**DESIGN AND IMPLEMENTATION OFAUTOMATED SALARY PAYROLL SYSTEM(CASE STUDY OF CRUTECH)**

**CHAPTER ONE**

**INTRODUCTION**

**1.1            BACKGROUND OF STUDY.**

Prompt payment of Staff salaries by Management of an Organization boosts the morale of staffs and enhances productivity. Manual preparation of staff’s salaries is often associated with lots of problems, which often time disrupt the morale of workers. The problem usually ranges from arithmetic errors in computation, delay in payment, underpayment or overpayment and so on.  In this project work, an automated system will be developed which shall eliminate all the problems associated with the manual process.

The most common method of keeping financial records of a company was manually. A bookkeeper kept the journals, the accounts receivable, the accounts payable, payroll and the ledgers in his best possible penmanship. In later Years, an accounting machine, which was capable of performing normal bookkeeping functions such as tabulating in vertical columns, performing arithmetic functions and typing horizontal rows, was used.

An example of payroll software is “QUICKBOOKS”. This Software allows the employer to enter the wages into the system after he has manually calculated them. The payroll and Check printing are processed through the system. The Employer has access to payroll reports that he/she can print and use to double check against what he/she entered before printing. This allows the Employer to correct any detectable errors beforehand. Computerized Payroll Systems allow you to process your entire normal payroll task via a computerized system, rather than by hand.

Many different Vendors offer Computerized Payroll System. Like different computer programs, they largely offer the same type of features with slightly different interfaces. There is more to Payroll than just handing out cash or checks. However, after gathering data on what the employees did and comparing it to their salaries, some simple payday mathematics will let the employer hand out the money.

**1.2            STATEMENT OF PROBLEM.**

The problems that faced by the admin and staffs of CROSS RIVER UNIVERSITY OF TECHNOLOGY :

Wastage of time in computing their payroll: They don’t need to waste a lot of time in calculating their salaries, the administrator wastes a lot of time in calculating one by one manually.

Error in computing: Error can be made through the manual computing of staff data/information, which can affect the finances of staff.

Manual checking of employees deductions and generate the essential report

Inaccurate reports on employee income and paychecks, in a situation where a staff get overpay or underpay

**1.3            OBJECTIVE OF STUDY.**

·        **GENERAL OBJECTIVE:** The main objective of this Study is to design and develop a database for **CROSS RIVER UNIVERSITY OF TECHNOLOGY** which contains a computerized payroll that deals out fast transactions, minimize manual checking of employees, deductions and generate the essential reports.  A computerized Payroll system must be able to keep and generate accurate reports on employee income. An equally important objective of a computerized payroll is to generate **Paychecks**

·        **SPECIFIC OBJECTIVE:**

To minimize the manual checking of each Staff, to reduce the time in computing staff details one by one manually.

Providing accurate imputation and computation of staff details (correct report on staff activity).

Automated checking of employees deductions and generate the essential report

Accurate reports on staff income and paychecks, staff get paid their actual account for there services.

**SCOPE OF STUDY.**

The study will cover the Entire school Database while focusing on the Payroll aspect but not entirely excluding the School database

**Clean, Clear and Accurate Salary Computing**

This proposal is mainly concerned in computing the accumulated salary of the company’s current manpower (either contractual or regular) and it is computed based on the company’s salary guidelines and staff’ attendance.

**Payslip Generation**

The proposed system automatically creates the salary summary or basically called as the payslipper employee.

**Payroll Report Generation**

This involves the system’s capability to produce a document which discloses the summary of all the payslip transactions.

**Financial Report Generation**

The proposed system is also equipped with the capability of automatically creating a report file which includes financial reports to be relayed to the finance and accounting system

**1.5            SIGNIFICANCE OF STUDY.**

This is the part of the study that discusses about the importance of creating Computerized Payroll system. It provides samples on how to run a Computerized Payroll system. Unlike companies situated in different continents like Europe, Asia, North America etc. where the employees are paid on an hourly basis, here in Cross River we stick to the traditional Monthly Payment and this reduces the stress put on Payroll processing. Normally, Payroll processors are required to calculate the Paycheck based on hours worked in respect to pay per hour, deduct Tax and other deductibles, Pension Plan etc. then print out the Paycheck but here, the Payroll processor I created would calculate the Paycheck based on the days present in the month, employee post (Position in Hierarchy), Type of Employee (Academic staff or Non Academic Staff), Tax and Pension Plan.

**1.6 DEFINITION OF TERMS**

**Payroll**: Payroll is a process by which employer pays employees for the work they have done. Any business with employees should have a payroll established.

