DECLARATION

I**, UWIRINGIYIMANA Jeannine** hereby declare that the dissertation submitted for the diploma of A2 level in computer science, at **MSGR.FELICIEN MUBILIGI TVET**, is my own original work and has not previously been submitted to any other institution of higher education. I further declare that all sources cited or quoted are indicated and acknowledged by means of a comprehensive list of references.

Date...../...../2018

Signed.....

UWIRINGIYIMANA Jeannine

Date...../...../2018

SUPERVISOR:

Signed.....

Mr. TUGUME Kitunzi Stephen

DEDICATION

To almighty God for His protection

To my lovely friend **Bobbie dumelle**

To my lovely parents

To my supervisor

To my brothers and sisters

To my lovely supporter

To all my friends and anyone who has contributed in the completion of this project

BONAFIDE CERTIFICATE

I,**TUGUME kitunzi stephen** hereby certify that this project report entitled "KABUYE SUGAR PAYROLL MANAGEMENT SYSTEM" is the original work of UWIRINGIYIMANA Jeannine who carried out the research under my supervision. I certify further that to the test of my knowledge, the work reported here in does not form part of any other project report or dissertation.

Date: ……../…..……/2018

Signature……

ACKNOWLEDGEMENT

I would like to present my thanks to the members of **kabuye sugar** . Special tanks are addressed to my supervisor **Mr. TUGUME Kitunzi** Stephen for his tireless effort, guidance, and support. My sincere gratitude goes to computer science's staff, especially its chief of technical department .I am also grateful to my parents, relatives and friends for their valuable support throughout the years of my education.

I would not forget to appreciate the company and friendship from my colleagues especially those who contribute to the completion of this work.

Thanks to those who have so faithfully supported my life and this part in it, especially my lovely

Supporter **Mr. Wallace**.

**MY GOD BLESS YOU ALL!!!

ABSTRACT

In this world we live, information and Communication Technology is playing a major role in the Development of the world, the society and the way people do their jobs including communication field. I have come up with this study because I realized that a company can pay its employees through electronic measures by use of Internet access. This is useful for people who do not have time to walk to the bank.

This project will also be useful to the companies that have many employees because it will be easy to manage, pay many employees at the same time .

This system will help to decrease disagreement between manager and employee

In process of giving employee punishment.

The World Wide Web uses many languages to develop and perform tasks on websites. The most common languages are html, php, java cold fusion, xml, etc. to facilitate the work to programmers, and many other tools have been developed to help programmers. These tools are for example XAMPP and so on

TABLE OF CONTENT

contents

DECLARATION ---------- i

DEDICATION---------- ii

BONAFIDE CERTIFICATE ----------iii

ACKNOWLEDGEMENT ----------iv

ABSTRACT---------- v

TABLE OF CONTENT ----------vi

LIST OF ACRONYMS AND ABBREVIATIONS---------- x

LIST OF TABLES ----------xi

LIST OF FIGURES----------xii

CHAPTER ONE: GENERAL INTRODUCTION ---------- 1

1.1Background ---------- 1

1.2. PROBLEM STATEMENT---------- 1

1.3. GENERAL OBJECTIVE ---------- 2

1.4. SPECIFIC OBJECTIVE ---------- 2

1.5. SCOPE OF THE PROJECT ---------- 2

1.6. PROJECT HYPOTHESIS---------- 2

1.7. PROJECT INTEREST---------- 2

1.8. ORGANISATION OF PROJECT ---------- 3

CHAPTER TWO LITTERATURE REVIEW ---------- 4

2.1. Introduction---------- 4

2.2. Database generality ---------- 4

2. 2.1. data ---------- 4

2.2.2. database ---- 4
2.2.3. entity ---- 4
2.2.4. record ---- 4
2.2.5. table ---- 4
2.2.6. field ---- 4
2.2.7. primary key ---- 4
2.2.8. unique key ---- 4
2.2.9 foreign key ---- 5
2 .2.10 advantages of database ---- 5
2.2.11 database development process ---- 5
2.3 Introduction to sql language ---- 6
2.3.1 definition ---- 6
2.3.2 parts of sql ---- 6
2.3.3. introduction to DBMS, RDBMS ---- 6
2.4 languages and tools used ---- 9
2.4.1. html ---- 9
2.4.2.php ---- 9
2.4.3 bootstrap ---- 9
.2.4.4 xampp ---- 9
2.4.5. css ---- 10
2.4.5. java script ---- 10
2.4.7. php myadmin ---- 10
2.4.8 my sql ---- 10
2.4.9 jquery ---- 10
2.4.10 ajax ---- 10

2.4.11 apache web server ---------- 11

CHAPTER THREE .RESEARCH METHODOLOGY ---------- 12

3.1.introduction ---------- 12

3.2 .analysis of existing system ---------- 12

3.3 techniques ---------- 13

3.3.1. document study technique ---------- 13

3.3.2. techniques of investigation ---------- 13

3.3.3. software development process models ---------- 13

CHAPTER FOUR. DESIGN AND ANALYSIS OF THE SOFTWARE ---------- 15

4.1 system analysis ---------- 15

4.2. Design overview ---------- 15

4.3.requirement specifications ---------- 15

4.3.1. software requirements ---------- 15

4.3.2. hardware requirements ---------- 15

4.4 site organization ---------- 16

4.5. entity relationship ---------- 17

4.5.1. introduction ---------- 17

types of relationship used in ERD ---------- 17

4.5.2. entity relationship symbols ---------- 18

ENTITY RELATIONSHIP DIAGRAM ---------- 21

CHAPTER FIVE: SYSTEM IMPLEMENTATION ---------- 22

5.1 Introduction ---------- 22

5.2 DATA DICTIONARY ---------- 23

5.3 interface design ---------- 26

INDEX PAGE AND LOGIN FORM ---------- 26

CHAPTER SIX. CONCLUSION AND RECOMMANDATION---------- 33

6.1 CONCLUSION---------- 33

6.2 RECOMMENDATION ---------- 33

6.3 BIBLIOGRAPHY AND REFERENCES---------- 34

6.3.1 BOOKS ---------- 34

6.3.2 WEBSITES ---------- 34

APPENDIX---------- 35

LIST OF ACRONYMS AND ABBREVIATIONS

Admin: Administrator

AJAX: Asynchronous JavaScript

DB: Database

DCL: Data Control Language

DDL: Data Definition Language

DEPT: department

DML: Data Manipulation Language

EMP: Employee

ERD: Entity Relationship Diagram

HTML: Hyper Text Mark-up Language

HTTP: Hyper Text Transfer Protocol

ID: Identification

PHP: Hypertext Preprocessor

PWD: Password

SQL: Structured Query Language

SQLI: Standard Query Language Improved

XAMPP: Extended Apache Mysql Php Perl

LIST OF TABLES

Table 1: Employee 23
Table 2: Payments 24
Table 3: messages 24
Table 4:penalty 25
Table 5:branhes 25
Table 6: departments 26

LIST OF FIGURES

Figure 1: Database development lifecycle 5
Figure 2: Waterfall Model 13
Figure 3: site organisation 16
Figure 4:Admin entity 19
Figure 5:employee entity 19
Figure 6:message entity 20
Figure 7:payment entity 20
Figure 8:penalties entity 20
Figure 9: ERD 21
Figure 10: index form 26
Figure 11:employees form 27
Figure 12:payment history form 28
Figure 13: message form 28
Figure 14: system setup form 29
Figure 15: penalties form 29
Figure 16: about employee form 30
Figure 17: monthly report form 30
Figure 18: add employee 31
Figure 19: printed form 32

CHAPTER ONE: GENERAL INTRODUCTION

1.1Background

Information technology is increasing very fast in the world. Many countries have the policy of promoting information technology using new technology which is based on a powerful and multidimensional tool known as computer. It is used by human to realize many functions in various domains of life.

Rwanda and some other African countries have not remained insensible to the opportunities provided by new technology. It has tried to computerize same domains though still faced by the problem of limited resources.

Unfortunately, computers aren't used rationally because of unqualified human resources in information technology today represents a powerful means for growth, development and modernization. The processing, distribution and control of information have become very important aspects of global development. Some information systems collect information manager it create information product for their used and very information is organized is very important aspect for any organization or end –used.

Therefore, according to the research I have done, I'm committed to study information technology application in management and how managing PAYROLL is critical issue, I have decided to orient, my research on **KABUYE SUGAR PAYROLLMANAGEMENT SYSTEM**

1.2. PROBLEM STATEMENT

The study specifically seeks to answer the following problems:

• Speed in processing payroll tends to be slow.

• Prone to mathematical errors that could consume much time than it should and could cause financial or legal trouble.

• Tallying of time cards is done manually.

• Time consuming in double checking the consistency of all the reports.

• Difficult and time consuming in keeping up-to-date in taxes and other deductions. ...

1.3. GENERAL OBJECTIVE

By using the result of this project manager of KABUYE SUGAR PAYROLL MANAGEMENT SYSTEM you will be able to know:

- Employees and their informations.
- Paying employees easier.
- Security of the system.

1.4. SPECIFIC OBJECTIVE

The specific objective of this project is to develop a system that will be able to store information about Employees registration, payments history and penalties that facilitate the company to know more information and to easily pay many employees in a short and safe way.

1.5. SCOPE OF THE PROJECT

The scope of this project is focused to KABUYE SUGAR PAYROLL MANAGEMENT SYSTEM to the time is limited to the employee registration, salary, deductions and assurance.

1.6. PROJECT HYPOTHESIS

My system enables to solve the problem of Employees such as registration, salary and payment in COMPANY, the manager is able to know and display all information of Employees in COMPANY.

