DESIGN AND IMPLEMENTATION OF A SIMPLE HUMAN RESOURCE MANAGEMENT SYSTEM SOFTWARE IN ANDROID STUDIO
(CASE STUDY: LIVING GATE CLASSIC SCHOOL)

BY

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BEING A RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT OF COMPUTER SCIENCE,
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CERTIFICATION

This is to certify that this research work was undertaken by ERHISOHWODE DANIEL OCHUKO, of the department of computer science, faculty of health science and technology, Hill-city University, was supervised and approved to have met the conditions necessary for the award of a bachelor of science (B.Sc.) degree in computer science.

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DEDICATION

This work is dedicated to the almighty God for his guidance, provision and protection and also my beloved parents for their unwavering support and advice, my siblings for their moral support and motivation, and also Mr. SHOLA KASUMU and Mr. AGHOGHO CHAMPION KPATEGHE for their continuous push during my mini projects which were very tough but due to it I gained a lot of knowledge that assisted me in this research, and also my department president for her consistency. May God bless all of you.

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I must express my thanks and gratitude to Almighty God for his guidance, provision and protection throughout my academic pursuit and for making this project a success, all glory be to God.

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My sincere appreciation goes to my Supervisor Mr. KPATEGHE Champion Aghogho who would no settle for mediocre work, but push me to endeavor for the best, he is one of the busiest men I know but creates time to answer my question, and I usually asked a lot of questions. Thank you, sir.

I must not forget to mention my DVC of academic and former HOD, Mr. SHOLA KASUMU, he was a strict and discipline man who never failed to correct what he saw as wrong behavior or work. Thank you, sir, for all the mini project sir for the knowledge I gain from completing them has helped me in an unexpected way, I thought it was punishment but sir I have realized that they have become the backbone of most of my endeavor.

I cannot forget my sisters who are more precious to me than a million brothers they have been an unforgettable help in rough times they have been my confidant and cheerleaders.

ABSTRACT

The Title of my project is called Human Resource Management System software in Android Studio for Living-Gate Classic Schools. The term “Human Resource Management System” has been around for a longtime although it has gone through changes but the core or basis of its existence is the same, some of its previous names where industrial welfare, Recruitment and selection, Acquisition of personnel Activities, Industrial Relations, Legislation Flexibility and diversity. Human Resource Management System is similar to nervous system of the body, as it connects and is concerned with every worker within the organization, it makes sure that they are working efficiently and maintaining their commitment to the organization. Human Resource Management System (HRMS) is a very important part of an organization need, this system provides software-based facilities for the staffs of the organization and also for the Administrators. Human Resource Management System (HRMS) offers a lot of advantages to an organization ranging from seamless communication, to easy access to useful information, etc. As different arms or department within the organization engages in different tasks, the software has a wide range of functionality to accommodate the needs of the organization, in terms of department goals, organizational goals and also its financial management (payroll management). Under this condition the Organization should have an integrated and centralized data and storage to facilitate the storage, management and representation of data. This project is centered around designing and automating a software-based system using android studio for management of both student and staff data in Living Gate Classic Schools (LGCS). This software comes with an inbuilt chat interface/platform with allows communication between staff who are connected to the established network with the organization. It can be considered a simple software with good functionality.

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CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

Human Resource management system has become a vital part of any organization since the 1920s when it emerged, it plays a vital role in the running of an organization. A Human Resource Management System is similar to nervous system of the body, as it connects and is concerned with every worker within the organization, it makes sure that they are working efficiently and maintaining their commitment to the organization. The Head/Authorities of the organization uses the system for better management of their staffs and organizational services. The HRMS system provides facilities for the staffs of the organization and also for the Administrators. As different arms or department within the organization engages in different tasks, the system has a wide range of functionality to accommodate the needs of the organization, in terms of department goals, organizational goals and also its financial management (payroll management). Under this condition the Organization should have an integrated and centralized data and storage to facilitate the storage, management and representation of data described that information system is formed by information itself. It means that the diversity and multiplicity of occurrence of information contributed to the need for them to be categorized. It deals with the obtaining, creating, overseeing, rousing and picking up the dedication of the association's distinct advantage of the individuals who work in and for it. The human resource management system is a system therefore it is a set of interrelated components that work together to achieve the desired results. The overall purpose of human resources is to ensure that the organization is able to achieve success through people. The management of the human capital of an organization and also the implementation of policies and processes are done by human resources professionals. They can specialize in finding, recruiting, training and developing employees, as well as maintaining employee relations or benefits. Training and development professionals ensure that the employees are trained and have continuous development. This is done through training programs, performance evaluations, and reward programs. Employees relations deals with the concerns of employees when policies are broken, such as cases involving harassment or discrimination. Managing employee benefit includes developing compensation structures, parental leave programs, discounts, and other

benefits for employees. On the other fields are human resources generalists or business partners. These professionals could work in all areas or be labour relations representative working with unionized employees.

The term human resource management is composed of three words “Human”, “Resource”, “Management”, Human refers to the skilled workforce in an organization, Resources refers to limited availability or scarce, while Management refers to how to optimize and make best use of such limited or scare Resources so as to meet the organization goals and objectives. Therefore, Human resources management is meant for proper utilization of available skilled workforce and also to make efficient use of existing human resources in the organization. According to Decenzo and Robbins, “Human Resources Management is concerned with the people dimension” in management. Since every organization is made up of people of different skills and specialization, acquiring their services, developing their skills, motivating them to higher levels of performance and ensuring that they continue to maintain their commitment to the organizational objectives. Human resources management according to Edwin Flippo is defined as “planning, organizing, directing, controlling of procurement, development, compensation, integration, maintenance and separation of human resources to the end that individual, organization and social objectives are achieved”.

Human Resources Management System Software are tools used to automate the Human resource management of a company. This software applications computerize and integrates several human resources management like recruitment, training, payroll, administration of benefits, performance appraisal and analysis, etc., into one robust package. Using the Human Resource management software companies can easily perform the key functions of the Human Resource management department, capture basic data about employees, manage employee’s data and generate valuable reports. The system covers the full spectrum of tasks associated with human resource departments, including simplifying financial transactions, managing organizational Hierarchy, it also encompasses payroll, Time and Attendance, performance, etc. Any organization can have the best employees by having an effective Human resources management department with the right people and software product to collect and manage information about organization’s human resources. But the current problem is recording, capturing and storage of data

of Living Gate Classic Schools, which still manually record, store and capture data by utilizing the resources of different applications such as paper or a program such as Microsoft Word of Microsoft Excel. This weakness resulted in data storage separation, uncentered and complicate the administration of the school employees in acquiring and managing information that requires a long time to present specific report. This weakness also increases the risk of data loss, either intentionally or unintentionally. With the implementation of data storage in DBMS (Database management systems) is expected to help the school to eliminate data redundancy and produce consistent data, and generate a centralized data repository and can be equipped with integrated security and data access. The purpose of this study is to analyze and understand the Human resource management that are taking place in the school to find weaknesses that would be the definition of the school needs, and designing a human resource management software that support the activities of the school.

1.2 Statement of the Problem

The problem definition for the software is to create a Human resource management software for Living-gate classic schools. The whole school process is carried out in a manual order. Since it's a manual system it has drawbacks such as time consumption, inefficient resources utilization. Some of the drawbacks of the current systems are:

1. Wasted clerical effort in searching for information.
2. Loss of valuable historical records through destruction or negligence.
3. Loss of important operating information.
4. An unmanageable tangle of papers within the office.
5. Extravagant use of high cost office space and equipment.
6. Difficulties in finding staffs and management information when needed.
7. A lot of time spent in collecting data about members and management.

1.3 Research Questions

Research questions That said, this research is poised to find empirical answers to the following research questions: **Research question 1 (RQ1)**: Does the HRIS-enabled HR practices significantly impact the HRM Performance?

Research question 2 (RQ2): Does the type of an organization significantly impact the HRIS-enabled HRM performance model?

Research question 3 (RQ3): Does the size of an organization significantly impact the HRIS-enabled HRM performance model?

1.4 Hypothesis

In order to find the answers to the three research questions mentioned above, a conceptual model was developed with strong theoretical background by incorporating the works informed by Lee et al. (2012) and Paauwe and Richardson (1997) to examine the following five hypotheses: Null Hypothesis 1 ($H1_o$): HRIS-enabled HR transactional practices do not significantly impact the HRM Performance. Alternative Hypothesis 1 (H1): HRIS-enabled HR transactional practices significantly impact the HRM Performance. Null Hypothesis 2 ($H2_o$): HRIS-enabled HR traditional practices do not significantly impact the HRM Performance. Alternative Hypothesis 2 (H2): HRIS-enabled HR traditional practices significantly impact the HRM Performance. Null Hypothesis 3 ($H3_o$): HRIS-enabled HR transformational practices do not significantly impact the HRM Performance. Alternative Hypothesis 3 (H3): HRIS-enabled HR transformational practices significantly impact the HRM Performance. Null Hypothesis 4 ($H4_o$): Organization type does not significantly impact the HRIS-enabled HRM performance model. Hypothesis 4 (H4): Organization type significantly impacts the HRIS-enabled HRM performance model. Null Hypothesis 5 ($H5_o$): Organization size does not significantly impact the HRIS-enabled HRM performance model. Hypothesis 5 (H5): Organization size significantly impacts the HRIS-enabled HRM performance model.

1.5 Aim and Objective of the study

The main objective of the proposed software is to overcome the drawbacks of the existing system. The prime benefits and the specific objective of the project are to:

1. Create a competent software with a database that provides the information on the availability details and the also provides staff details.
2. Develop and implementation of an attendance system for the staffs and management of the School.
3. Provide management chat interface for staff within the software to ease administration.
4. Ensure the software availability for the staff and management to ensure ease of access to important information

1.6 Significance of study

The proposed software is a computerized application. The system has a lot of functionality with would speed up administration. Some of them are:

1. The user can log into the software using his or her username and password to check on update or task from the management.
2. All data relevant to the staff and management are stored in the database. Which help the organization to get rid of the tedious job of manually searching for needed information.
3. It would provide a chat interface which will enable easy passing of information within the organization.

1.7 Scope and Limitation of the study

The “human resource management system” software is being developed as accurate and efficient software for the user such as the staff and also the administrator i.e. the management of a school. It would be the first of its kind. In the software, record of each staff is kept such as their name, qualifications, resumption date, performance, attendance, etc. the system is also made secured as all and any update can be done only by the authorized personnel i.e. the administrator.

The scope of the study was limited to the investigation into the information and record management at Living gate classic school in Lagos. However, while the school has a wide range of information to sort through due to their size and capacity, the study only focuses on their staff record and management from 2016 to early 2020 which was a trial to sort through due to time constraint. The participant where limited to the head mistress, director, the librarian and few other staffs.