**Payroll** **System**: A payroll system is a software which organizes all the tasks of employee payment and the filing of employee taxes. These tasks can include keeping track of work days, calculating wages, taxes, pensions and paying/printing of checks.

**Barcode:** This refers to a code consisting of a group of printed and variously patterned bars and spaces and sometimes numerals that is designed to be scanned and read into computer memory and that contains information (as identification) about the object it labels.

**Basic Pay :**This refers to monthly rate divided by the number of working days multiplied by the number of days worked.

**Biometrics:** This refers to the measurement of physical characteristics such as fingerprints and DNA, or retinal patterns for use in verifying the identity of individuals.

**Bundy Clock:**This refers to a clock card machine or punch clock or time recorder is a mechanical (or electronic)[timepiece](http://en.wikipedia.org/wiki/Timepiece)

used to assist in tracking the [hours](http://en.wikipedia.org/wiki/Hourly_worker) an employee of a company worked.

**Daily Time Record:**This refers to a record of how a person’s time has been spent. It is used to calculate pay, asses the efficient use of time, or charge for work done.

**Database:** This refers to a organized collection of [data](http://en.wikipedia.org/wiki/Data) for one or more purposes, it is usually in digital form.

**Days** **Worked:** This refers to the actual days worked by an employee, often well in excess of those stated in the contract of employment and some times without the payment of overtime.

**Deduction**: This refers to business expenses or losses which are legally permitted to be subtracted from the gross revenue of a firm in computing its taxable income.

**Employee:** This refers to a person who is hired to provide services to a company on a regular basis in exchange for compensation.

**LAN** (**Local** **Area** **Network**): This refers to supplies networking capability to a group of computers in close proximity to each other such as in an office building, school.

**Pay** **slip**: This refers to a detailed breakdown on how much an employee is paid during a Specific period.

**Report:**  This refers to give an official account or statement of as a treasurer reports the receipts and expenditures.

**Salary** : This refers to wages received on a regular basis, usually weekly, bi-weekly or monthly.

**Spreadsheets:** This refers to spreadsheet is a [computer application](http://en.wikipedia.org/wiki/Computer_application) with tools that increase the user's [productivity](http://en.wikipedia.org/wiki/Productivity) in capturing, analyzing, and sharing tabular [data sets](http://en.wikipedia.org/wiki/Data_set).

**Visual studio:** It uses Visual basic or VB.net which work in hand with ASP.net to create this payroll system. It is a programming tool used to create or develop windows or GUI (Graphic User Interface).

**CHAPTER TWO:**

**Literature Review**

**2.1** **Setting Up Payroll Systems:** Administering the payroll is one of the most critical and demanding functions of a business. This comprehensive, easy-to-use guide clearly explains the essential components of all pay office functions and procedures. It is an invaluable resource for payroll officers, business owners and advisers. Topics covered include: setting up payroll systems - including records required by law, choosing a computerised system and internal audit procedures, ongoing payroll administration - including basic employment law requirements, salary and leave calculations and payroll forms, tax issues - including employers' PAYE responsibilities and KiwiSaver obligations, FBT, entertainment expenses and hiring people from overseas, information relevant to both manual and computerised payroll systems; sample calculations, checklists, examples and forms essential for payroll procedures; quick-reference payroll calendar with key filing dates and holidays, simple explanation of legal and tax implications relevant for payroll purposes.

([David Jenkins](https://www.google.com.ng/search?tbo=p&tbm=bks&q=inauthor:%22David+Jenkins%22), [Daniel Hunt](https://www.google.com.ng/search?tbo=p&tbm=bks&q=inauthor:%22Daniel+Hunt%22), [Linda Pattullo](https://www.google.com.ng/search?tbo=p&tbm=bks&q=inauthor:%22Linda+Pattullo%22) CCH New Zealand, 2011 - [Payrolls](https://www.google.com.ng/search?tbo=p&tbm=bks&q=subject:%22Payrolls%22&source=gbs_ge_summary_r&cad=0))

**2.2 Payroll Introduced as Bookkeeping (14th Century:)**

The development of payroll started in the 14th and 15th centuries when businesses realized they needed both bookkeeping and accounting to create a successful business. Bookkeeping was originally used to track sales and purchases, but eventually was adopted to track all business finances, such as payroll. As tax laws increased and became mandatory, employers began paying tax on behalf of their employees via accounting and bookkeeping, as well.

**2.2.1 Payroll as a Business Practice(Early 20th Century:)**

Many business owners began to utilize a true payroll system in the beginning of the 20th century. Because of the lack of proper technology, automated payroll systems were not available. Instead, most business owners outsourced payroll management until automated systems became available in the late part of the century.