1.7. PROJECT INTEREST

The development of this project was focused on the following interest:

- To promote information technology application in various organization.
- Applying the knowledge acquired during academic studies in development on integrated solution for practically.
- Implementation of PAYROLLwill help Employees in an efficient and effective way.

1.8. ORGANISATION OF PROJECT

This project subdivides in six chapters as follow:

First chapter: general introduction: this chapter shows overview of the project like scope of the project, problem statement, objectives of the project and interest of the project.

Second chapter: literature review: this chapter shows some tools that are used to get information about the project

Third chapter: research and methodology: this chapter shows method used to design project

Fourth chapter: system analysis and design: this chapter consists of entity relational diagrams (ERD) and data flow diagram (DFD).

Fifth chapter: system implementation: this chapter consists most tables and screenshots

Of the project

Sixth chapter: conclusion and recommendation: this chapter includes methodology and references used to get information

CHAPTER TWO LITTERATURE REVIEW

2.1. Introduction

This chapter explains related theoretical work or references used to develop the KABUYE SUGER PAYROLL MANAGEMENT SYSTEM, and background of the system. It also expounds on technologies to be used with a view of providing an overview for concept of the system's design.

2.2. Database generality

2. 2.1. data

Data are rows that can be summarized and analyzed in fact or a set of variables((date and paul 2012)).

2.2.2. database

A database is a systematically collection of data which are organized so that they can be easily accessed, managed, updated((date and paul 2012)).

2.2.3. entity

Entity is an object or a concept that is uniquely identifiable. It can be a person, a thing, a place, or an event((date and paul 2012)).

2.2.4. record

Is a generic term for rows in the database, A record is very often representing a piece of content (date and paul 2012).

2.2.5. table

Is the physical implantation of an entity, this is where the actual data is stored as customers, order, product or whatever each table consists of one or more columns (date and paul 2012).

2.2.6. field

The location in a database record reserved for a particular data, for example in a library catalog, author, title, ISBM, subject headings would all be stored in specific fields (date and paul 2012).

2.2.7. primary key

A primary key is one or more data attribute their uniquely identify an entity. In the primary key for an entity must never change if the record is referred to by a record in a different table (date and paul 2012).

2.2.8. unique key

A unique key is the same as primary key the difference is that a unique key accept to null value whereas a primary key doesn't accept it (date and paul 2012).

2.2.9 foreign key

The foreign key belongs to another table and has no meaning for the entity in which it is record in a different table (date and paul 2012).

2 .2.10 advantages of database

Database is used to store, manipulate and retrieve data any time needed.

Database are used to put together and permit access to the same data resources

2.2.11 database development process

A traditional process for conducting information system development life cycle (SDLC).The SDLC Is a complete set of step that a team of information systems and programmers follow in an organization to specify, develop, maintain and replace information system .

This process is viewed as a cascade of steps the output possible of each step is an input of the next step. It is also to back rock to previous step when prior decision needs to be reconsidered.

Figure 1: Database development lifecycle

2.3 Introduction to sql language

2.3.1 definition

SQL stand for Structured Query Language. It stands for language for accessing and manipulating data *(date and paul 2012).* It is widely used as a relational database language and has been Designed by the ANSI (American National Standard Institute) and ISO (International Standard Organization) as a standard language for relation database.

SQL is a complete database language; it is used for defining a relation database creating, viewing and specifying queries .In addition SQL allows for rows to be inserted updated and deleted.

2.3.2 parts of sql

DDL: stands for Data Definition Language. It is a part of SQL language which is used to define the database.

SQL can be used to execute the queries against a database, To retrieve data from a database, update records from database, create new table, create, stored procedures in database, create view in database, set permission on tables, procedures and view.

DML: stands for Data Manipulation Language. It is a part of SQL language which is used to create, view and specify queries *(date and paul 2012)*. SQL is a complete programming language like COBOL and JAVA.

2.3.3. introduction to DBMS, RDBMS

Database Management System (DBMS): A software package to facilitate the creation and maintenance of a computerized database .**D**ata **B**ase **M**anagement **S**ystem Software that controls the organization, storage, retrieval, security and integrity of data in a database (date and paul 2012).

Its importance is:

1. To give access to the data in a simple way
2. To authorize an access to information with multiple users

3. To handle the data present in the data base (insertion, suppression, modification)

It accepts requests from the application and instructs the operating system to transfer the appropriate data.

Examples of DBMS: Microsoft Access, Microsoft SQL server, Oracle, MYSQL, Informix, IBM DB2, Sybase, Dbase, Microsoft FoxPro, PostgreSQL, MSQL (Microsoft SQL), SQLite, Hyper file, Borland Paradox , File maker, IngresInterbase.

The major DBMS vendors are Oracle, IBM, Microsoft and Sybase.

2.3.3.1 FEATURES OF A DBMS

Data Security

The DBMS can prevent unauthorized users from viewing or updating the database. Using passwords, users are allowed access to the entire database or a subset of it known as a "subschema." For example, in an employee database, some users may be able to view salaries while others may view only work history and medical data (date and paul 2012).

Data Integrity

The DBMS can ensure that no more than one user can update the same record at the same time. It can keep duplicate records out of the database; for example, no two customers with the same customer number can be entered (date and paul 2012).

Interactive Query

A DBMS provides a query language and report writer that lets users interactively interrogate the database (date and paul 2012). These essential components give users access to all management information as needed.

Interactive Data Entry and Updating

A DBMS typically provides a way to interactively enter and edit data, allowing you to manage your own files and databases (date and paul 2012). However, interactive operation does not leave an audit trail and does not provide the controls necessary in a large organization. These controls must be programmed into the data entry and update programs of the application.

This is a common misconception about using a desktop computer DBMS. Creating lists of data for a user's own record keeping is one thing. However, although complete information systems can be developed with such software, it cannot be done without understanding how transactions and files relate to each other in a business system (see Database Design below). In addition, some type of programming is required, whether at a graphical drag and drop level or by using traditional languages.

Data Independence

When a DBMS is used, the details of the data structure are not stated in each application program. The program asks the DBMS for data by field name; for example, a coded equivalent of "give me customer name and balance due" would be sent to the DBMS. Without a DBMS, the programmer must reserve space for the full structure of the record in the program. Any change in data structure requires changing all application programs (date and paul 2012).

RDBMS

Short for **r***elational* **d***atabase* **m***anagement* **s***ystem* is a type of database management system (DBMS) that stores data in the form of related tables. It is based on the relational model .Most popular databases currently in uses are based on the relational database model.

Relational databases are powerful because they require few assumptions about how data is related or how it will be extracted from the database. As a result, the same database can be viewed in many different ways. The data can be accessed or reassembled in many different ways without having to change the table forms (date and paul 2012).

Database System: The DBMS software together with the data itself.

Note:

- The term database is correctly applied to the data and their supporting data structures, and not to the **database management system** (referred to by the acronym **DBMS**).

-The database data collection with DBMS is called a **database system**.

2.4 languages and tools used

2.4.1. html

Hypertext Markup Language (HTML) is a markup language designed for creating web pages, that is a markup language(www) (ducket 2014) for describing web documents (web pages).

HTML stands for Hyper Text Markup Language.

A markup language is a set of markup tags.

HTML documents are described by HTML tags.

Each HTML tag describes different document content.

2.4.2.php

Is a server-side scripting language designed for web development but also used as a general-purpose programming language. Originally created by Rasmus Lerdorf in 1994, the PHP reference implementation is now produced by The PHP Group (murach 2017).

Also it is called Front-end-framework.

2.4.3 bootstrap

is a free collection of tools for creating a web applications. It contains HTML and CSS-based design buttons, navigation, icons and other components, as well as optional JavaScript extensions (date and paul 2012).

.2.4.4 xampp

XAMPP is free and open source cross plat form web server solution stock package consisting mainly of the apache HTTP server, MYSQL database, and interpreters for scripts written in the PHP and Perl programming language (murach 2017).

XAMPP `S Name Is an Acronym For

X: extended

A: apache

M: MYSQL

P: Php

P: Perl

XAMPP is a free and open source cross-platform web server solution stack package developed by Apache Friends, consisting mainly of the Apache HTTP Server, MariaDB database, and interpreters for scripts written in the PHP and Perl programming languages (date and paul 2012).

2.4.5. css

is a style sheet language used for describing the presentation of a document written in a markup language (date and paul 2012).

2.4.5. java script

JavaScript is a scripting language that enables you to enhance static web applications by providing dynamic, personalized, and interactive content (date and paul 2012). This improves the experience of visitors to your site and makes it more likely that they will visit again. On the client, JavaScript is maintained as source code embedded into an HTML page. On the server, it is compiled into byte code (intermediate language), similar to Java programs.

2.4.7. php myadmin

Php My Admin is an open source tool that can manage a whole MySQL server as well as a single database. To accomplish the latter you'll need a properly set up MySQL user who can read/write only the desired database (murach 2017). It's up to you to look up the appropriate part in the MySQL manual.

2.4.8 my sql

MYSQL Extension (MySQL Improved) is a relational database driver used in the PHP programming language to provide an interface with MySQL databases.

There are three main API options when considering connecting to a MySQL database server: PHP's MySQL Extension. PHP's MySQLi Extension. PHP Data Objects (PDO) (date and paul 2012)

2.4.9 jquery

is a fast, small, and feature-rich JavaScript library.

It makes things like HTML document traversal and manipulation, event handling, animation, and Ajax much simpler with an easy-to-use API that works across a multitude of browsers. jquery is free to use (date and paul 2012)

2.4.10 ajax

stands for Asynchronous JavaScript and XML.