1.8 The conceptual HRIS-enabled HRM performance model

By incorporating the works informed by Lee et al. (2012) and Paauwe and Richardson (1997), this research developed a conceptual HRIS-enabled HRM performance model that investigates the main constructs of this research. Figure 1.1 below depicts the big picture of the new conceptual model developed for this study

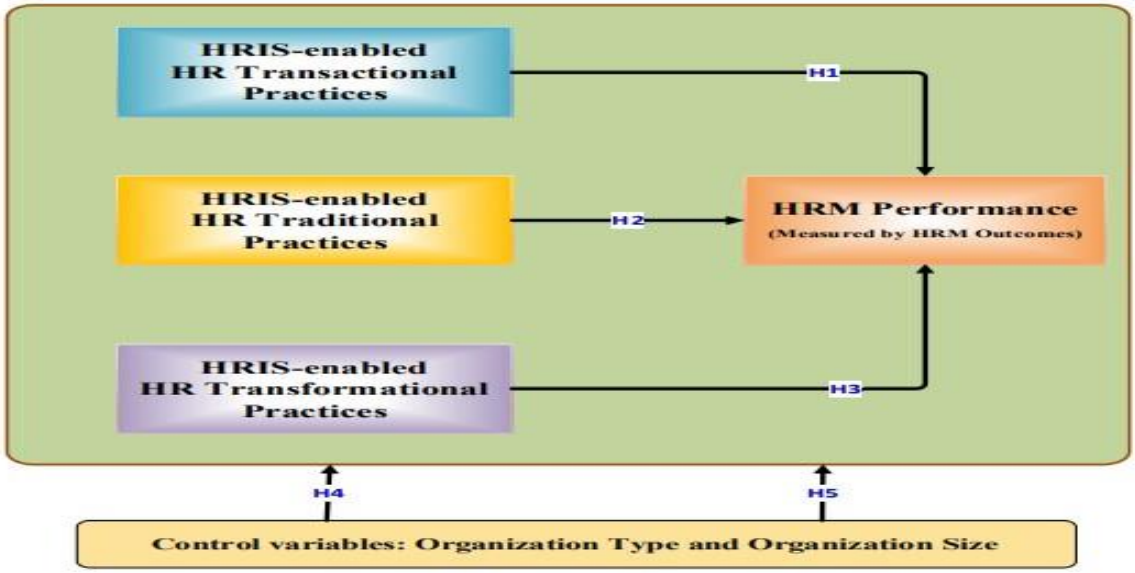


Figure 1.1 - Conceptual HRIS-enabled HRM Performance model

1.9 Research overview

By nature, this study is a quantitative research that comes under the relativist epistemological assumptions and therefore assumed the deductive theory approach. As mentioned earlier, since the focus of the research questions (i.e. 'HRIS-enabled HRM performance model' in view of business process management) , note that this research is a fairly new area of research that is not found in any existing literature, this author espoused the primary data collection method by employing a cross-sectional survey design. The target population in this research is human resources management professionals who have access to HRIS within their organizations in a Canadian context. S. Sritharakumar. The main focus of this research is to measure the relationship strength between HRIS-enabled HR practices and the HRM performance. Therefore, the following four variables were considered to measure the relationship between HRIS-enabled HR practices and the HRM performance (i.e. the variables of research question 1):

a) HRIS-enabled HR transactional practices,

b) HRIS-enabled HR traditional practices,

c) HRIS-enabled HR transformational practices, and

d) HRM performance measured by HR outcomes.

In addition, Paauwe and Richardson (1997) maintain organization age, size, type, technology, capital intensity, degree of unionization and industry as the contingency and control variables that may affect the HRM performance. Since this thesis is partially adopting Paauwe and Richardson's (1997) model, a survey questionnaire is designed to collect data on organization type and size, i.e. the two control variables of research questions 2 and 3 respectively. The survey questions were exclusively designed based on the 'category scales', i.e. the questions were both nominal and ordinal. While the screening question, the personal and organization information collection sections were unordered nominal category scale, the hypotheses testing questions were formed based on the Likert scale ordinal category scale. Data analysis of this research is based on two known approaches, namely, Kendall's tau-b correlation and ordinal logistic regression (OLR). Since Kendall's tau, unlike other correlation, has an intuitively simple interpretation that employs an algebraic structure, Noether (1981) suggests that Kendall's tau is one of the best approaches to measure the strength of the relationship. Since this study has a wide range of data distribution that tries to measure the strength of relationship between a HRIS-enabled HR practices and the HRM performance, this researcher has decided to adopt Kendall's tau-b correlation. Ordinal dependent variables that have natural ordering between their levels, such as Likert scale levels, can be predicted by one or more independent variables using OLR (Kleinbaum and Klein, 2002). In this study, ordinal logistic regression is used to predict the belief that the organization type and organization size impact the HRIS enabled HR practices, namely, transactional, traditional and transformational practices, and the HRM performance. This thesis is organized from the general to the specific.

1.6 Definition of Terms/Variables

School: is defined (**Wikipedia**) is an educational institution designed to provide learning spaces and learning environments for the teaching of students (or "pupils") under the direction of teachers. Most

countries have systems of formal education, which is sometimes compulsory. In these systems, students' progress through a series of schools. The names for these schools vary by country but generally include primary school for young children and secondary school for teenagers who have completed primary education. An institution where higher education is taught is commonly called a university college or university.

Human Resource Management: is concerned with the people dimension in management. Since every organization is made up of people, acquiring their services, developing their skills, motivating them to higher levels of performance and ensuring that they continue to maintain their commitment to the organization is essential to achieve organizational objectives. This is true regardless of the type of organization be it governmental, business, educational, health or social action (Decenzo **and Robbins**).

Human Resource Management software: these are tools used to automate the Human Resources process of an organization. These software applications computerize and integrate several human resource processes like recruitment, training, payroll, administration of benefits, etc., into one robust package. These are specialized software that assists organizations in the management of their human resource (**PAT research**).

School Record: these are records created by schools and educational bodies, they include books, documents, diskettes and files that contains information on what goes on in school as we as other relevant information pertaining to the growth and development of the school .

Record keeping system

This is a paper-based or electronic system that collects, organizes and categories records and facilitates their use, retrieval, disposition and preservation. Daniel and Walch (1984:38) define a record keeping system as "the process of creating and maintaining complete and accurate records in business activities".

IDE (Integrated Development Environment)

This a software application that provides comprehensive facilities to computer programmer.it is used to create software. An IDE can often support different languages. IDEs have a number of different tools and functions that assist a developer in the creation of software. Its primary functions are for writing codes, testing for errors and translating a program e.g. Sublime, NetBeans, Android Studio, Visual studio, visual basic, Notepad++, etc.

Android: is a mobile operating system based on a modified version of the Linux kernel and other open source software, designed primarily for touchscreen mobile devices such as smartphones and tablets. Android is developed by a consortium of developers known as the Open Handset Alliance and commercially sponsored by Google. It was unveiled in November 2007, with the first commercial Android device launched in September 2008.

Database

A database is a data structure that stores organized information. Most databases contain multiple tables, which may each include several different fields. For example, a company database may include tables for products, employees, and financial records. Each of these tables would have different fields that are relevant to the information stored in the table.

Database Update

A database update simply refers to the applying and maintaining of changes made into the database after data must have been added, removed or modified.

Java

Java is a class-based, object-oriented programming language that is designed to have as few implementation dependencies as possible. It is a general-purpose programming language intended to let application developers write once, run anywhere (WORA),[17] meaning that compiled Java code can run on all platforms that support Java without the need for recompilation.[18] Java applications are typically compiled to bytecode that can run on any Java virtual machine (JVM) regardless of the underlying computer architecture.

Android Emulator

An Android emulator is a software application that allows your mobile to imitate Android OS features into your PC. It allows you to install Android Apps on your computer or laptop and use them natively. It is mainly used for debugging purposes.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter reviews and provides synthesized literature relating to records and archives management. The chapter reviews not only records management frameworks and their importance to the study, but also empirical studies. The literature review themes which are derived from the study objectives include: records types and formats, records management systems, role of records and archives management, records management models and identified research gaps.

The literature reviews guide the research process in the selection of available documents both published and unpublished that are relevant to the study (Baban, 2009 and Jupp, 2006). The comprehensive reviews describe the history of the research topic, highlighting the key literature sources, illustrating major issues for refining further research questions and objectives. The literature reviews enabled the researcher to build on studies in previous scholars (Gray 2009; Saunders, Lewis & Thornhill, 2000). According to Jupp (2006), literature review is the process of reading, analyzing, evaluating and summarizing critical points of current knowledge on a research topic. Baban (2009) agrees that literature review is important in the selection of available documents both published and unpublished that are relevant to the area of study. The reviews of the literature guide the research process as follows:

1. It enables the researcher to eliminate re-inventing the wheel for every new research question,
2. It enables the researcher to formulate an opinion on the existing sources of evidence,
3. It clarifies the theoretical issues associated with the research questions, and
4. It gives the researcher the opportunity to build on other scholars' work.

2.2 Conceptualizing HR Systems

HRM can be defined as "the pattern of planned HR deployments and activities intended to enable an organization to achieve its goals" (Wright & McMahan, 1992: 298). Increasingly, the field has emphasized the importance of focusing on whether and how "systems" or "bundles" of HR practices jointly help organizations achieve strategic goals, rather than on single HR practices individually. An HR system can be

defined as a combination of HR practices "that are espoused to be internally consistent and reinforcing to achieve some overarching results" (Lepak et al., 2006: 221). Conceptually, these systems of HR practices—as a whole—are proposed to affect performance-related outcomes (Delery, 1998; Wright & Boswell, 2002). Existing evidence provides some first meta-analytic support, as HR systems tend to be more strongly related to performance than individual HR practices (Combs et al., 2006). However, how this joint effect occurs seems less clear. Conceptually, all practices in a system are proposed to promote an overarching goal (e.g., Jiang, Lepak, Han, et al., 2012); however, it is not always clear what the overarching goal is, how HR systems are conceptualized, or how practices contribute to this goal.

Multiple conceptualizations of HR systems exist, including high performance (e.g., Huselid, 1995), commitment (e.g., Arthur, 1994), and involvement (e.g., Guthrie, 2001). Some scholars use general labels such as HR system or HR bundle without indicating a dominant strategic focus, while others study targeted HR systems focused, for example, on customer service or teamwork (Jackson et al., 2014). Different levels can be distinguished within HR systems: HR policies represent an organization's stated intentions about HR practices that should be implemented, whereas HR practices reflect the actual HR activities (Becker & Gerhart, 1996; Wright & Boswell, 2002). Techniques are methods used within practices, such as assessment centers in selection. One can also structure HR systems by focusing on broader types or sub bundles of practices, such as those based on the ability-motivation-opportunity (AMO) model: ability-enhancing practices (e.g., selection, training), motivation-enhancing practices (e.g., performance management, rewards), and opportunity-enhancing practices (e.g., participation, job design; e.g., Jiang, Lepak, Ju, & Baer, 2012). The logic for this level of abstraction is that countless specific HR practices exist that at a broader policy level, form conceptually similar groupings of practices. Already over a decade ago authors lamented that a precise and consistent definition of HR systems was lacking and that the variability across HR systems in terms of the included practices was considerable (e.g., Lepak et al., 2006). Here we review whether this has changed over time. We examine how systems are labeled and which practices and sub bundles they contain to determine how HR systems that are labeled differently can be distinguished from each other and

to what extent HR systems that are labeled similarly indeed are similar in terms of the practices they include. Ambiguity regarding the conceptual boundaries of a construct hinders knowledge accumulation, as it may be unclear what we are speaking about when we examine or compare (specific) HR systems (cf. Podsakoff, MacKenzie, & Podsakoff, 2016).

The System Element of HR Systems

The core assumption underlying HR systems research is that the effectiveness of an HR practice depends on the other practices in the system (Delery, 1998). When practices fit into a coherent system (internal/horizontal fit), they reinforce one another and create synergies. When practices do not fit, they may detract from each other's effects. Thus, HR practices should be examined jointly rather than separately. Practices in a system can relate to one another in different ways. For example, an additive relationship assumes HR practices have independent effects and add up without influencing each other. In contrast, in an interactive relationship, the effectiveness of a practice depends on the presence or level of other practices. Practices may for instance be substitutes or show positive or negative synergies (e.g., Delery, 1998).

Assuming an additive relationship between practices typically implies calculating an HR system score by summing or averaging scores on individual practices into a scale score or index (Delery, 1998). This approach assumes that HRM is best viewed as a consistent system that has most impact if all practices send consistent signals about the organization's underlying intentions (Bowen & Ostroff, 2004). A suggested advantage of an additive index is that it allows for different ways (i.e., different combinations of practices) to achieve a high system score (e.g., Becker & Huselid, 1998). Yet many disagree with the use of additive indices, as these cannot capture the assumed synergies between practices, and advocate using methods that can capture these, such as cluster analysis or interactions (Becker & Gerhart, 1996; Chadwick, 2010). The few studies that compare different analytical techniques to test for synergies show that the different techniques yield different results and represent different underlying ideas about fit (Chadwick, 2010; Delery & Gupta, 2016). Overall, conceptual approaches to combining differ considerably, and disagreement exists on how to combine HR practices in a system. Knowing how the elements of an HR system interact is important in

order to study whether "systems" indeed affect intended outcomes. How much empirical attention different ways of combining practices have received over time is not clear; thus, we review this and analyze trends in the field over time.

