E-RECRUITMENT SYSTEM FOR TEACHERS

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DECLARATION

we declare that this project is based on a study conducted by Obalakumo Fredrick Ayibatariwomotimi and Ogunubo Ebiso Favour, in the department of Computer Science, Bayelsa State polytechnic, Aleibiri, under the supervision of Mr. Assor Emmanuel.

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CERTIFICATION

The project, "E-Recruitment System for Teachers", meets the regulations governing board the award of National Diploma in Computer Science, Department of Computer Science, Bayelsa State Polytechnic, Aleibiri.

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Head of Department	Signature	Date
Jason Gelden	.....	.....
Dean of School	Signature	Date

DEDICATION

This project work is dedicated to the Almighty God for enabling us to successfully complete our National Diploma Programme.

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TABLE OF CONTENT

ABSTRACT

This project work is concerned with the design and implementation of Teacher Recruitment System. Recruitment refers to the process of screening, selecting a qualified person for a job. A thorough investigation into the existing job recruitment system was carried out. As a solution to inherent problems in existing ones, an online solution for job recruitment is proffered. The recruitment and job search engines are used to gather as many candidates as possible by advertising a position over a wide geographic area. It has also examined the relationship between the recruitment sources, job seekers perception and intention to pursue the job. In this project job recruitment application is developed and capable of advertising job vacancies, screening applications, short-listing candidates, inviting shortlisted candidates for interview, sending appointment letters to successful candidates via emails. The system adopted the project agile software development because it promotes planning, evolutionary development, early delivery and continuous improvement. The front end and backend were developed using html, CSS, Php language, XAMPP Server, Wordpress and MYSQL, respectively. The proposed system is well able to provide best results to job seekers by preventing, nepotism, bribery, ethnicity, etc.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Traditionally, organisations depended on fairly low technology, including newspaper advertisements and employee referrals to locate and attract qualified candidates. Other traditional tools used for recruitment include manual typewriters, hand delivery/dispatch riders, postal services, handbills, radio, television, and courier services. It is impossible to ignore or under-utilize the change that technology has brought in recent years across a variety of professions. In all spheres, computers replace humans' left hand and serve as their primary assistance. These days, computer systems efficiently and inexpensively complete all tasks that once needed a lot of time, effort, resources, and knowledge. The human resources management sector is one of the most significant ones that used computers to progress. Although the phrase may appear inadequate, it refers to a management function. In actuality, it oversees employees, or to put it another way, it is in charge of managing everything pertaining to hiring, training, inspiration, communication, and other things (Concept Answers Ltd, 2018). The process of using the more sophisticated aspects of modern information and communication tools for staff recruitment functions is referred to as e-recruitment or online recruitment. The rapid development of modern Information and Communication Technologies (ICTs) in the past few years has resulted in an increasing number of people turning to the web for job seeking and career development. Both the job seeker and the job poster find the process of looking for work and completing an application from the applicant's side to be difficult (recruiter) (Zalki and Atlam, 2021). The same challenge applies to job postings, as there is a complicated procedure beginning with the job announcement, choosing the best method to contact the ideal candidate, assessing the requests,

and finally employing the ideal one! Everyone is aware that this procedure is expensive for both parties when done traditionally. For instance, many businesses spend a lot of money on advertisements in publications like magazines and newspapers. In addition, a lot of job searchers pay money to employment services and become scam victims. Due to the unreliable outcomes of the hiring procedure in its conventional form, computer systems stepped up and declared that they could once again offer the most dependable answer for all parties. Online hiring platforms started to emerge at this point. A lot of companies use online knowledge management systems to search for job seekers and hire employees, exploiting the advantages of the World-Wide-Web.