In a nutshell, it is the use of the XML Http Request object to communicate with server-side scripts (date and paul 2012).

It can send as well as receive information in a variety of formats, including JSON, XML, HTML, and even text files.

2.4.11 apache web server

Apache is short for Apache HTTP Server Project, a robust, commercial-grade and freely-available open source HTTP Web Server software produced by the Apache Software Foundation (date and paul 2012).

It is the most commonly used web server on the internet, and is available on many platforms, including Windows, Unix/Linux and Mac OS X.

CHAPTER THREE .RESEARCH METHODOLOGY

3.1.introduction

Methodology refers to a set of methods and principles that are used when studying a particular

kind of work. Research methods refer to a number of ways of arriving at the knowledge regarding that research. This research is carrying out to implement KABUYE SUGARPAYROLL MANAGEMENT SYSTEM this chapter is a review of analyses of the existing system of a web base application, techniques and the software development process model that will be used as the methodology, for building KABUYE SUGAR PAYROLL MANAGEMENT SYSTEM.

The software development process model chosen for this project is the "Waterfall "model and the approach is evolutionary. It is commonly used for web application. It is a simplified, partially working version of an application that can be used in discussion with a client as the basis of the final system.

3.2 .analysis of existing system

The initial step while developing an application program consists exactly to find out what to be solved and what should be done. All those features help the developer to find out what are the requirements specifications that the system will use, what are the users, what is the benefit of the application, and so on. There's not much application or software that COMPANIES use in their managing and providing payment between employees. They use **traditional system characterized by paper based which is the major bases of environment pollution.**

During the data collection, the researcher compared the existing system process used in PAYROLL MANAGEMENT SYSTEM, with the new proposed system, in order to better analyze the operational system. It is noted that the existing system is paper-based. Data recording and retrieving are done manually; which can result in some inconvenience such as ease loss of data, the lack of accessibility of information about system.

3.3 techniques

3.3.1. document study technique

This technique permits the researcher to consult books, reviews, “project report”, class notes, and Webpages, related to the subject of this work.

3.3.2. techniques of investigation

To understand deeply the requirements and the problem domain, some techniques will help to achieve the aim of this work. The main technique used is” observation”.

3.3.3. software development process models

The software development process focus on the phase of activities directly related to production of the software, for example, design, coding, and testing.

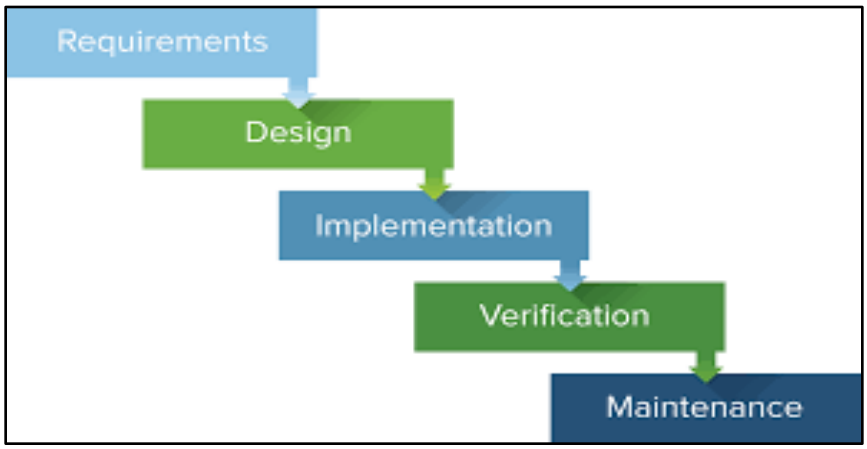

Figure 2: Waterfall Model

3.3.3 .1. waterfall model

This is the most common and classic of life cycle models, also referred to as a linear-sequential life cycle model. It is very simple to understand and use. In a waterfall model, each phase must be completed in its entirety before the next phase can begin. At the end of each phase, a review takes place to determine if the project is on the right path and whether or not to continue or discard the project. Waterfall Life Cycle Mode

3.3.3.2 advantages of waterfall

The system requirements are identified long before programming begins. Change to the requirements is minimized as the project proceeds. Is simple and easy to use .Easy to manage due to the rigidity of the model each phase has specific deliverable and a review process. Phases are processed and completed one at time Works Well for smaller project where requirements are

very well understood.

3.3.3.3 disadvantages of waterfall

The design must be completely specified before programing begins. Along time elapses between the completion of the system proposal in the analysis phase and the delivery of the system. Adjusting scope during the life cycle can replace a Project No working software is produced until rate during the life cycle. High amount of risks and uncertainly. Poor model for complex object oriented projected. Poor model for long and ongoing project. Poor model where requirements are at a modulated to high risk of changing

System Analysis is the study of sets of interacting entities which is closely related to requirements analysis and it is the process of breaking a system into smaller parts to gain a better understanding of it.

CHAPTER FOUR. DESIGN AND ANALYSIS OF THE SOFTWARE

4.1 system analysis

Until rate during the life cycle. High amount of risks and uncertainly. Poor model for complex object oriented projected. Poor model for long and ongoing project. Poor model where requirements are at a modulated to high risk of changing

4.2. Design overview

The purpose of the design phase is to plan a solution of the problem specified by the requirement document. This phase is first step in moving from the problem domain to the solution domain. The design of a system is perhaps the most critical factor affecting the quality of the software, and has a major impact on the later phases, particularly testing and maintenance. The output of this phase is the design document. This document is similar to a green print or plan for the solution, and is used later during implementation, testing and maintenance

4.3.requirement specifications

4.3.1. software requirements

4.3.1.1. operating systems

My system was tested on various operating systems such as: Windows XP and Windows7, windows vista,windows8, windows10 . I have used windows 10 as my default operating system

4.3.1.2. programming languages

To develop my system I was used Php programming language, XAMMP which include Apache as web server, MYSQL as relational database management system and PHP, html, CSS for formatting.

4.3.2. hardware requirements

The hardware: required for my system to be implemented are computers, printers, Ups.

The basic hardware requirement includes:

Processor: AMD Pentium processor

RAM: 1MB

Hard disk 1 GB (recommended)

4.4 site organization

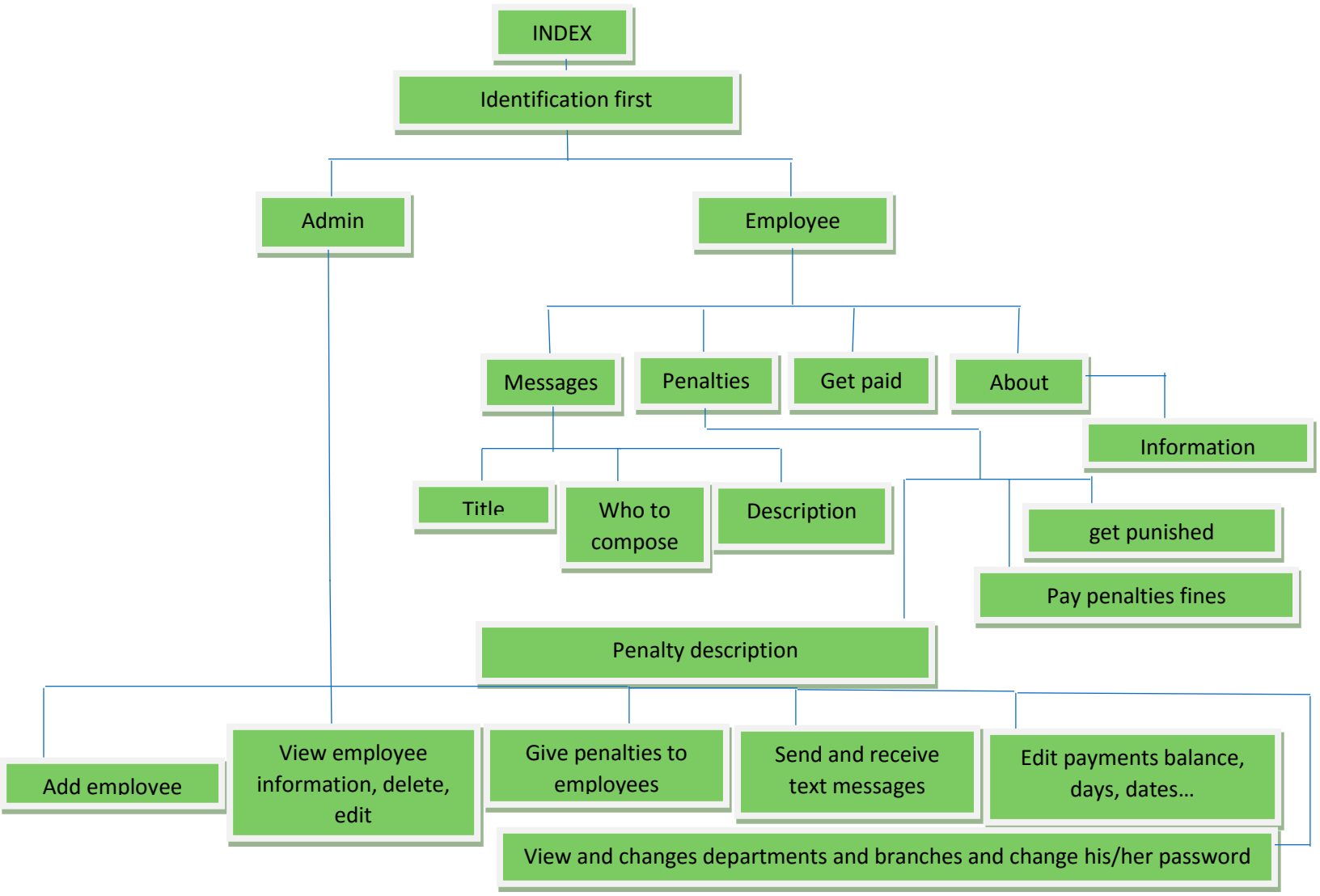

Figure 3: site organisation

4.5. entity relationship

4.5.1. introduction

An entity relationship model is a detailed logical representation of the data for an organization of stock area .the ER model is expressed in terms of entities in stock environment.