According to Dublin (1976), theory is "the attempt…to model some aspect of the empirical world,". Theories, if accurate, fulfill the objectives of prediction (knowledge of the outcome) and understanding (knowledge of the process) regarding the relationships among the variables of interest. Thus, a good theory enables one to both predict what will happen given a set of values for certain variables, and to understand why this predicted value should result. The success in the explanations and predictions of any phenomena depends on the level that the theory holds and do not falter in fitting the situation, and the challenge is to perfect the process of matching the theory and facts (Cooper & Schindeler, 1998).

Different authors and scholars have developed human resource management theories such as Schuler and Jackson (2005), According to Schuler and Jackson, the study of HRM started in the United States in the mid-1970s as a response to the increasing professionalization of HRM by HRM specialists, and a growing recognition of the importance of human resources to companies' success. As a consequence, businesses in the United States began to view human resource professionals as partners "who should be involved in the strategic decision-making processes of the firm" (Schuler and Jackson 2005,12). The subject was encapsulated in two "founding" texts that appeared at the same time in the early 1980s (Kaufman 2015). These offered approaches developed in two of the leading University Management Schools in the United States: one by Beer et al. (1984), offering the "Harvard model," and one by Fombrun, Tichy, and Devanna (1984) offering the "Chicago model" of HRM. The "Harvard" map of the territory of HRM, as they termed it, took a wider perspective, giving a prominent role to stakeholder interests, long-term consequences, and "situational factors." Situational factors, or what we call context, were not a feature of the Fombrun et al. (1984) text. Instead, it was significantly tightly concentrated on the HRM chain within the firm as a means to promoting performance, and was prescriptive, recommending systematic use of strategically based selection, individual performance appraisal, individual performance-related rewards, and outcomes-monitored training and development. The approach is unitarist, in the sense that employers and employees are not viewed as having conflicting or divergent interests (Walton 1985) and other stakeholders' interests

are not relevant, so firms are, or should be, able to develop their HRM practices free of industrial relations or governmental pressures. As Sparrow and Hiltrop (1994, 7) phrased it, in terms of this HRM paradigm, human resources are “to be obtained cheaply, used sparingly, and developed and exploited as fully as possible in accordance with the demands determined by the overall business strategy.”

2.3 The History of Human Resource Management

The term "human resource management" has been commonly used for about the last ten to fifteen years. Prior to that, the field was generally known as "personnel administration." The name change is not merely cosmetics. Personnel administration, which emerged as a clearly defined field by the 1920s (at least in the US), was largely concerned the technical aspects of hiring, evaluating, training, and compensating employees and was very much of "staff" function in most organizations. The field did not normally focus on the relationship of disparate employment practices on overall organizational performance or on the systematic relationships among such practices. The field also lacked a unifying paradigm. HRM developed in response to the substantial increase in competitive pressures American business organizations began experiencing by the late 1970s as a result of such factors as globalization, deregulation, and rapid technological change. These pressures gave rise to an enhanced concern on the part of firms to engage in strategic planning--a process of anticipating future changes in the environment conditions (the nature as well as level of the market) and aligning the various components of the organization in such a way as to promote organizational effectiveness.

Human resource management (HRM), also called personnel management, consists of all the activities undertaken by an enterprise to ensure the effective utilization of employees toward the attainment of individual, group, and organizational goals. An organization's HRM function focuses on the people side of management. It consists of practices that help the organization to deal effectively with its people during the various phases of the employment cycle, including pre-hire, staffing, and post-hire. The pre-hire phase involves planning practices. The organization must decide what types of job openings will exist in the upcoming period and determine the necessary qualifications for performing these jobs. During the hire phase, the organization selects its

employees. Selection practices include recruiting applicants, assessing their qualifications, and ultimately selecting those who are deemed to be the most qualified. It's believed that the first personnel management department began at the National Cash Register Co. in the early 1900s, according to an HR Magazine article. After several strikes and employee lockouts, NCR leader John H. Patterson organized a personnel department to handle grievances, discharges, and safety, as well as training for supervisors on new laws and practices. In the post-hire phase, the organization develops HRM practices for effectively managing people once they have "come through the door." These practices are designed to maximize the performance and satisfaction levels of employees by providing them with the necessary knowledge and skills to perform their jobs and by creating conditions that will energize, direct, and facilitate employees' efforts toward meeting the organization's objectives. Human resource management has changed in name various times throughout history. The name change was mainly due to the change in social and economic activities throughout history.

- **Industrial Welfare**

  Industrial welfare was the first form of human resource management (HRM). In 1833 the factories act stated that there should be male factory inspectors. In 1878 legislation was passed to regulate the hours of work for children and women by having a 60-hour week. During this time trade unions started to be formed. In 1868 the 1st trade union conference was held. This was the start of collective bargaining. In 1913 the number of industrial welfare workers had grown so a conference organized by Seebohm Rowntree was held. The welfare workers association was formed later changed to Chartered Institute of Personnel and Development.

- **Recruitment and Selection**

  It all started when Mary Wood was asked to start engaging girls during the 1st world war. In the 1st world war personnel development increased due to government initiatives to encourage the best use of people. In 1916 it became compulsory to have a welfare worker in explosive factories and was encouraged in munitions factories. A lot of work was done in this field by the army forces. The armed forces focused on how to test abilities and IQ along with another research in human factors at work. In 1921 the national institute of psychologists established and published results

of studies on selection tests, interviewing techniques and training methods.

- **Acquisition of other Personnel Activities**

  During the 2nd world war the focus was on recruitment and selection and later on training; improving morale and motivation; discipline; health and safety; joint consultation and wage policies. This meant that a personnel department had to be established with trained staff.

- **Industrial Relations**

  Consultation between management and the workforce spread during the war. This meant that personnel departments became responsible for its organization and administration. Health and safety and the need for specialists became the focus. The need for specialists to deal with industrial relations was recognized so that the personnel manager became as spokesman for the organization when discussions where held with trade unions/shop stewards. In the 1970's industrial relations was very important. The heated climate during this period reinforced the importance of a specialist role in industrial relations negotiation. The personnel manager had the authority to negotiate deals about pay and other collective issues.

- **Legislation**

  In the 1970's employment legislation increased and the personnel function took the role of the specialist advisor ensuring that managers do not violate the law and that cases did not end up in industrial tribunals.

- **Flexibility and Diversity**

  In the 1990's a major trend emerged where employers were seeking increasing flexible arrangements in the hours worked by employees due to an increase in number of part-time and temporary contracts and the invention of distance working. The workforce and patterns of work are becoming diverse in which traditional recruitment practices are useless. In the year 2000, growth in the use of internet meant a move to a 24/7 society. This created new jobs in e-commerce while jobs were lost in traditional areas like shops. This meant an increased potential for employees to work from home. Organizations need to think strategically about the issues these developments raise. HRM managers role will change as changes occur.

Information Technology Some systems where IT helps HRM are: Systems for e-recruitment; On-line short-listing of applicants; Developing training strategies on-line; Psychometric training; Payroll systems; Employment data; Recruitment administration; References; Pre-employment checks. IT helps HR managers offload routine tasks which will give them more time in solving complex tasks. IT also ensures that a greater amount of information is available to make decisions.

2.4 The History of Human Resource Management Software

The 1970s marked the beginning of digitized human capital management, as this was the period when companies understood that automating cumbersome processes can cut both time and expenses. At the time, however, technology was limited to mainframe computers that allowed only the performance of basic payroll-related tasks, and extracting simple reports that relied predominantly on manual entries. Despite of it, the HR software idea was developing with full steam, and many technology producers were looking for a way to simplify the governance of large and decentralized teams.

The big breakthrough took place nine years later, when SAP launched its R/2 resource management system (later to be replaced with R/3), being the first modern ERP software designed for business use. For the first time, users could combine important corporate data in a single mainframe environment, and track performance in real time. This was only the beginning of a huge wave of modern ERP systems, where HR was rather an 'extra functionality' than a standalone service. HR software as such emerged in 1987, when Oracle introduced the first client-server based human capital management system called PeopleSoft. The application was in fact the first HR-centered system to be available on the market, and soon became the trademark of this famous software provider. Nowadays, PeopleSoft is still active and available for purchase by both small companies and enterprises. Together with it, Oracle designed a large number of BPM and financial management apps that excluded the need for some companies to use third-party systems to manage their workflow.

Meanwhile, the trend of designing combined ERP-HR tools continued, and the number of payroll apps that handle HR tasks, recruiting, and learning was only becoming bigger. By the beginning of the 1990s, Oracle launched many of these locally-hosted products, preserving its leadership position in the HR software environment up to date. Today PeopleSoft is still used, although many companies moved to more modern SaaS solutions.

2.4.1 The advantages of cloud-hosted HR management

As popular and beneficial as it was, HR functionality was still unavailable for most businesses, because popular systems were predominantly hosted on local devices, and required expensive hardware and professional installations. The late 1990s, however, put an end to the myth of HR software being designed for big players. Functionality shifted to cloud, which not only secured data better than before, but provided a number of benefits, and made automation accessible for small teams with limited budgets. The client-server technology was already a part of the past, and the list of HR buyers was growing rapidly.

2.4.2 Specialized and best-of-breed systems

With HR design being the hottest trend in software development, providers continued looking for a competitive edge that would distinguish their products from Oracle's and other companies' great inventions, and found the answer in producing systems that perform a specific type of tasks. In the early 2000s, it seemed that the one-size-fits-all ERP formula is no longer attractive to buyers, and the strategy shifted towards specialized systems that handled recruiting, training, evaluation, and similar concepts. Best of breed products were apparently more interesting to companies than full ERP suites, and cost significantly less due the fact they were hosted in cloud.

2.4.3 Going mobile

From 2014 on, it is quite rare to find an HR system that can't be operated from a mobile device. The cloud-hosting milestone makes it easy for users to access information wherever they are, but what really makes a difference when purchasing an HR system is whether it offers a special mobile

application or not. Most popular providers offer Android and iOS apps to keep even the largest and most decentralized teams on the same page with what is happening in the company. From the manager's perspective, this means that field performance can be tracked painlessly even when agents are operating on another continent.

2.5 The Impact of Technology on Human Resource Management

Modern technology has introduced groundbreaking shifts and innovations to HR solution finding, and, as fresh approaches surge to the surface, our own way of working and handling "Human Resource Management" issues witnesses a fundamental reshaping unlike anything before. These technologies change the way Human Resource contacts or finds employees, evaluates them, acquires and store files, and puts the candidates under the scope for assessment. If used properly, the new HR technology can change the face of "Human Resource Management" in the right way and excel in its practices. On the contrary, if misused, it can turn into a disaster and severely damage the management methods and put barriers in the way of Human Resource. According to the 2019 HCM Trends report, a sizeable HR technology venture capital was dedicated to the Human Resource sector. Topping $3.1 billion, more than the triple of the amount invested in the year 2017, shows promising growth in this field. With all the cash flow souring down to the ATS and HRM technologies, let's look at the positive outcomes it would have in the ways everyone percept HR. Human resource management is evolving into a more technology-based profession. In many organizations, employees now see the face of HR as a portal rather than a person. This transformation of HR service delivery is known as "e-HR," and implementing e-HR requires a fundamental change in the way HR professionals view their roles.

