34,329.92	11,079.00	60,408.92	113,654.25	1,000.00	6,410.85	1,201.08	8,611.93	105,042.32	
14	JP1412	Idris isah Ibrahim	07/04	53,245.33	34,329.92	11,079.00	60,408.92	113,654.25	617.50	6,710.85	1,201.08	8,529.43	105,124.82	
15	P 1680	MUSA SHEHU	07/04	53,245.33	34,329.92	11,079.00	60,408.92	113,654.25	617.50	6,210.85	1,201.08	8,029.43	105,624.82	3101087398
16	P 1842	MUHAMMAD SARKI ILU	07/04	53,245.33	34,329.92	11,079.00	60,408.92	113,654.25	617.50	6,710.85	1,201.08	8,529.43	105,124.82	
17	P 1857	ABUBAKAR ALI ZANGO	07/04	53,245.33	34,329.92	11,079.00	60,408.92	113,654.25	617.50	6,710.85	1,201.08	8,529.43	105,124.82	3107644784
18	P 1877	MUJAHID ABDULLAHI	07/04	53,245.33	34,329.92	11,079.00	60,408.92	113,654.25	617.50	6,210.85	1,201.08	8,029.43	105,624.82	
19	P 1990	MUHAMMAD DANJUMA ADAMU	07/04	53,245.33	34,329.92	11,079.00	60,408.92	113,654.25	617.50	6,710.85	1,201.08	8,529.43	105,124.82	3031716456
20	P 1995	ABDULLAH HAMISU ABDULLAHI	07/04	53,245.33	34,329.92	11,079.00	60,408.92	113,654.25	617.50	6,710.85	1,201.08	8,529.43	120,124.82	3104505985
21	P 1996	AISHA AHMAD FALAKI	07/04	53,245.33	34,329.92	11,079.00	60,408.92	113,654.25	617.50	6,710.85	1,201.08	8,529.43	105,124.82	
22	P 1999	ABDULLAHI MUHAMMAD TSANYA'WA	07/04	53,245.33	34,329.92	11,079.00	60,408.92	113,654.25	617.50	11,710.85	1,201.08	13,529.43	100,124.82	
23	P 2000	AMINU UMAR MAIGARI	07/04	53,245.33	34,329.92	11,079.00	60,408.92	113,654.25	617.50	6,710.85	1,201.08	8,529.43	105,124.82	
24	P 2013	MUKHTAR USMAN YUNUSA	07/04	53,245.33	34,329.92	11,079.00	60,408.92	113,654.25	0.00	6,210.85	1,201.08	7,411.93	121,242.32	
25	P 2039	ZAHARADDEEN ABDU GAYA	07/04	53,245.33	34,329.92	11,079.00	60,408.92	113,654.25	617.50	6,210.85	1,201.08	8,029.43	105,624.82	
26	P 2146	MUHAMMAD UMAR YAHAYA	07/04	53,245.33	34,329.92	11,079.00	60,408.92	113,654.25	617.50	6,710.85	1,201.08	8,529.43	105,124.82	
27	P 2198	FAUZY'YA AMINU MUDI	07/04	53,245.33	34,329.92	11,079.00	60,408.92	113,654.25	617.50	6,210.85	1,201.08	8,029.43	105,624.82	
28	P1291	Garzali Abdu Ilvasu	07/04	53,245.33	34,329.92	11,079.00	60,408.92	113,654.25	617.50	22,210.85	1,201.08	24,029.43	89,624.82	



Kano University of Science and Technology, Wudil

Payroll Sheet Report for November, 2020
Overall Summary Report Sheet

PAYMENTS

Basic Salary: 84,726,860.95
PECULIAR: 55,209,196.70
Rent: 18,524,907.50

Other Allowances

Hazard 12,722,500.00
Trans. Al 20,000.00
Responsibility 5,767,098.11
Shifting Duty 24,717.00
Call Duty 467,720.00
Ag Allowance 93,367.49
VET DOC ALL 328,650.08
MED DOCTORS ALL 298,618.94
Domestic Servt 225,000.00

Total: 19,947,671.6
2

LOAN

MPCS 2019MPCS'L 311,662.31
MPCS 2020Hard loan 1,177,748.67
ISLAMIYA 2020ISLAMIYA 77,000.00
MPCS 2020LAFTOP 224,625.00
MPCS 2020MPCS 503,332.61
NASU 2020NASU 219,198.21
SECONDARY 2020SECONDARY 413,625.29
WELFARE LOAN ASUU 135,000.00
ASUU ASUU LOAN 232,777.78
ASUU ASUU SSF 451,000.00
ASUU ASUU Zonal CNTR 451,000.00
MPCS B MPCS 631,867.50
MPCS Computer 190,421.11
SSANU -CSSSANU MPC 2 57,375.00
SSANU -CSSSANU MPC 3 18,833.33
SSANU -CS-SSANU-MPC 10,600.00
NASUU DECEASEDCTR 656,000.00
MPCS K MPCS 233,446.70
KUTS MPCS KMPCS POT 21,714.29
KJST MPCS LTD KSMPCS BUZ 100,083.33
MPCS Laptop mpcs 548,720.93
MPCS LONG-TERM 820,951.19
MPCS M MPCS 569,111.11
MPCS MEMBERS LOAN 341,480.53
MPCS MEMBERS LOAN B 204,469.52
NASUU Motor cycle 252,788.58
NAAT Motor cycle 2 296,422.15

DEDUCTIONS

TAX: 3,255,676.06
Other Deductions ASUU 208,000.00
ASUU 2 164,500.00
ASUU Due 419,774.81
NAAT Due 48,509.79
NASU DUE 141,639.05
NASU DUES 1,285.44
Pension Cont. 4,004,017.73
SSANU Due 249,156.27