The relationship or association among these entities and the attributes of both the entities and relationship. An ER model is normally expressed as an ERD (Entity Relationship Diagram) which is a graphical representation of E-R model.

An Entity Relationship Diagram (ERD) is a snapshot of data structures. An Entity Relationship Diagram shows entities (tables) in a database and relationships between tables within that database. For a good database design it is essential to have an Entity Relationship Diagram.

There are three basic elements in ER-Diagrams:

- Entities are the "things" for which we want to store information. An entity is a person, place, thing or event.
- Attributes are the data we want to collect for an entity.
- Relationships describe the relations between the entities.

types of relationship used in ERD

- One-to-One, A row in table A can have only one matching row in table B, and vice versa.
- One-to-Many (or Many-to-One), This is the most common relationship type. In this type of relationship, a row in table A can have many matching rows in table B, but a row in table B can have only one matching row in table A.
- In a many-to-many relationship, a row in table A can have many matching rows Many-to-Many in table B, and vice versa.

4.5.2. entity relationship symbols

Entity: is an existing, object, concept or real thing that is uniquely identifiable where is used for storing the organizational data.

Its symbol is a box:

Attribute: is a part of the description of the entity. The entity itself is described by one or more attributes together; they describe all things of importance about the entity.

Its symbol is an oval:

Relation: is an association between several entities; it is on ordered pair consisting of particular related entities.

Its symbol is a diamond:

Line: is used to join entities to their attributes, and joining entities with their relations