Today the face of HR is often a portal, rather than a person. Almost all firms now provide universal access to HR services through technology and web-based applications, dramatically changing the practice of human resource management. These changes often result from the need to cut costs and expand or improve services. Recent research shows organizations that successfully adopt sophisticated HR technology tools outperform those that do not. But because most organizations

already have automated basic HR administration, the simple automation of HR processes can no longer assure a competitive advantage. Instead, organizations must determine how to use technology to transform their HR practices and market their HR brand. HR is evolving into a more technology-based profession because organizations need to:

- Streamline HR processes and reduce administrative burdens.
- Reduce HR administration and compliance costs.
- Compete more effectively for global talent.
- Improve service and access to data for employees and managers.
- Provide real-time metrics to allow decision-makers to spot trends and manage the workforce more effectively.
- Enable HR to transform so it can play a more strategic role in the business.

The term “e-HR” describes the transformation of HR service delivery using web-based technology. Implementing e-HR requires a fundamental change in the way HR professionals view their roles. Now HR professionals must not only master traditional HR skills and knowledge, but also have the ability to apply that knowledge via technology. This report focuses on human resource information systems (HRIS), or the integration of hardware, software and business processes used to implement an e-HR approach.

HR departments often provide broader and more effective services when they operate via a web portal. For employees and Transforming HR Through Technology applicants, this means relying on HRIS for most HR services. One potential downside to this approach is that personal relationships between the organization’s employees and HR staff may disappear. An HRIS can be as simple as a small employee database, developed internally by a company with a few employees, or as complex as fully integrated, multimillion-dollar Enterprise Resource Planning (ERP) software that offers economies of scale to large firms. There also are many variations in between.

2.6 Human resource management information systems types:

Operational human resources management system (HRMS) provides the manager with data to support routine and repetitive human resource decisions. Several operational-level information systems collect and report human resource data. These systems include information about the organization's positions and employees.

- **Employee information systems**

The human resource department must maintain information on each of the organization's employees for a variety of decision and reporting purposes. One part of this employee information system is a set of human resource profile records. An employee profile usually contains personal and organization-related information, such as name, address, sex, minority status, marital status, citizenship, years of service or seniority data, education and training, previous experience, employment history within the organization, salary rate, salary or wage grade, and retirement and health plan choices.

- **Position control systems**

A job is usually defined as a group of identical positions. Every position consists of tasks performed by one worker. The purpose of the position control system is to identify each position in the organization, the job title within which the position is classified, and the employee currently assigned to the position.

- **Applicant selection and placement information systems**

After jobs and the employee requirements for those jobs have been identified and after a suitable pool of job candidates has been recruited, the candidates must be screened, evaluated, selected, and placed in the positions that are open. The primary purpose of the applicant selection and placement information system is to assist human resource staff in these tasks. Reference to the position control system allows a human resource manager to identify the details about unfilled positions.

2.6.1 Examples of human resources management system

BambooHR

BambooHR Demo

- **BambooHR**

BambooHR is an online human resources (HR) software service for small and mid-sized businesses which offers a single system to consolidate all employee and human resources related data, manages a number of human resources activity. BambooHR can be used to build a centralized database of employee profiles that can be accessed by anyone in the company with the access permissions they define where each profile can store personal information and a photo, as well as details on benefits, salary, time off, documents and training where the users can also add custom fields to record important information unique to their company.

Overview Features

- Applicant Tracking System (ATS)
- Employee Self-Onboarding
- Time-Off Tracking
- Employee Database and Records
- Performance Management Software
- HR Reporting
- Custom Workflows
- Electronic Signatures
- Bamboo Payroll
- Applicant Tracking System (ATS)
- Employee Self-Onboarding
- Time-Off Tracking

What are the benefits?

- Save time, money, and trees with esignatures

•Makes it easy to create detailed reports on almost any data in the system.

•Create custom workflows to be more efficient in your decision-making processes.

- **CakeHR**

CakeHR is a complete HR solution that solves modern HR challenges. CakeHR handles requests and approvals digitally, then tracks them in shared calendars & reports. Keep everyone in the loop by using a shared company calendar. Multiple users can access the same calendar data from any device to schedule their team meetings, manage project and resource planning. Ideal application for offices who rely on a shared calendar. Every employee can access their account to see their balances, request time off, see who is away & quickly access important company information. Control who approves time off requests or even set up replacement:

Overview Features

• Timesheets: A fast, easy way for employees to track overtime

• Leave management: Handle time off approvals digitally

• Shift scheduling: Flexible & functional shift planning module

• Expenses: Submit & manage company expenses from mobile app

• Full employee, manager and HR self-service: roles-based security and robust online access 24/7 for everyone

• Single sign-on in addition to CakeHR''s own secure password capabilities

- **OpenHR-Advanced Business Solutions**

OpenHR - Advanced Business Solutions: Advanced Business Solutions is a leading provider of integrated business applications and services for the public, private and third sectors. Advanced Business Solutions software is flexible, scalable and built on the latest proven network technologies. And everything we design is simple to integrate with other systems – whether those from Advanced Business Solutions, or from other providers so

there's no need to rip and replace. OpenHR gives the HR department the tools it needs to manage workforce effectively and efficiently. It covers all aspects of HR, including talent management and workforce optimization processes such:

Overview Features

• Human resources

• Payroll

• Talent Management

- **Other examples:**

ADP Vantage HCM, SAP SuccessFactors, Adrenalin HRMS, OpenHR-Advanced Business Solutions, iTrent HR, SutiHR, Workday HCM, ADP Workforce Now, Kronos Workforce Ready, Aragon eHR, Deltek Maconomy, Vibe HCM, Infor Human Capital Management, High Line Human Resources, Ramco HCM, Microsoft Dynamics AX HR, CGI Advantage Human Resource, Talentia HCM, Unit4 Business World, SAP ERP CAORE HR, Microsoft Dynamics GP HR, ActionHRM, Epicor HCM, FinancialForce HCM, People-Trak, Datis.

Advantages of Human Resource Management System

- Improved recruiting efficiency and reduce costs.
- Easy management of data.
- Quick access to Human resource information.
- Increase in applicant convenience.

2.7 Proposed system

Decision in assigning proper skillful hands for the project is an important issue in human resource management system module. The human resource management system administrator should report with the personal holding the necessary skills required for the project assignment. The decision in making analysis about the employee's skills is a prime important before booting in.

The proposed system of HR module is the right software to be incorporated into the automation of human resource management system for helping the organization needs with respect to skillful human resource. The proposed system provides detail general information about the employee along with educational, certification, skill and project details.

It enhances the human resource management in adding, viewing and updating employees' details and generates various reports regarding employee's skill and experience.

- **What the proposed system will contain?**

The software-based HRMS for will be proposed to increase the performance and organization of the entire range of human resources management services by developing these sections:

1 Login and Sign up Portal.

2.chat Interface.

3.staff information.

4 Salary.

5 Attendance.

2.8 Advantages of Human resource management Software

Arguably, every single business or organization is made of people and HRM is all about acquiring the services of people, developing and polishing employees' skills, and managing their activities to the foremost level in order to understand their commitment towards the organization. An efficiently designed Human Resource department can facilitate organizations with the structure and the ability to meet business needs by managing the company's valuable resources i.e. employees. HRM software has a number of functions to assist the organizations with effective & efficient workflow:

- **Data Management**

Once you have HRM software, you will not need to struggle with the spreadsheets and documents; instead, you will be able to manage your employee's data in one place. The software will allow you to create a centralized employee database that can be easily accessible by the HR department to retrieve the information any time for the various purposes.

- **Leave Management & Record**

You can configure and set leave policies within HRM software; the solution is completely customizable as per individual company's norms. However, there is no complication of creating leave rules and managing leave balance on excel sheets and comparing it with attendance sheet at the end of every month. In this way, you can save much time that usually gets wasted in tracking paper-based leave applications. All the tasks can be done in a hustle free manner when you start using HRM software.

- **Time & Attendance Record**

HRM software helps businesses to manage time, create shift roaster manually, and monitor real-time attendance on a daily basis. It's a fact that manual attendance processing lacks tracking of employees presents\absents and also makes it difficult to keep a tab on their actual working hours. However, HR Management Software provides a platform to update attendance on a daily basis without putting time and efforts.

- **Organization Hierarchy**

Organization hierarchy represents the structure of an organization, which is based on employee reporting flow that is formed inevitably. Using the HRM Solution, all reporting managers can access the hierarchy of their team only. Whereas, the authorized can only view their seniors up to the level if it is defined by the HR.

- **Payroll Management**

An easy and useful mechanism of HRM Software is to manage payroll without wasting hours. It is very flexible and user-friendly solution that is designed to satisfy all payroll needs of an organization. Not only current salaries of employees, but the software also deals with salary increments after approval of all these activities.

- **Taxation computation & Investment Record**

To calculate income tax based on the latest standards & investment declaration by employees is one of the much difficult tasks to deal with. TDS calculation with a large number of sub-clauses and clauses must be completed

accurately. And HRM software handles all these complexities efficiently, you will only be required doing little changes & monitoring every month during payroll processing. It eases the trouble of your HR department & let your organization save hectic working hours on this process.

2.9 The Importance of Database Management Systems

The use of a computer database is typically involved in efficient data management. A shared, integrated computer structure, a database stores the following:

- End-user data i.e. raw data relevant to the end user
- Metadata—the data about data, through which end-user data is integrated and managed

metadata describes the characteristics of the data and the set of relationships linking the data present within the database. So, what is the role of a DBMS in all this? We discuss that next.

A DBMS plays a crucial role in both the creation and management of data. Without a database management system, running and managing data effectively is not possible. Serving as the intermediary between the user and the database, a DBMS provides users access to files stored in a database. It provides the end user with a single, integrated view of the data, and translates all applications it receives into complex operations that fulfil those requests. However, much of the internal complexity of the database is hidden from the users and application programs.

From enabling the sharing of data in the database among multiple applications or users to providing users with a single all-encompassing data repository, DBMS plays an important role in information systems. Following are some of the things a DBMS enables in information systems:

- **Better Data Access Within the Company**

With a DBMS, users within a company can access, update and delete data in a database or information system. This information is easily available to users when the company's information systems are integrated with the relational DBMS.

- **Stronger Relationships Between Data**

A key function of database management systems is allowing different data sets to relate to one another. This makes a DBMS ideal for managing relationships between data sets in a systematic and simple way. This, in turn, allows managers to understand key statistics related to business operations and sales.

- **Improved Data Security**

The more people access the data, the greater the risk of data security breaches. Generally, companies invest considerable time, effort and money to ensure proper use of their data. But this does not always produce the desired outcomes. With a DBMS, organizations can ensure better enforcement of data privacy and security policies, which allows them to improve overall data security.

CHAPTER THREE

METHODOLOGY AND SYSTEM ANALYSIS

3.1 Methodology

This research was a Qualitative Research, which is expressed in words. This research method uses concepts, thoughts or experiences which enables the gathering of in-depth insight on topics. Common qualitative method includes interviews with open-ended questions, observations described in word, and literature review that explore concept and theories.

3.1.1 Qualitative Research

Qualitative research which relies on obtaining data by the researcher from first-hand observation, interviews, questionnaires, focus groups, participant-observation, recordings made in natural settings, documents, and artifacts. After obtaining of data, the data is analyzed by summarizing, categorizing and interpretation

3.1.2 Method used in collection of data

The collection of data was done using interviews, Ethnography, Literature review;

- Interview: this involves the researcher asking questions verbally to respondents.
- Ethnography: this involves the participating in a community or organization of a period of time to closely observe culture and behavior.
- Literature review: survey of published works by various author.

3.2 Analysis of the Existing System

The existing system of Human resource management is strictly manual and paper based, as a result of this manual system exists will challenges to overall output and efficiency. These challenges are numerous, they include data management (storage of data, collection of data, analysis of data) which could be demanding and tiring and also a high risk of human error. This challenges though few go a long way in hampering the productivity, accuracy and efficiency of the system. In this system, human resource management is carried out through the use of document. Documents have to be retrieved and recorded from different departments within the organization, this process can be strenuous at times, for instance, to get information on a particular employee, various documents have to searched.