Deductions: 17,205,126.60

Fig - 4.3: Voucher Information

4.7 Conclusion

The objectives are to create files, deliver on schedule, and address system performance and efficiency issues. The main thing we've accomplished is to produce bank files (pay advice) and pay slips for compensation details so that banks

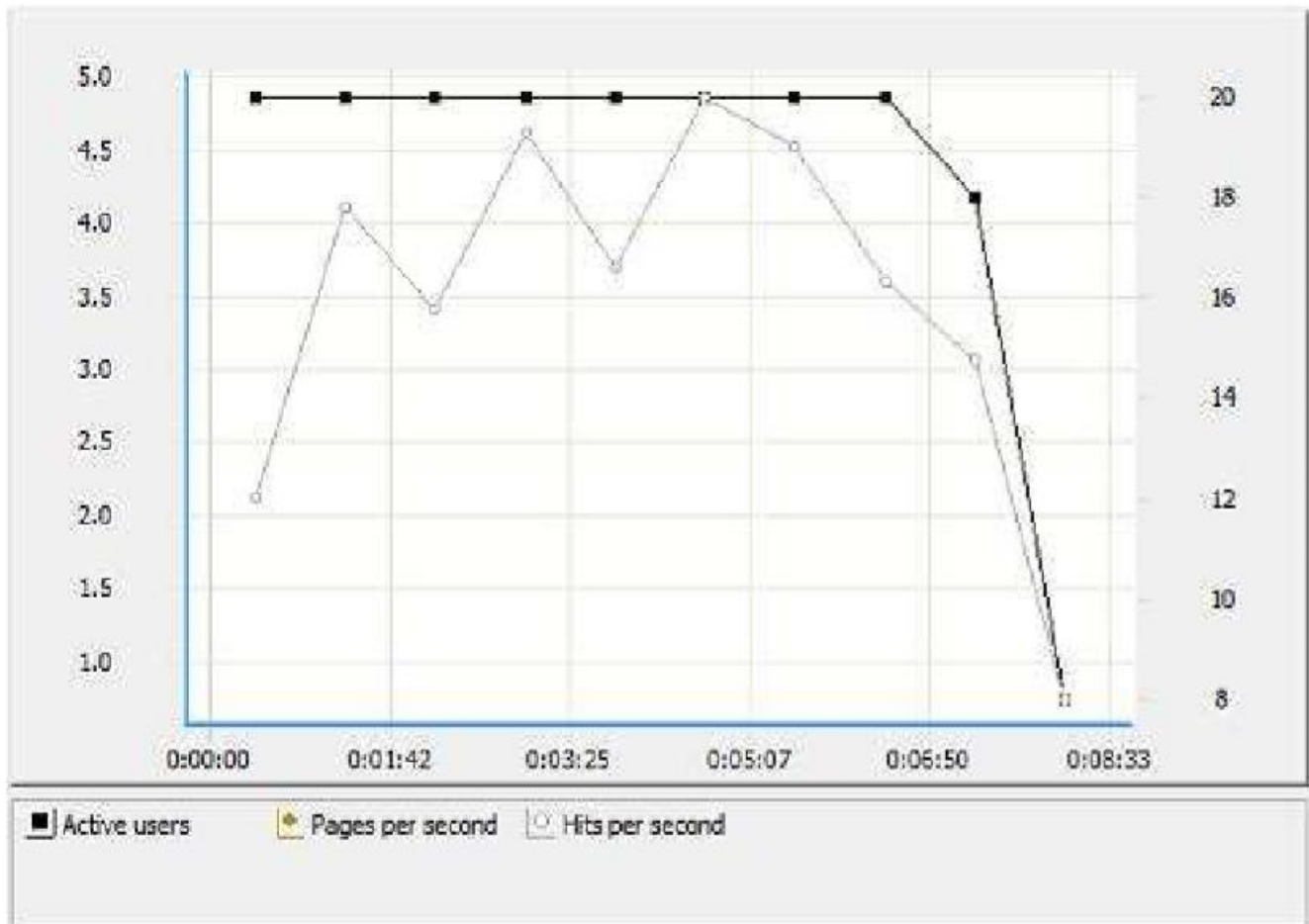
can deposit workers' wages into their accounts. We estimated the salary and developed a bank file after developing the method. The bank file was then submitted to the bank and was successfully completed (see section 4.3). We used the k6 0.3.1 tool to test the system's performance and reliability. It's a web site and web server load, tension,

and performance testing tool. As a result of creating simple testing scenarios, we were able to obtain some useful results, as shown in figure 4.6 below. These findings suggest

that this web application is effective and performs admirably.

Profile No.	Sessions		Pages		Hits		Total Kbytes sent	Total Kbytes received	Avg Response time, sec (with page elements)
	Successful	Failed	Successful	Failed	Successful	Failed			
Profile 1	200	0	3600	0	3600	0	2496	22994	0.02(0.02)

Overall Performance Graph



The system we built is more personalized and explicitly developed to meet the needs of our client, and it is capable of incorporating those needs into a single computerized system for the institution. The system can measure an employee's salary based on a variety of factors, including

rank. It can also create customized files for the institution, such as employee salary slips and bank files. The device can also measure the institutional tax liability using formulas given by the tax authorities in accordance with Nigerian law.

It creates and sends tax files to the IRS, and it is also more cost-effective than other wage management systems.

Maintenance is simple and requires no extra costs; more customization is possible depending on the needs of the

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- [6] T. W. Malone and K. Crowston, "The Interdisciplinary Study of Coordination," *ACM Computing Surveys* institution, which is not possible with current wage management applications on the market. As a result, the system has been successfully implemented and is operating properly in accordance with our objectives and standards.
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