Its symbol is a line: ——————————

ENITY RELATIONAL DIAGRAM

ADMIN ENTITY

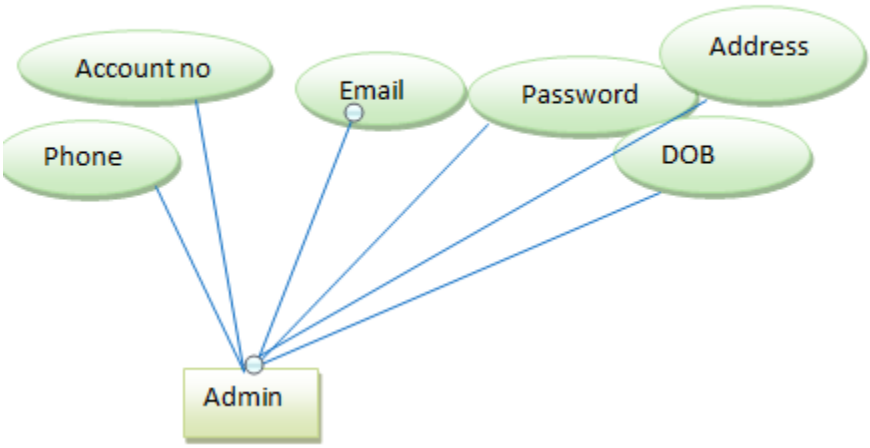

Figure 4:Admin entity

EMPLOYEE ENTITY

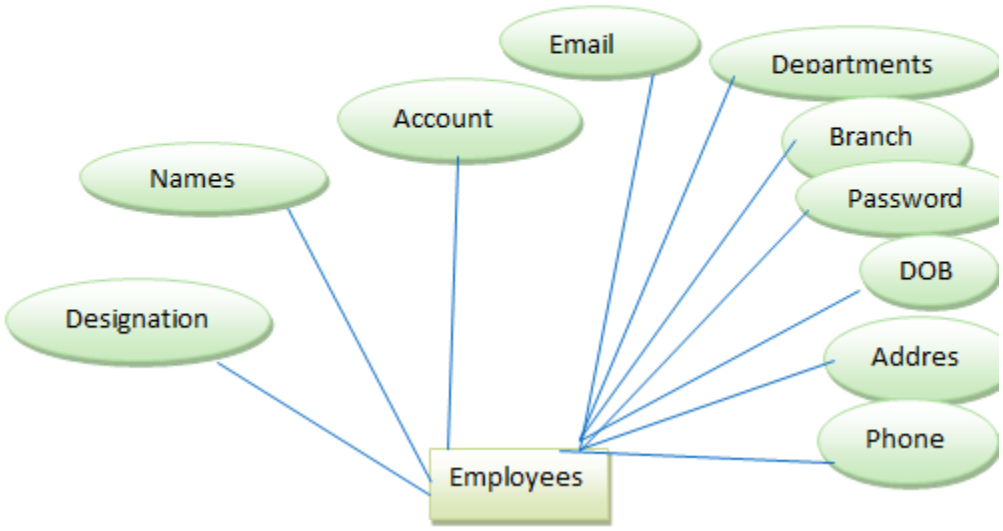

Figure 5:employee entity

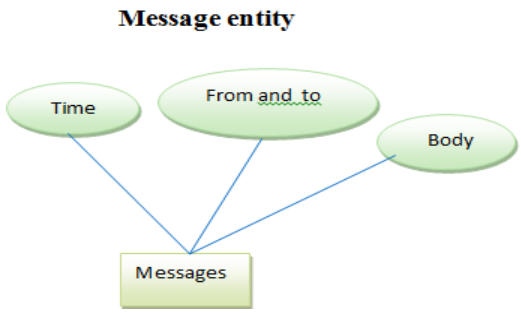

Figure 6:message entity

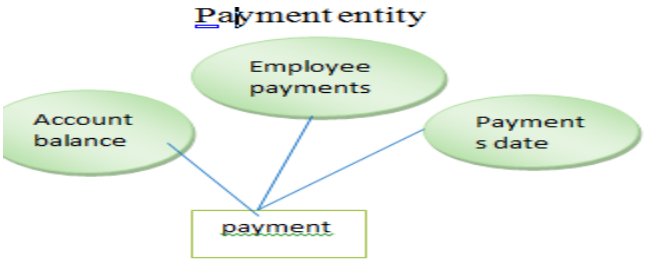

Figure 7:payment entity

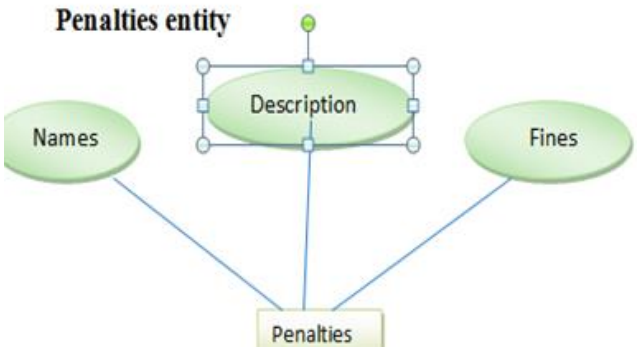

Figure 8:penalties entity

ENTITY RELATIONSHIP DIAGRAM

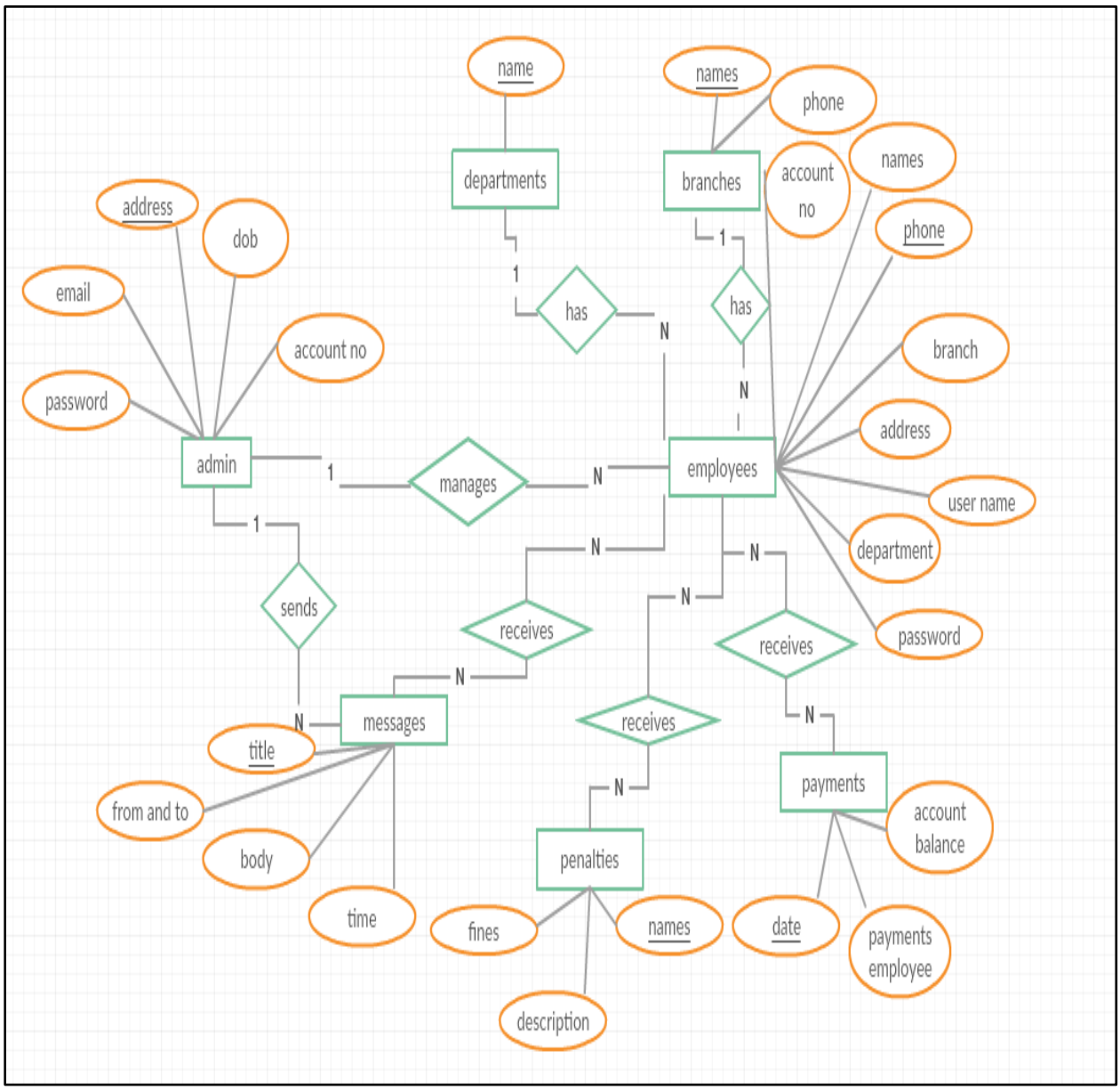

Figure 9: ERD

CHAPTER FIVE: SYSTEM IMPLEMENTATION

5.1 Introduction

This chapter explains a bit more about the best way of paying employees. It therefore illustrates the entity relationship diagram, data dictionary and some screenshots of the system.

Minimum system requirement

The minimum requirements are divided into software and hardware, the software requirement include:

Operating system:	Window 10
Browser:	Chrome
Web server:	localhost
Database:	PhpMyAdmin Xampp

5.2 DATA DICTIONARY

Employee

this table shows all information needed for employee in order to be registered by admin

No	Name	Data type	Description	constraints
1	Id	Int	Identification of employee	Primary key
2	First name	Char(60)	First name of employee	Not null
3	Second name	Char(69)	Second name of employee	Not null
4	Gender	Char(80)	sex of employee	Not null
5	Date of birth	Char(255)	Birth day date of employee	Not null
6	Phone	Char(100)	Contact number of employee	Not null
7	Address	Char(100)	Location of the employee	Not null
8	Picture	Char(255)	Image of the employee	Not null
9	Branch	Char(60)	Branch employee work in	Not null
10	Designation	Char(100)	choice of the employee	Not null
11	Department	Char(60)	Department of the employee	Not null
12	Join date	Char(255)	Joining date of employee	Not null
13	Salary	Int	Money employee will be paid	Not null
14	Assurance	Char(80)	amount of assurance of employee	Not null
15	Deductions	Int	Amount of deductions of employee	Not null
16	Bank account no	Char(255)	Bank account number of employee	Not null
17	Type	Char(255)	Whether user is admin or normal user	Not null
18	Username	Char(255)	Username of the employee	Not null
19	Password	Char(255)	Password of the employee	Not null

Table 1: Employee

Payments

this table shows all information about payment, like account balance, paying employees and payment date.

no	Name	Data type	Description	Constraints
1	Account	Varchar(80)	Account	Primary key
2	Payment date	Int(50)	Date on which employees get paid	Not null
3	Payment period	Int(30)	Number of days Employees get paid	Not null
4	Last payment by	Int(20)	Who is responsible of payment	Not null

Table 2: Payments

Messages

This table shows all information about messages like sending, receiving and person who done Those actions.

no	Name	Type	Description	Constraints
1	Msg id	Int(12)	Identification of message	Primary key
2	Title	Varchar(100)	Title of the message	Not null
3	Body	Varchar(56)	Content of the body	Not null
4	Sender	Int(12)	Person who sends message	Not null
5	Receiver	Int(12)	Person who receives message	Not null
6	Date and time	Int(30)	Date and time message was delivered	Not null
7	Read	Int(12)	Person who has ability to read	Not null

Table 3: messages

Penalty

This table shows all details about penalties like who is responsible of giving penalties, who receives it and which fines offered.

no	Name	Type	Description	constraints
1	Penalty id	Int(12)	Identification of penalty	Primary key
2	Penalty description	Varchar(100)	reason of being punished	Not null
3	Fines	int(56)	Money will be removed on your account	Not null
4	Penalty by	Int(12)	Person who gives penalities	Not null
5	Penalty to	Int(12)	Person who receives penalities	Not null
6	Punish Date	varchar(30)	Date penality was send	Not null
7	Read	Int(1)	Person who has ability to read	Not null

Table 4:penalty

Branches

this table shows all information about branch if you want you can add new branch or edit existing branch.

no	Name	Type	Description	Constraints
1	Branch id	Int(20)	Identification of branch	Primary key
2	Branch name	Varchar(30)	Name of branch	Not null
3	Branch contact	Varchar(30)	Contact of branch	Not null
4	Saved by	Int(20)	Person who saved it	Not null
5	Last updated by	Int(20)	Person who updated it last time	Not null
6	Last updated	Int(20)	Last time Being updated	Not null

Table 5:branhes

Departments

This table shows all information about department if you want you can add new department or edit existing department.

no	Name	Data type	Description	Constraints
1	Dept id(pk)	Int(20)	Identification of department	Primary key
2	Dept name	Varchar(200)	Name of department	Not null
3	Saved by	Int(20)	Person who saved it	Not null
4	Last updated by	Int(20)	Person who updated last time	Not null
5	Last updated	Int(20)	Last time being updated	Not null