3.2.1 Advantages of Existing System

1. It creates employment as manpower would be needed to carry out various recording and analysis within an organization.

3.2.2 Disadvantages of the Existing System

1. High risk of human error.
2. The process of managing human resources would be slow thereby reducing productivity.
3. Lack of enough storage as this system require a very large space for storage.
4. Locating information within the storage would be slow and tiring.
5. It is not efficient.
6. It is time consuming.

3.3 Analysis of the Proposed System

The proposed system is centered on developing a Mobile software(app) that would enable the management of human resource of Living gate Classic Schools. The Mobile software would have a seamless display and capability to run on 95% of android devices, it would also contain a login in interface and also a signup interface in order to ensure security and deny access to persons who are not allowed to. The system would be able to store staff records and also classes and its student information.

Furthermore, it would provide the staff ability to record it student attendance which is very handy and easy compared to the old system. The new system also contains a chat interface which will allow the staff to communicated with other connected staffs for official purpose within the organization.

3.3.1 **Advantage of the Proposed System**

1. The process reduces use of man power
2. It is more secure that previous systems.
3. It minimizes human errors.
4. It speeds up the process of human resource management.

3.4 Research Methodology

methodology is a body of methods, rules, and postulates employed by a discipline, a particular

procedure or set of rules, methodology is also the analysis of the principles or procedures of inquiry in a particular field, it is also body of practices, procedures, and rules used by those who work in a discipline or engage in an inquiry; a set of working methods. Research methodology is the specific procedures or techniques used to identify, select, process, and analyze information about a topic. In a research paper, the methodology section allows the reader to critically evaluate a study's overall validity and reliability.

3.4.1 Data Collection Method

Data collection is a process of collecting information from all the relevant sources to find answers to the research problem, test the hypothesis and evaluate the outcomes. Data collection methods can be divided into two categories: secondary methods of data collection and primary methods of data collection.

- **Secondary Data Collection Methods**

Secondary data is a type of data that has already been published in books, newspapers, magazines, journals, online portals etc. There is an abundance of data available in these sources about your research area in business studies, almost regardless of the nature of the research area. Therefore, application of appropriate set of criteria to select secondary data to be used in the study plays an important role in terms of increasing the levels of reliability. These criteria include, but not limited to date of publication, credential of the author, reliability of the source, quality of discussions, depth of analyses, the extent of contribution of the text to the development of the research area etc.

- **Primary Data Collection Methods**

Primary data collection methods can be divided into two groups: quantitative and qualitative.

  - Quantitative data collection methods are based in mathematical calculations in various formats. Methods of quantitative data collection and analysis include questionnaires with closed-ended questions, methods of correlation and regression, mean, mode and median and others.

- Quantitative methods are cheaper to apply and they can be applied within shorter duration of time compared to qualitative methods. Moreover, due to a high level of standardization of quantitative methods, it is easy to make comparisons of findings.

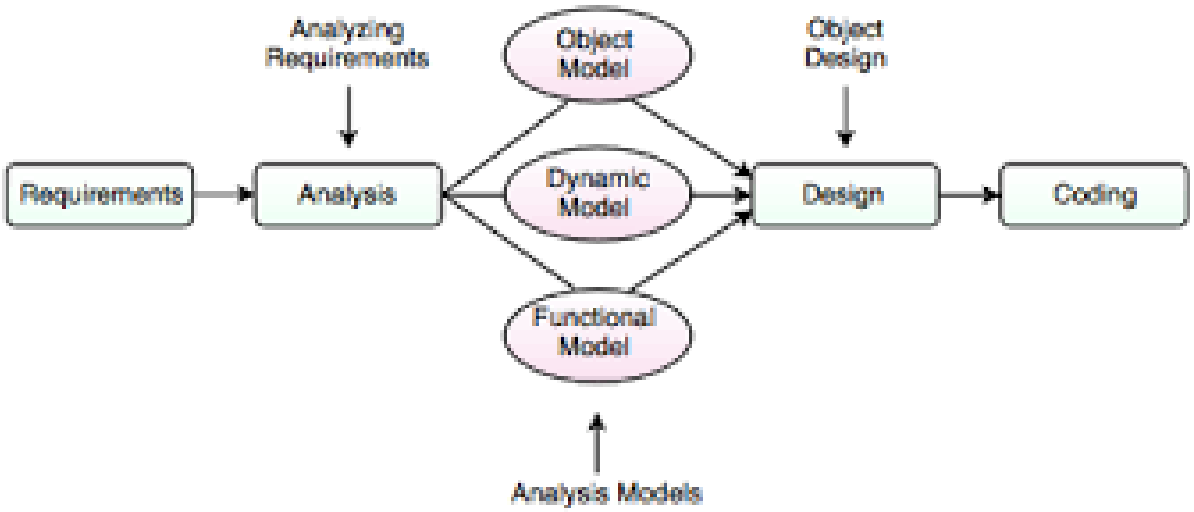
3.4.2 Adopted Research Methodology

This methodology is largely dependent on some factors such as:

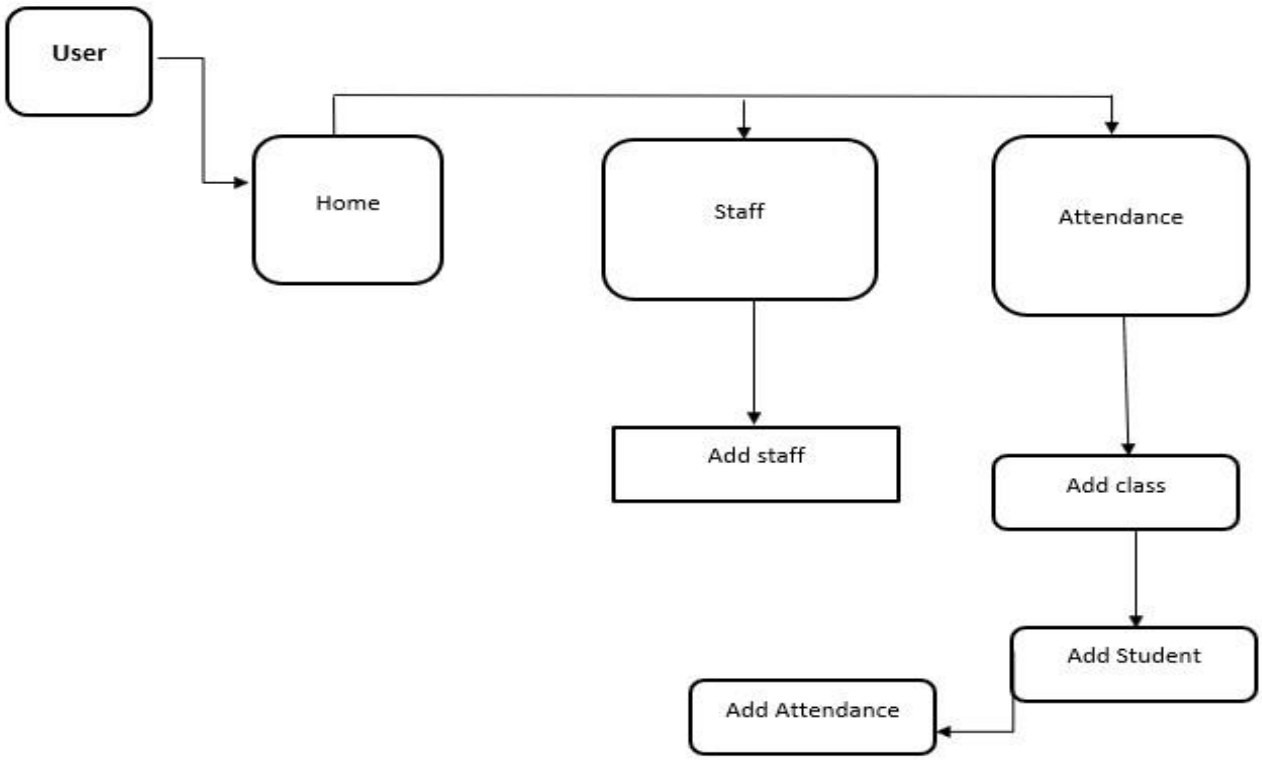
- The software development
- The software uses
- The design modules
- The budget
- Time schedule

In order to maintain a reasonable acceptance of this research, I made use of the accepted software engineering model which is Object Oriented Design Methodology (OOADM). Object-oriented analysis and design methodology (OOADM) is a technical approach for analyzing and designing an application, system, or business by applying object-oriented programming, as well as using visual modeling throughout the software development process to guide stakeholder communication and product quality. It is a new system development approach, encouraging and facilitating re-use of software components. It employs international standard Unified Modeling Language (UML) from the Object Management Group (OMG). Using this methodology, a system can be developed on a component basis, which enables the effective re-use of existing components, it facilitates the sharing of its other system components.

3.4.2.1 Figure 1: Object Oriented Analysis and Design Model



3.4.2.2 Figure 2: Data Flow Diagram



3.5 Justification for the New System

The implementation of the proposed system is worth embarking on because of the following reasons:

1. The system will be less susceptible to human error.
2. The system will enable direct communication between workers without leaving their station through the chat interface.
3. The process of recording attendance will be fast.

CHAPTER FOUR
SYSTEM DESIGN AND IMPLEMENTATION

4.1 Objectives of the New System

The objectives of the new system are:

1. To develop an application that would enable management of human resources.
2. To have an inbuilt database that would hold all the data irrespective of the size.
3. To develop a system that would enable simple chat medium between staffs in the organization.

4.2 Decomposition & Conversion of the Model

A decomposition paradigm in computer programming is a strategy for organizing a program as a number of parts, and it usually implies a specific way to organize a program text. Usually the aim of using a decomposition paradigm is to optimize some metric related to program complexity, for example the modularity of the program or its maintainability. Decomposition saves a lot of time: the code for a complex program could run to many lines of code. If a mistake was made it would take a very long time to find. Decomposition is a useful problem-solving strategy.

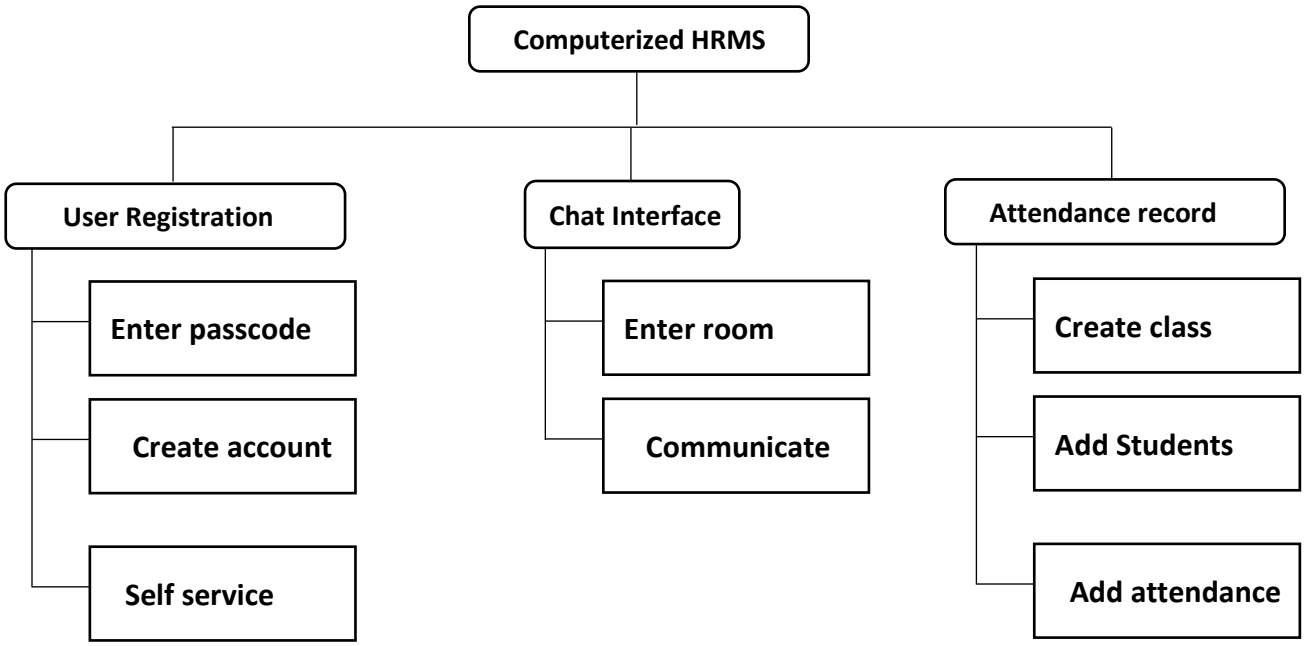
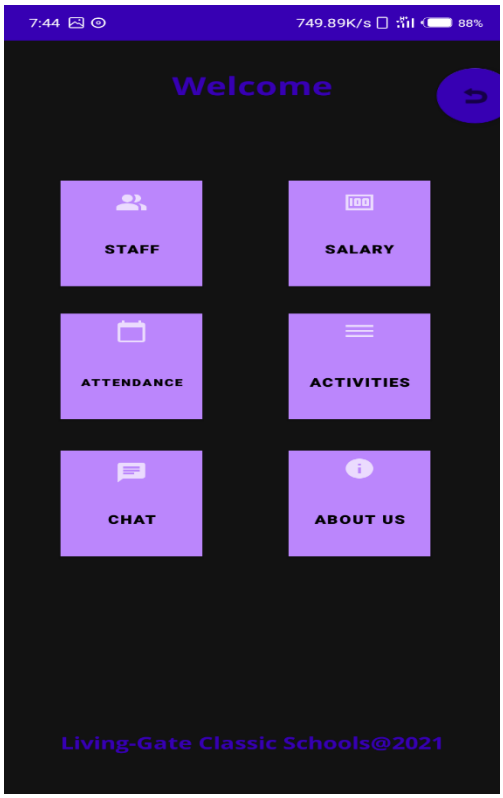