**2.2.2 Payroll Automation (Late 20th Century:)**

The 1980’s brought payroll automation for a variety of reasons.

First, the necessity for payroll automation became evident due to human error. For example, outsourced payroll resources would unknowingly return employee payroll and benefits errors to businesses.

Second, the introduction of the first computer science degree at Purdue University led to new, revolutionized computer systems and payroll management processes. Accuracy and timeliness were the most valued benefits of these new systems.

**2.2.3 Present: Personalized Payroll**

Today, there are about 2,000 payroll companies in the U.S., serving nearly one-third of all businesses.

These payroll companies provide a variety of services for employers, such as payroll processing, HR support, employee benefits administration and workplace solutions. (*Kelsey Basten*

*Published on September 7, 2017*).

**2.3 Application Of Payroll System:** Other studies that used a different programming language like[Aishwarya Gupta](https://www.scribd.com/aishwaryag_31) in (2013) AMITY University UTTAR Pradesh that develop a system entitled with employee payroll system  According to the researcher Employee Payroll system is an application that enables users to create and store Employee Records. This application also provides a facility which enables an administrator or an employee to generate a Pay slip. This application is helpful to the organization as it maintains data of employees related to that organization. Java is used to create this application as it is a platform independent language and can be used on a standalone machine as well as on a distributed network. Furthermore applications developed in java can be extended to Internet based applications. Thus java was chosen to do the front end task to design this application. That insisted the benefits of the application Easy calculations. Accuracy in payroll calculation is necessary in every company. It requires efficiency to pay employees the right amount of money they have earned, Reliable backup, Keeping large amounts of data for payroll can be challenging. This application stores your data in the database of your system

because you can’t store piles of papers and data manually,

It can be easily handled by the person who has basic knowledge of computer because it provides a user friendly environment, its hardware and software configuration is not very expensive. [(https://www.scribd.com/doc/242725271/Employee-Payroll-System)](https://www.scribd.com/doc/242725271/Employee-Payroll-System).

**2.4 Payroll Management:** Also related study of [Amrit Kadam](https://www.scribd.com/amrit_kadam) ( Aug 13, 2014) are include the study entitled College Payroll System & Taxation the purpose of this study is to aim of developing Employee Payroll Management is to provide an easy way not only to automate all functionalities involved managing leaves and Payroll for the employees of College, but also to provide full functional reports to management of College with the details about usage of leave facility & even deduction of income tax & related taxes can be done by this system. Payroll system is the heart of any Human Resource System of an organization. The solution has to take care of the calculation of salary as per rules of the College, income tax calculation and various deductions to be done from the salary including statutory deductions like Income tax and provident fund deductions. It has to generate pay-slip, cheque summary and MIS reports. It is understood that we are tired of managing thousand of odd papers, payslips, payroll reports, and salary details and so on. Imagine that we have a payroll processing system which will generate our pay slips and payroll reports within seconds. We can help others automated your payroll system by developing a customized payroll application that suits your specific requirements. [(https://www.scribd.com/doc/236714314/College-Payroll-System)](https://www.scribd.com/doc/236714314/College-Payroll-System) .

**2.5 Related Literature**

**2.5.1 Foreign Literature:**

According to the book "System Documentation" (2010), states that “a computerized payroll system must have the ability to update and maintain employee information and to generate required outputs including paychecks, reports to management and to the government.”

According to a blogged article in blastasia.com (2007), says that “a computerized payroll system is designed to help human resource professional as well as finance and accounting personnel to manage employee compensation, deductions, allowances, and benefits in an organization.”

According to the definition of Enterprise Resource planning on Wikipedia.com, stated that "organizations perceive ERP as a vital tool for organizational competition, as it integrates dispersed organizational systems and enables flawless transactions and productions". This statement serves as basis of this proposed systems capability and flexibility to integrate to other subsystems within the airline system.

**2.5.2 Local Literature**

According to the book of Trias(2010)entitled “What is a Payroll System?”, emphasized the importance of accurate calculations in a successful payroll system. It is that a payroll system is defined as “a system programmed to calculate taxes and deductions”, which can also be internet-based or offsite.

In the book of Musa (2009), entitled Philippine Based-Payroll System, emphasized the major elements or variables that a Computerized Payroll System consists. The author indicated the specific items the database of a Philippine-Based Computerized Payroll System must have.

According to the book of Lamberte, entitled” Philippine Payment System, stated that basic and essential parts of any payment –related system, the flow of information providing payment instructions and the flow of funds. He also emphasized that this flows requires an instrument to convey the information about the transactions, this is where a computerized payment system(in this case a Payroll System)comes in.