Table 6: departments

5.3 interface design

INDEX PAGE AND LOGIN FORM

This is the first form of an employee and Admin

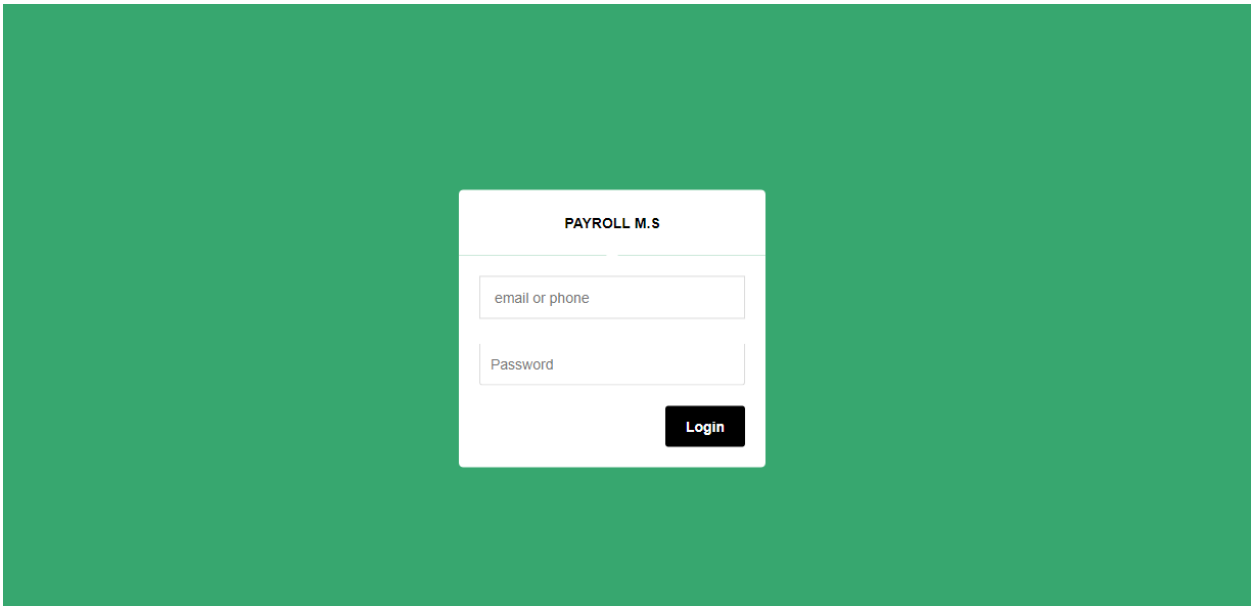

Figure 10: index form

EMPLOYEES' FORM

Here this is the form that admin has ability and responsible for editing,

deleting and viewing employee information of added employees

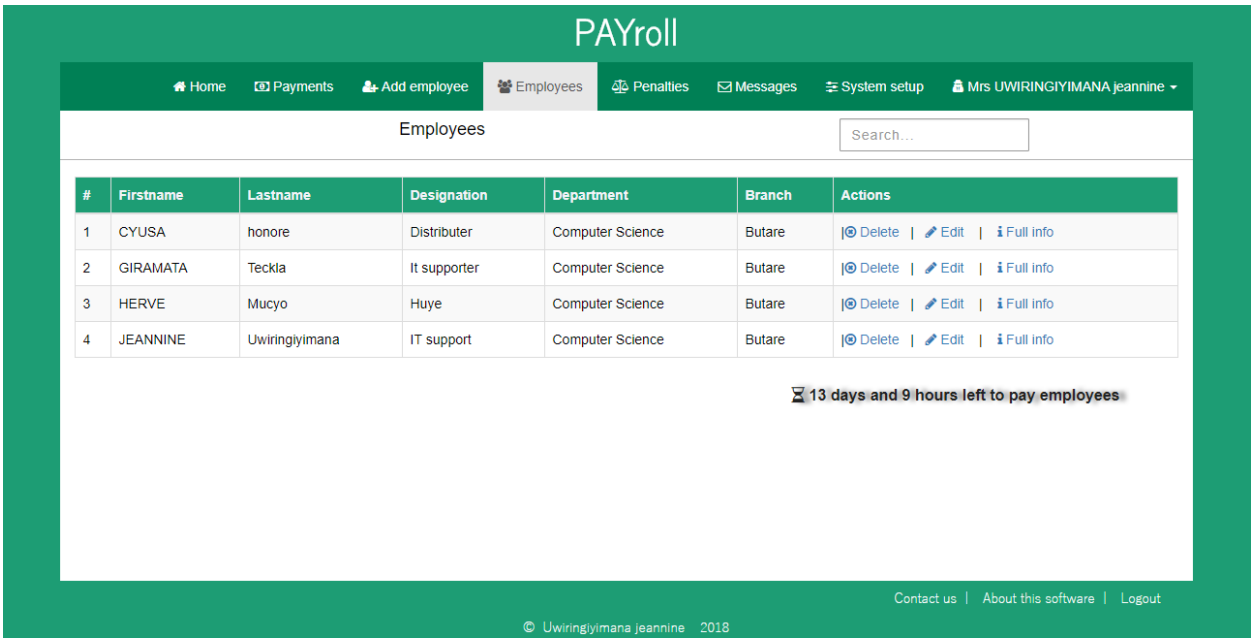

Figure 11:employees form

PAYMENT HISTORY FORM

Here this is a form of payment history

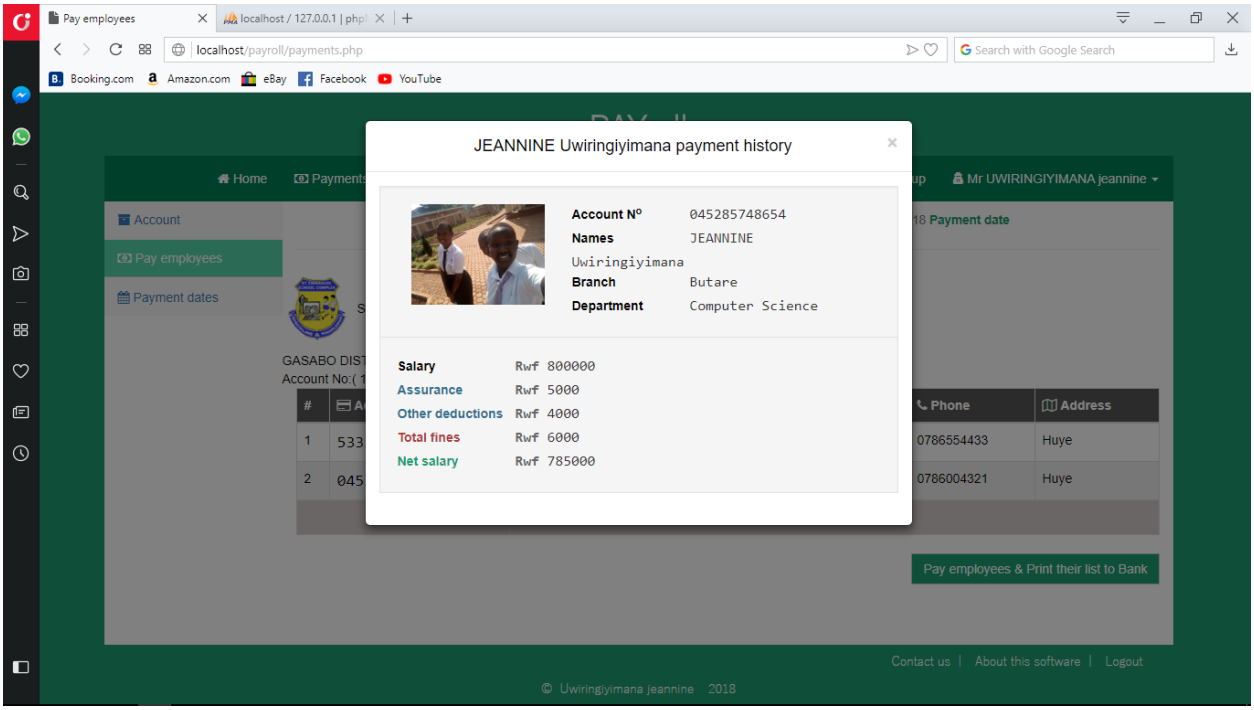

Figure 12:payment history form

MESSAGE FORM

Here this is a form of messaging in the software between admin and the employees

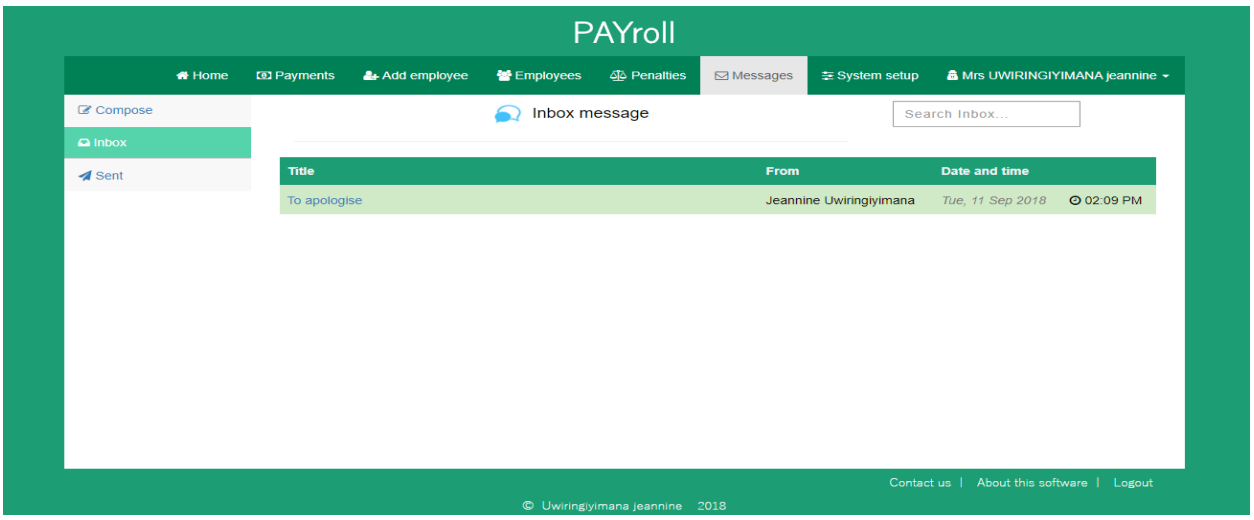

Figure 13: message form

SYSTEM SETUP FORM

Here this is a form of setting information of a company day to day for example: adding new branches, adding new departments, see branches and departments.

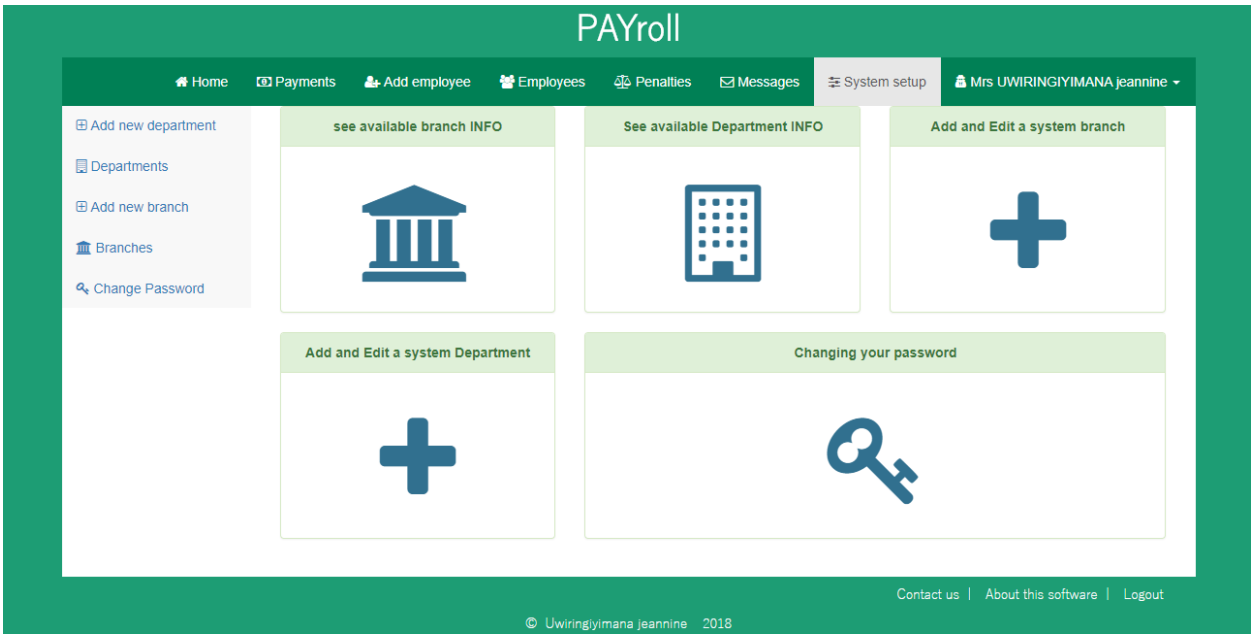

Figure 14: system setup form

PENALTIES FORM

Here this is a form where admin punish employees and give them other penalties.