Figure 3: Decomposition Diagram of Proposed System

It can help you write a complex computer program, plan a holiday or make a model plane. Think of a mobile phone. Mobile phones are made up of lots of different parts. Companies who make phones might make a list of everything they need and decompose the manufacturing process so that one factory can be making the screens while another makes batteries and another makes the phone case.

4.2.1 Login



4.2.2 Sub-Menu System

The three major sub system that were used in the software to achieve the proposed system are:

1. Login and Signup Sub-systems

The Login and Signup Sub-systems Hrms software is set up so as to ensure proper security measure against restricted entry, the Sign up contains a passcode that is need by the new user before they can register successfully in order to access the software.

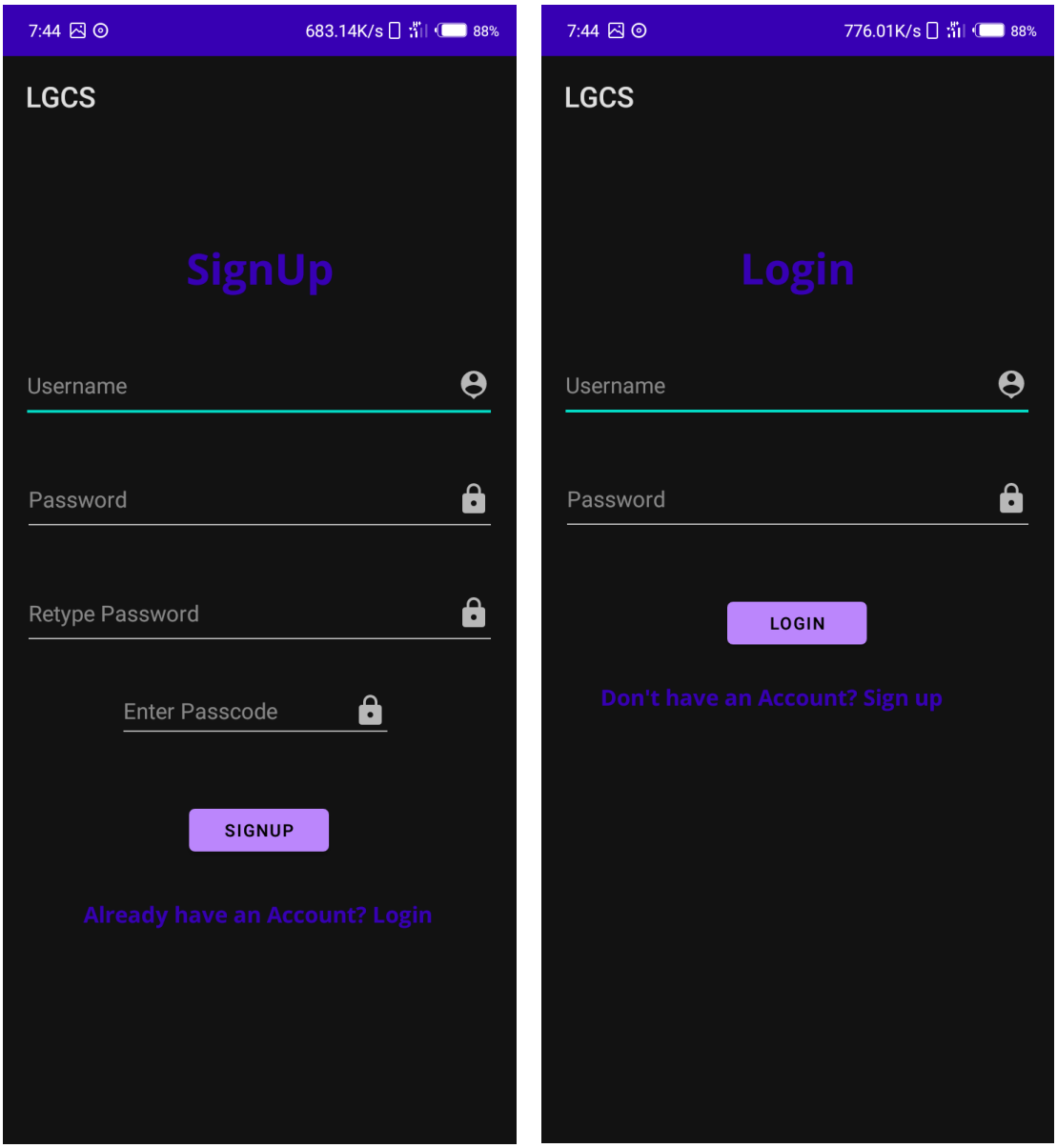
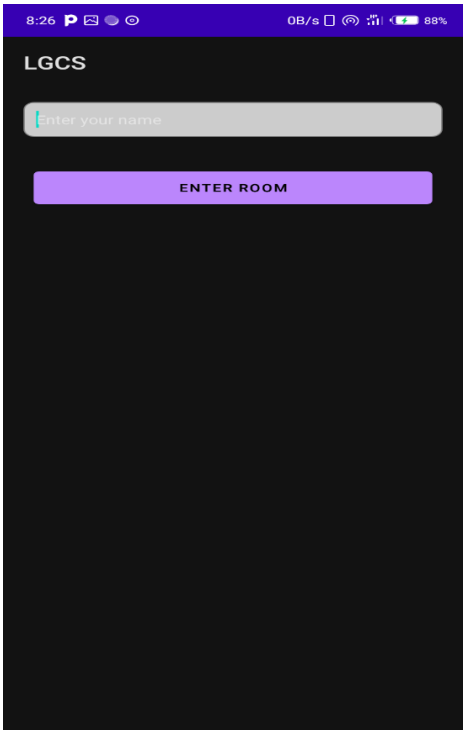
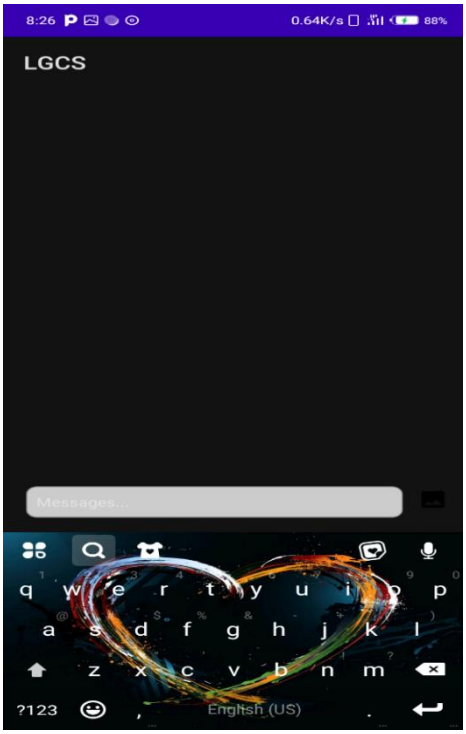


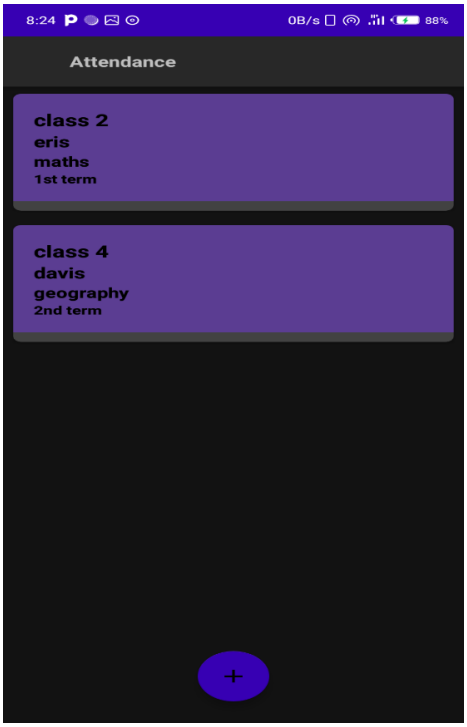
Figure 5: Login and Signup Sub-systems

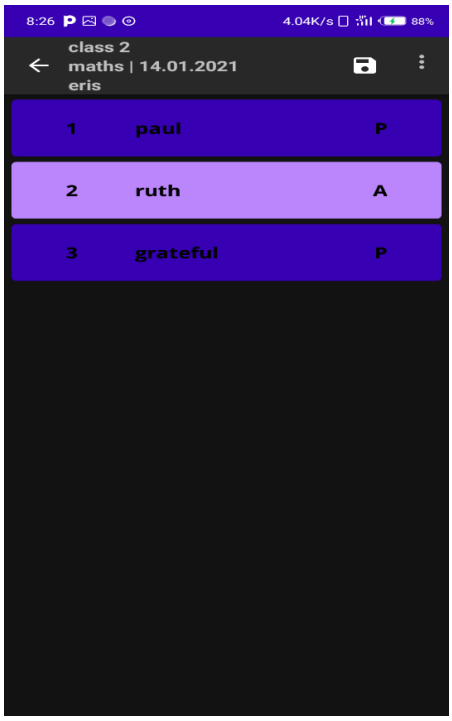
2. Chat menu





3. Attendance menu





4.3 Specifications

This section would cover the Development tools, Database Design and Structure, input and output Format and the General Overview of the New System.

4.3.1 Database Development Tools

The Database development tools used for this project is an android studio inbuilt tool which is SQLite Database. SQLite is an open SQL Database that stores data to a text file on a device. Android comes in with built in SQLite database implement.

4.3.2 Database Design & Structure

Table 1: Staff Database Structure

Field Name	Field Type
Id	Int
Name	Text
Position	Text
Email	Text
DOB	Text
Qualification	Text

Table 2: Class Database Structure

Field Name	Field Type
C_ID	Int
CLASS_NAME	Text
SUBJECT_NAME	Text
CLASS_TEACHER	Text
CLASS_TERM	Text

Table 2: Student Database Structure

Field Name	Field Type
_SID	Int
C_ID	Int
ROLL	Int
STUDENT_NAME	Text

4.3.3 Input and Output format

Input Format

At this stage, the information collected in the input menu is store into the database and is show in the recycle view using the cursor called method.