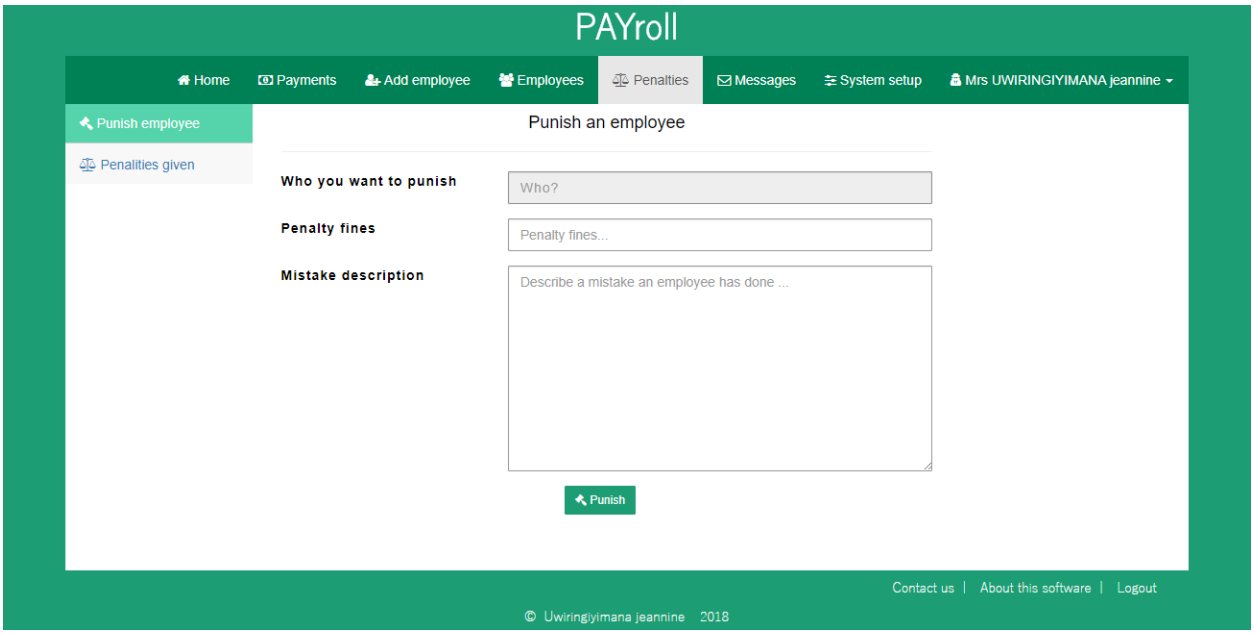

Figure 15: penalties form

ABOUT EMPLOYEE FORM

Here this is a form of employee information.

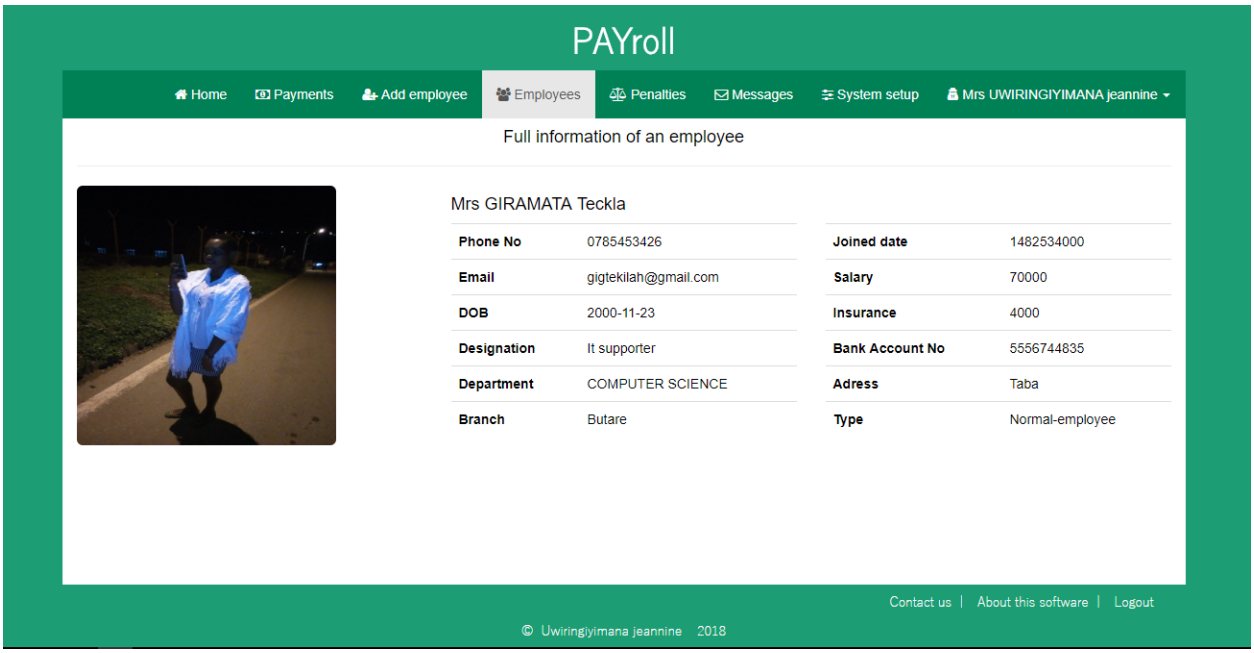

Figure 16: about employee form

MONTHLY REPORT FORM

Here this is a form of payment dates of employees. This is a payments form

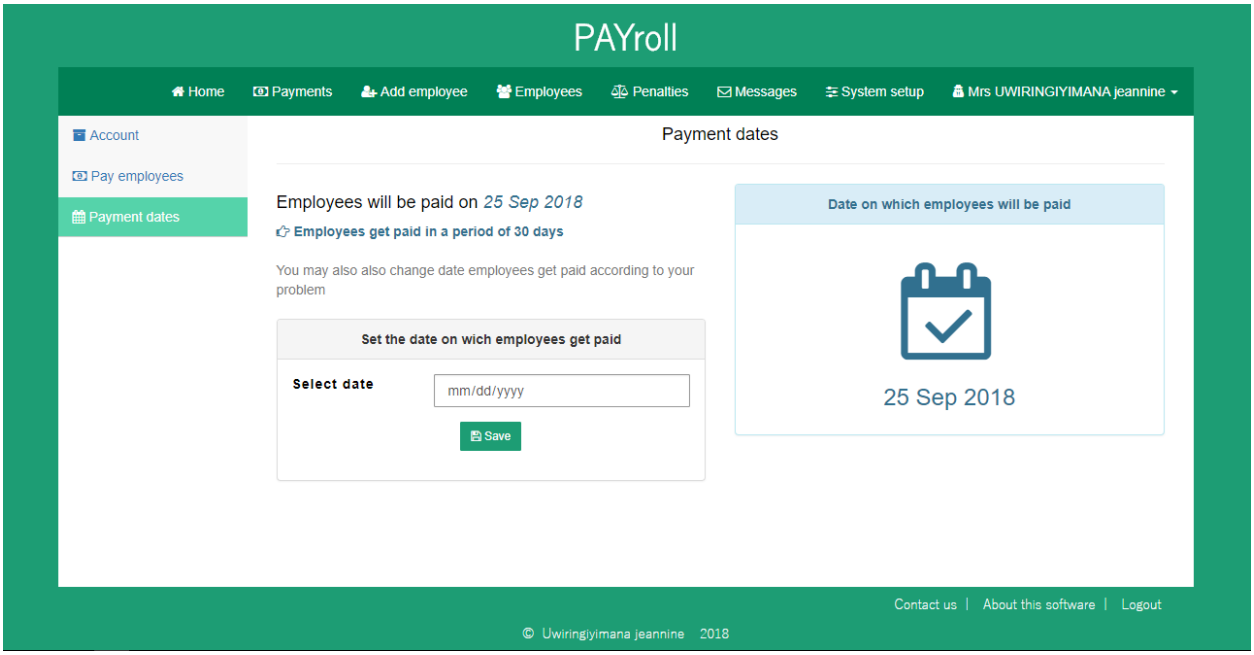

Figure 17: monthly report form

ADD EMPLOYEE FORM

Here this is the form of admin of adding employees to the software so that the employees can be able to sign in as normal user then after can access information about hi/her job