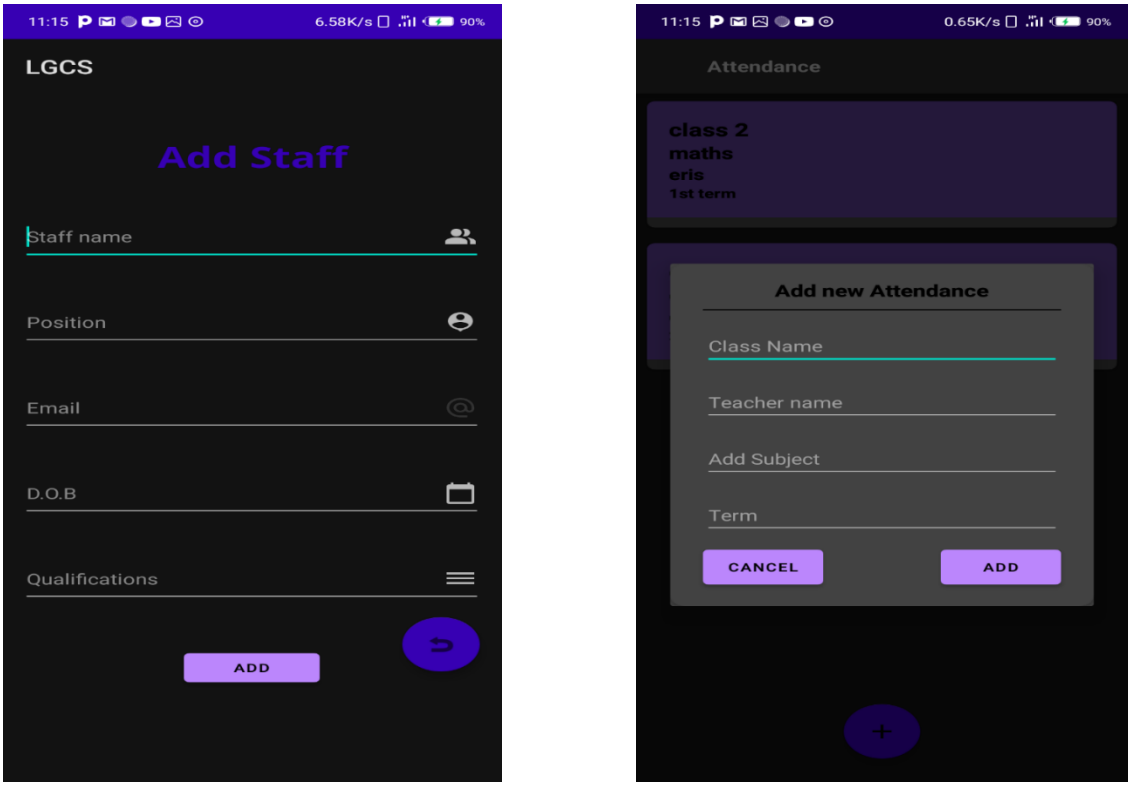


Figure 7: Input Format

Output Format

The output is displayed on the RecycleView, the data is gotten from the database table where the inputted data is stored

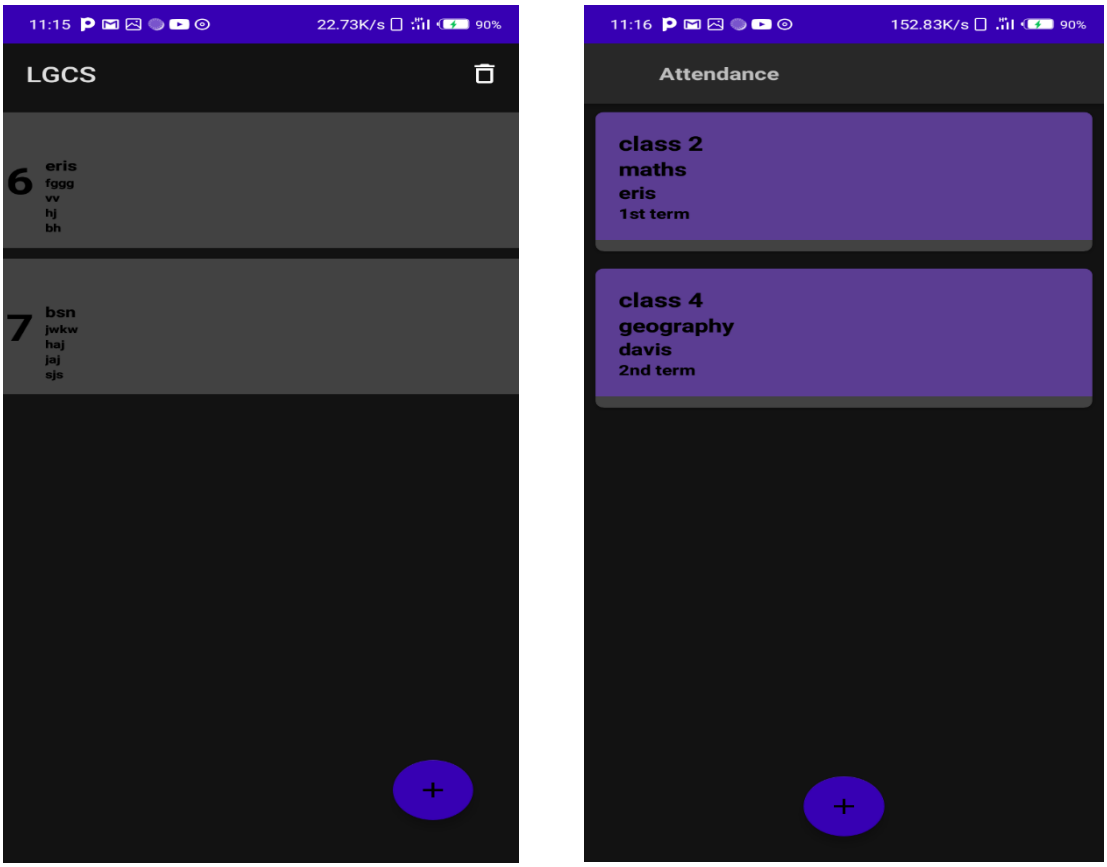


Figure 8: Output Format

4.3.4 Overall Object Diagram (Flowchart) of the New System

A flowchart is diagrammatic representation of a process. Instruction given to the compute is usually broken down into sequence of steps and executed one at a time. Flowcharts are very important as they aid in computer programming logic. It mostly helps the programmer learn how to design program logic by using pictorial representation.

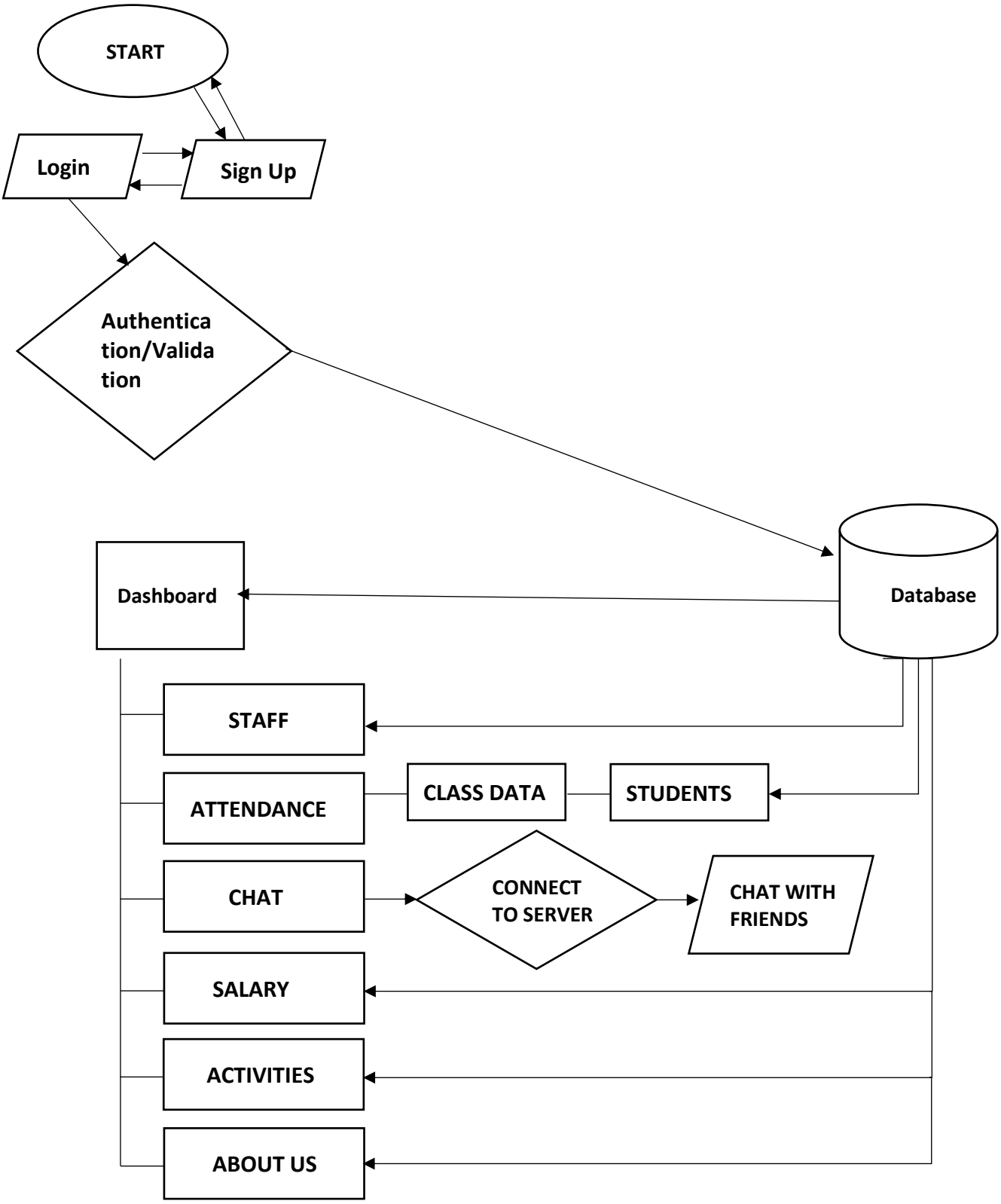


Figure 9: Overall Object Diagram

4.3.5 Algorithm

An algorithm is a set of instructions designed to perform a specific task. In computer programming, algorithms are often created as functions. These functions serve as small programs that can be referenced by a larger program. For example, an image viewing application may include a library of functions that each use a custom algorithm to render different image file formats. An image editing program may contain algorithms designed to process image data. Examples of image processing algorithms include cropping, resizing, sharpening, blurring, red-eye reduction, and color enhancement. In many cases, there are multiple ways to perform a specific operation within a software program. Therefore, programmers usually seek to create the most efficient algorithms possible. A dynamic programming algorithm works by remembering the results of a previous run and using them to arrive at new results. Such an algorithm solves complex problems by breaking it into multiple simple subproblems, solving them one by one and storing them for future reference and use.

4.4 System requirements

This section describes all the functions that the system would possess and the different applications of the system. It explains in detail the information that the experience that the users should have.

4.4.1 Hardware Application

Since there is advancement in technology to replace the existing system, there would be some major hardware specification to enable the application to run very effectively and efficiently since it is a mobile based application. Below are the standard hardware requirements for the church management system.

Hardware	**Specification (Recommended)**
Processor	Quad-core 1.3 GHz and Above
RAM	2 GB
Internal Storage	16GB
Space needed	100MB
CPU(Chipset)	Mediatek MT6580

4.4.2 Software Specification

Software	Specification (Recommended)
Operating System	Android 8.1 Oreo (Go Edition) and above
Software	Android Studio, Node server, Java
Data Base	SQLite

4.5 Program Development

Program development has to do with the coding section of the software which is the main part, it involves the creation of the entire information system and all related components.

4.5.1 Choice of Integrated development Environment (IDE)

- **Android Studio**

Android Studio is the official integrated development environment (IDE) for Google's Android operating system, built on JetBrains' IntelliJ IDEA software and designed specifically for Android development. It is available for download on Windows, macOS and Linux based operating systems or as a subscription-based service in 2020. It is a replacement for the Eclipse Android Development Tools (E-ADT) as the primary IDE for native Android application development. It is a very stable software, it offers its user an in built emulator in order to run or test your application, it also provides a graphical interface (GUI) which allows users to modified their code by simple drawing and dropping the object , the defining its attribute and calling on it through the specified it within the java class.

- **SQLite**

SQLite is an open SQL Database that stores data to a text file on a device. Android comes in with built in SQLite database implement.

4.5.2 Language Justification

Java is considered as a hybrid programming language; it is not a pure Object-oriented programming language due to some of its properties which are:

- **Wrapper Class in Java**

With the help of the *Java wrapper class*, we can convert primitives into objects and objects into primitives. In Java, we can use Integer, Float, Double instead of int, float, etc. We don't need to call the method to communicate with the objects.
For example- String message = "Data" + "Flair";

By using Wrapper classes Java does not become a pure OOP language, as it will use the operations like *Autoboxing and Unboxing*. So even if we create Integer instead of int and do any mathematical operation, it will still use primitive type int only.

- **The static keyword**

In Java, a class declared as static can be used without the use of an object. We cannot call that function or variable using a dot(.) if we are using a static variable or a static class.

- **Primitive Data Type**

An example of a purely Object-Oriented Language is Smalltalk, it is unlike C++ and Java. In Java, we treat predefined data types as non-objects but the *primitive data types in Java* are treated as objects in Smalltalk.

Java is an all-around universal programming language. Due to its solidity and scalability, Java is found on mobiles, desktops and large-scale industry servers and applications. Java is easy to write and easy to run—this is the foundational strength of Java and why many developers program in it. When you write Java once, you can run it almost anywhere at any time. While Java does not suit all needs, it's still a popular programming language which is widely used and benefits a lot of people and businesses.

4.5.3 System Testing

The project was developed in Android studio (IDE) and was run using an external emulator Infinix hot 8 lite, infinix X650(MODEL), with android version 8.1.0, API 27, 2GB RAM, 16GB storage. This was done through the use of properly selected data to ensure reliability and accuracy of output.

The test data consisted of staff details, student attendance details. The respective usernames and passwords were used to login into the application.

The chat session was carried out between the emulator stated above and another which is Techno camon 12, in order to check for any bugs or issues.

4.6 System Evaluation

This means to put the new system under probation to test if the new implemented system is achieving the desired result or objectives of developing it. The new system performance needs to be evaluated in the terms of productivity level between it and the old system. If the differences are found, the system has to be evaluated and ascertained. Sometimes system failure or errors could be the result of wrong implementation, or use of a hardware or software which is below the stated requirements.

4.7 System Conversion

System conversion can be defined as the process of changing from an existing or old system to a new system, it refers to the activities which involve the replacement of the existing system with the new system. The following are the different method of system conversion:

1. Direct,
2. Parallel,
3. Phased,
4. Pilot.

Direct conversion

This type of system conversion involves the immediate stop in usage of the old system and move to the new system. It is the faster of all the system conversion method

Parallel conversion

This type of system conversion involves using the old system alongside the new system, the result of both systems is compared at the end of a fixed tested period and the most efficient is chosen.

Phased conversion

This type of system conversion involves use of large systems that can be broken down into individual modules than can be implemented at any time.

Pilot conversion

This type of system conversion involves the use of the new system by some departments of section of the organization to check its efficiency.

4.7.1 Recommend System Conversion

I recommend Parallel conversion method as it will help the organization review the effectiveness of the new system in comparison with the old system**.**

4.8 System Security

System security refers to the measures taken in order to counter or prevent any and all fraudulent activity within and from the system. It also ensures that data and information is kept secure from theft, corruption and other types of harm.

In this project the use of passcode which can only be obtained from the administrator is set for new user when they want to sign up, the used of password when logging in is also implemented.

4.9 Expected Update Features

The future update of this software would contain the following:

1. An online platform that can be accessed via the application
2. Student payment portfolio
3. Staff profile

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary

The term “Human Resource Management System” has been around for a longtime although it has gone through changes but the core or basis of its existence is the same, some of its previous names where industrial welfare, Recruitment and selection, Acquisition of personnel Activities, Industrial Relations, Legislation Flexibility and diversity. Human Resource Management System is similar to nervous system of the body, as it connects and is concerned with every worker within the organization, it makes sure that they are working efficiently and maintaining their commitment to the organization. Human Resource Management System (HRMS) is a very important part of an organization need, this system provides software-based facilities for the staffs of the organization and also for the Administrators. Human Resource Management System (HRMS) offers a lot of advantages to an organization ranging from seamless communication, to easy access to useful information, etc. The research, which was carried out using qualitative method, was done in Living gate classic school, the result of this research showed that a software based human resource management system will have a good impact on an organization.

The believe that “if it isn’t written on paper it isn’t official or useful” is very negative as it has fueled the retardation or stand still in progress of Human resource management in most organization. The software enabled system “LGCS” on successful completion and installation will enable the users to store official data within the data base. It would also provide a means of recording attendance; the software also boasts of a chat interface which would allow for quick communication between users.

5.2 Recommendation

It is expected that this project, if properly effected and handled will make Human Resource Management System faster and easier. I recommend that any group or persons that wish to further improve upon this project may incorporate: Online facility for users which can be access through the

mobile software and Database retrieval method for the organization, provide facilities for users to communicate online and also to provide facility to signal users' birthday and anniversaries.

5.3Conclusion

Human Research Management System is becoming a huge need in organization as the world is becoming a computerized, the use of traditional method is dying off. The result of this project leads to the conclusion that if this software is introduced and implemented, it would help the Organization achieve the objectives above and also help eradicate the paper work from the system. This software would help to make communication seamless within the organization.

I believe that computerization of this system has had great impact on its productivity, as state in chapter four the system conversion should be done using parallel conversion which involves the use of the old system alongside the new system, the result which would be the comparing of both systems at the end of a fixed period of time (test period) to check which was most effective and productive.

5.4 System Maintenance

This software with time and usage, the requirement of the organization may change, also there will be upgrade to the software adding new functionality and improving previous functionality.
In order to achieve this maintenance goal, the system monitoring methods, some approaches must be taken by the user to ensure smooth running of the software:

1. Clearing of the mobile cache
2. Making sure that the mobile storage is not full, so as not to cause lagging the responsiveness of the application
3. Ensure that you get update from the proper authority
4. In the case of malfunction seek the software creator so as to get if fixed without losing the stored information there in.

5.5 SUGGESTED AREAS FOR FURTHER STUDIES

I shall suggest that future studies on this topic should do a feasibility study to ensure that this software package is implemented on a wider scale so as to give room for exchange of information and ideas. I would also suggest a study of using quantitative method to research.

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APPENDIX

SOURCE CODE

Server.js

```
const SocketServer = require('websocket').server

const http = require('http')



const server = http.createServer((req, res) => {})



server.listen(3000, ()=>{

        console.log("Listening on port 3000...")

})



wsServer = new SocketServer({httpServer:server})

const connections = []
```

```
wsServer.on('request', (req) => {
        const connection = req.accept()
        console.log('new connection')
        connections.push(connection)

        connection.on('message', (mes) => {
                connections.forEach(element => {
                        if (element != connection)
                                element.sendUTF(mes.utf8Data)
                })
        })

        connection.on('close', (resCode, des) => {
                console.log('connection closed')
                connections.splice(connections.indexOf(connection), 1)   })
})
```

Sign up.class

```
package com.example.myapplication;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;

public class signup extends AppCompatActivity {

    public static final String EXTRA_TEXT =
"com.example.application.example.EXTRA_TEXT";

    EditText _username,_password,_password1,_password2;
    Button _button1;
    TextView _textView2;
    Backgroundtask DB;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_signup);
        _button1=(Button)findViewById(R.id.button1);
        _username=(EditText)findViewById(R.id.username);
        _password=(EditText)findViewById(R.id.password);
```

```
  _password1=(EditText)findViewById(R.id.password1);
  _password2=(EditText)findViewById(R.id.password2);
  _textView2=(TextView)findViewById(R.id.textView2);

        DB = new Backgroundtask(this);


        _button1.setOnClickListener(new             View.OnClickListener()             {
            @Override
            public              void              onClick(View              v)              {
             String           user           =           _username.getText().toString();
             String           pass           =           _password.getText().toString();
             String          repass          =          _password1.getText().toString();
             String         passcode          =          _password2.getText().toString();

if(user.equals("")||pass.equals("")||repass.equals("")||passcode.equals(""))
                Toast.makeText(signup.this,    "Please    enter    all    the    fields",
Toast.LENGTH_SHORT).show();
             else                                                                    {
                 if(pass.equals(repass)){
                     Boolean         checkuser         =         DB.checkusername(user);
                     if(checkuser==false){
                         Boolean      insert      =      DB.insertData(user,      pass);
                         if(insert==true||passcode.equals("1234")){
                             Toast.makeText(signup.this,    "Registered    successfully",
Toast.LENGTH_SHORT).show();
                             Intent   intent   =   new   Intent(getApplicationContext(),
LoginActivity.class);

   startActivity(intent);
                         }else{
                             Toast.makeText(signup.this,     "Registration     Failed",
Toast.LENGTH_SHORT).show();
                         }}
```

```
                    else{
                        Toast.makeText(signup.this, "User already exists! Please
Login",                                                    Toast.LENGTH_SHORT).show();
                    }
                }else{
                    Toast.makeText(signup.this,     "Password     not     matching",
Toast.LENGTH_SHORT).show();
                }
             }

            }
        });
        _textView2.setOnClickListener(new           View.OnClickListener()           {
            @Override
            public void onCl

ick(View                                    v)                                        {
                Intent      intent      =      new      Intent(getApplicationContext(),
LoginActivity.class);
                startActivity(intent);


            }
        });
    }
}
```

LoginActivity.class

```
package                                                    com.example.myapplication;

import                                          androidx.appcompat.app.AppCompatActivity;
import                                                    android.content.Intent;
import                                                         android.os.Bundle;
import android.view.View;
```

```
import                                                    android.widget.Button;
import                                                   android.widget.EditText;
import                                                   android.widget.TextView;
import android.widget.Toast;



public       class       LoginActivity       extends       AppCompatActivity       {

    EditText                                          _username,_password,_password1;
    Button                                                                  _button1;
    TextView                                                               _textView2;
    Backgroundtask                                                                DB;

    @Override
    protected         void         onCreate(Bundle         savedInstanceState)         {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_login);
        _button1=(Button)findViewById(R.id.button2);
        _username=(EditText)findViewById(R.id.usernames);
        _password=(EditText)findViewById(R.id.passwords);
        _textView2=(TextView)findViewById(R.id.textView3);
        DB                  =                  new                  Backgroundtask(this);
        _button1.setOnClickListener(new             View.OnClickListener()             {
            @Override
            public void onClick(View v) {


                String          user          =          _username.getText().toString();
                String          pass          =          _password.getText().toString();

                if(user.equals("")||pass.equals(""))
                    Toast.makeText(LoginActivity.this,   "Please   enter   all   fields",
Toast.LENGTH_SHORT).show();
```

```
                else{
                    Boolean checkuserpass = DB.checkusernamepassword(user, pass);
                    if(checkuserpass==true){


                        Toast.makeText(LoginActivity.this, "Signed in successfully",
Toast.LENGTH_SHORT).show();
                        Intent intent = new Intent(getApplicationContext(),
MainActivity.class);
                        startActivity(intent);
                    }else{
                        Toast.makeText(LoginActivity.this, "Invalid Login details",
Toast.LENGTH_SHORT).show();
                    }
                }
            }


        });
        _textView2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent intent = new Intent(getApplicationContext(), signup.class);
                startActivity(intent);
            }
        });
    }
}
```