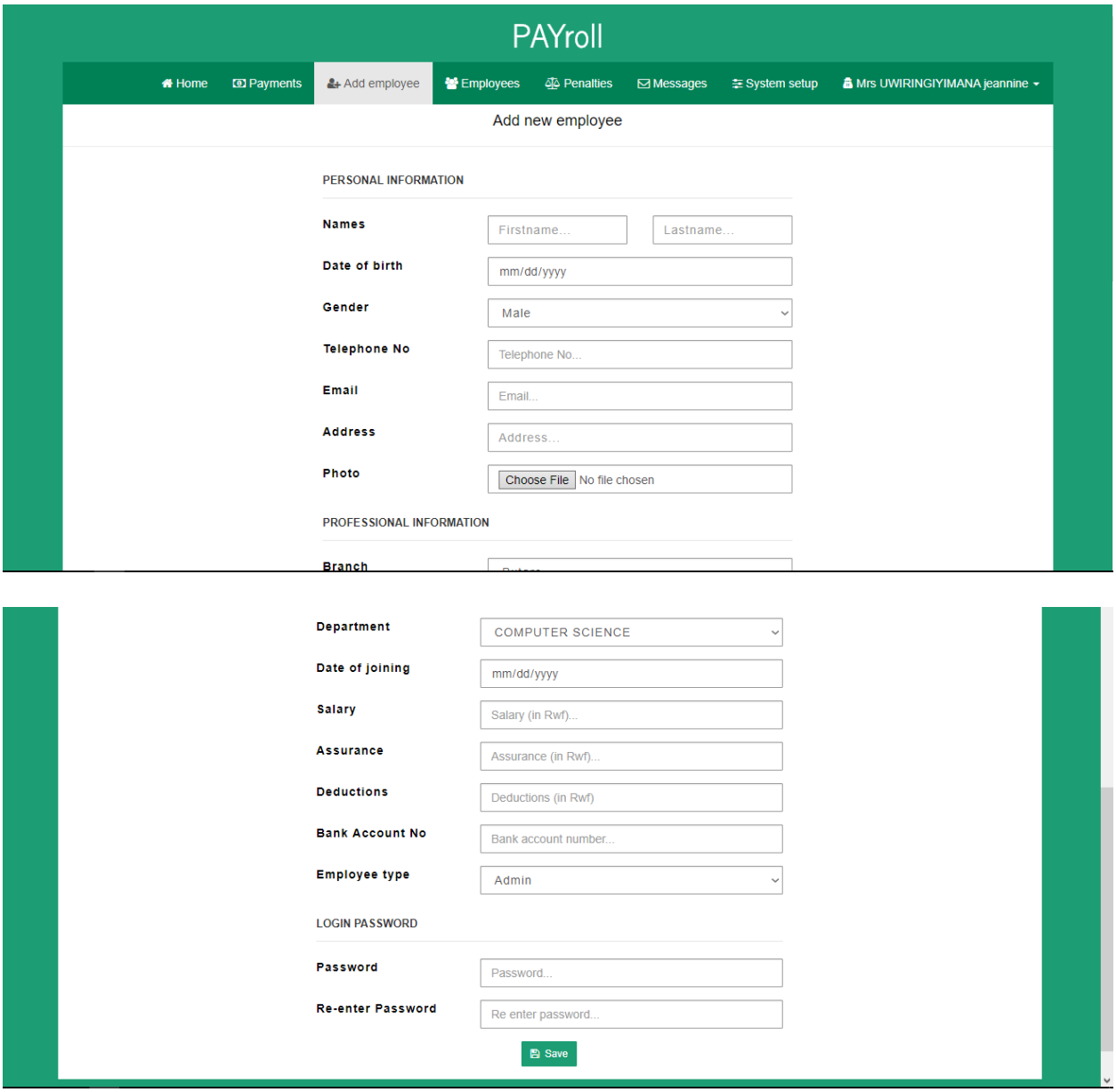

Figure 18: add employee

PRINTED FORM

Here this is a form which an admin will goes with to the bank and pay employees.

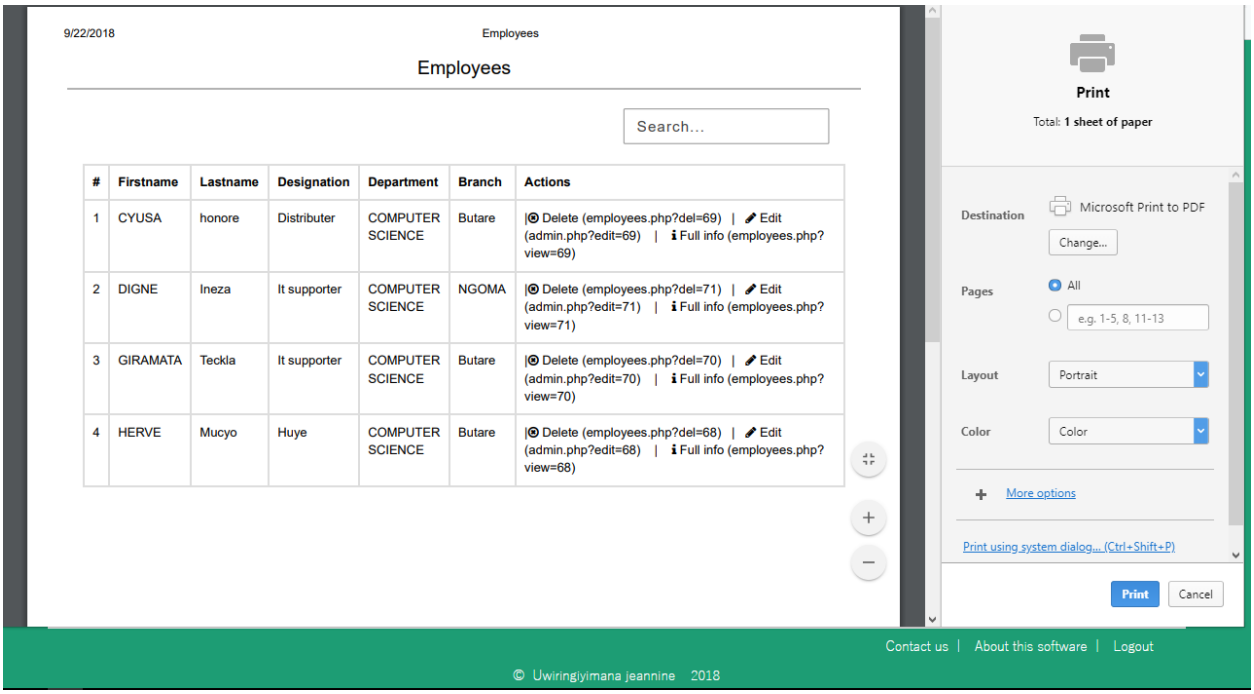

Figure 19: printed form

CHAPTER SIX. CONCLUSION AND RECOMMANDATION

6.1 CONCLUSION

According to the world evolution and technology, as well as the data computerization, I studied and analyzed the system which can be easier for the user to use and which is more accurate. This system was run successfully even if all necessary question asked during payroll system process don't figure on this system.

6.2 RECOMMENDATION

During this work I have met many problems,

- firstly the access in laboratory,
- secondary the lack of enough documents including books.

For that reason I recommend our school authorities to help students to have enough materials including books and enough computers and other documents and also give them enough time in laboratory for practice.

I also recommend that this project can be presented to different companies all over the country.

I finally recommend my young brothers of the computer science department to extend this project by printing of this payroll system.

6.3 BIBLIOGRAPHY AND REFERENCES

6.3.1 BOOKS

ange, honorette uwuburiza. *database notes books from s5 and s6 computer science.* ange, 2017 &2018.

constantin, iradukunda. *web design notebooks from s5 & s6computer science.* constantin, 2017&2018.

date, c j, and newman paul. *database design and reletional theory:normal formsand all that jazz.* o'reilly media;1 edition(april 27,2012), 2012.

ducket, jon. *web design with html,css,javascript and jquery set.* wiley; 1 edition(july 8,2014), 2014.

murach, joel. *murach's php and mysql(3rd edition).* mike murach & associates;3rd enhanced editor(october 24,2017), 2017

renatha, mukahatungimana. *system analysis.* 2018.

6.3.2 WEBSITES

techopedia. https://www.techopedia.com (accessed june 24, 2018).

w3schools. http://www.w3schools.com/tags/att_input_required.asp (accessed july 7, 2018).

webopedia. http://www.webopedia.com/TERM/H/html.html (accessed july 23, 2018).

wikipedia. http://en.wikipedia.org/wiki/implementation (accessed may 25, 2018).

wikipedia. http://en.wikipedia.org/wiki/PhpMyadmin (accessed july 04, 2018).

APPENDIX

INDEX

```
<?php
session_start();


require_once"./includes/connect.php";
if (isset($_POST['login'])) {
   $user=$_POST['username'];
   $pass=sha1($_POST['password']);
   if (!empty($user) && !empty($pass)){
        $sql="SELECT * FROM employees WHERE (username='$user' || phone='$user') AND
password='$pass'";
        $query=mysqli_query($conn,$sql);
        if ($fet=mysqli_fetch_array($query)) {
           $_SESSION['status']= 1;
           $_SESSION['id']=$fet['id'];
           $_SESSION['type']=$fet['type'];
           $names = ' ' . $fet['firstname']. ' '.$fet['lastname'];
           $_SESSION['quickName'] = ($fet['gender']=='Male')?'Mr'.$names:'Mrs'.$names;
           if ($fet['type']==='Admin') {
              header('location:./admin.php');
           }
           if ($fet['type']==='Normal-employee') {
              header('location:./user/user.php');
           }
        }
        else{
           session_destroy();
           $out="<b class='error'>Invalid username or password</b>";
```

```
        }
    }
    else{
        $out= "<b class='error'>Please fill all fields</b>";
    }
}
?>
<!DOCTYPE html>
<html >
  <head>

    <title>Login</title>
    <link rel="shortcut icon" type="image/png" href="images/a.png">
        <link rel="stylesheet" href="css/as.css">

  </head>
  <body>



<?php
if (isset($_SESSION['status'])  && $_SESSION['status'] == 1){
?>
<?php
    }
?>

    <div class="container">

  <div id="login-form">

    <h3>Payroll M.S</h3>
```

```
   <fieldset>


     <form action="" method="POST">


         <?php
   if (isset($_SESSION['msg'])) {
      echo $_SESSION['msg']."<br>";
      session_destroy();
   }
   ?>
      <input type="text" class="form-control" placeholder=" email or phone"
name="username"></br></br>
      <input type="password" class="form-control" placeholder="Password" name="password">
      <a href="includes/admin.php"><input type="submit" value="Login" name="login"></a>
      <footer class="clearfix">


      </footer>
      <?php
if (isset($out)) {
   echo $out;
}
?>
     </form>
   </fieldset>
  </div> <!-- end login-form -->
</div>


  </body>
</html>
```

LOGOUT

```
<?php
	session_start();
	unset($_SESSION['status']);
	unset($_SESSION['id']);
	unset($_SESSION['quickName']);
	unset($_SESSION['type']);
	session_destroy();
	header('location:../../');
?>
```