E-recruitment enables employers and job seekers to advertise openings or conduct job searches at a reasonable cost and with the assurance that they will quickly reach a large pool of applicants. The majority of recruitment systems are online web applications where job searchers can independently search for and apply for positions that fit with their goals and qualifications. For many users worldwide, this system seems to be a hero (Tang, 2016). Either in universities or other institutions, Quality and Development Authority (QDA) must rely on these systems to offer opportunities to a sizable group of brilliant individuals and to ensure the caliber of the recruiting procedure. For instance, many fresh university graduates are unsure about their next steps and how to create the ideal CV in order to apply for jobs or training opportunities. Many of these issues are resolved by online hiring practices, which also boost productivity across a wide range of industries and improve quality and development. A lot of companies use online knowledge management systems to hire employees, exploiting the advantages of the World Wide Web. These are termed e-recruitment systems and automate the process of publishing positions and receiving CVs. In recent years, e-recruitment technologies have grown rapidly, enabling Human Resources (HR) firms to target a huge audience at a low price. The necessity to commit human

resources for manually reviewing resumes and determining if applicants are qualified for the open positions may be onerous for HR departments. Efficiency could be improved by automating the analysis of candidate profiles to identify those that match the requirements of the post.

Using Machine learning brings many advantages and efficiencies, as it makes use of the existing data about the candidates, considers the job requirements, and selects the best candidate. The goal of this study is to create an automated web-based online recruitment system that changes the manual hiring process from its manual to automatic state. This system aims to replace the conventional methods of job searching, application, and hiring by assisting both employers (recruiters) and candidates (job seekers).In the study, the applicants' evaluation is based on a predefined set of objective criteria, which are directly extracted from the applicant's LinkedIn profile. The candidate's personality characteristics, which are automatically extracted from his social presence, are taken into account in his evaluation.

1.2 Statement of the Problem

The conventional method of applying for a job—which involves seeking for it in the newspaper, phone book, and among family, co-workers, and other people—appears to be unproductive. Additionally, manually posting a job opening and contacting the top candidates are insufficient tasks. Both sides' laborious hiring processes cost money in every way. Starting with the tools that job seekers use to conduct their job searches and the perspective of the employers who they frequently pay to post job openings. The institution or business may not be able to get all the skilled people they require despite these advertisements. Until they locate the right applicant, this process must be repeated. However, submitting a paper application to a company is rarely particularly successful. Consider the following scenario: Person X applied for a job in 2019 and

submitted his resume, but he was unsuccessful in getting the position. However, in 2020, a new position became available, and in exchange, he spent the following year developing a new ability. Does the company recognize that among the numerous job applications it has received, the CV of that individual X seems to be advantageous to them? If yes, how is it feasible for this person to add to or modify his CV and apply without difficulty? The recruitment process now looks very different thanks to the Internet. With the help of a well-implemented E-recruitment program, employers may now actively advertise their open positions in order to locate better prospects and make better hiring decisions faster and more affordably. New technology that has thrust itself on us always has the answer to this. Yes, technology has altered the world and improved upon conventional practices. Now that they may compete with others and advertise themselves, job searchers can look for possibilities in their preferred industry. Companies can promote their chances for very little money.

1.3 Aim and Objectives of the Study

The aim of the study is to develop an e-recruitment model for teachers using Machine Learning Algorithm. The specific objectives of the study includes the following:

1. Develop an online recruitment system for teachers
2. Design a web base online job exam system and result display.
3. Development an automated applicants job ranking system.
4. Implement the system using a high level programming language called PHP and Java Script.

1.4 Significance of the Study.

This topic is important and will benefit organisations and individual especially the HR department in choosing and distributing competent employers in the teaching domain. The study will also be beneficial to the beneficiaries in the following ways:

I. Developing a machine learning recruitment system that will help in the decision-making process, which is based on analyzing data on each candidate.
II. Improving the quality of large scale recruitment of teachers in the academic sector.
III. Candidate will have faith on the result and will be unbiased.

1.5 Scope of the Study

This scope of the research cover areas such as government agencies, companies and corporate organization that used enhanced online employment technique in their operation. However, For the purpose of this work particular attention will be on the teacher and hybridized machine learning tools.

1.6 Limitations of the Study

The limitations encountered during the course of the study include the following:

i. Lack of sufficient power supply: this constraint affected a smooth and effective use of the Internet.

ii. Time constraints.

iii. Insufficient funding.

Employment

An Employment is a relationship between two parties, usually based on a contract where work is paid for, where one party, which may be a corporation, for profit, not-for-profit organization, co-operative or other entity is the employer and the other is the employee.

Artificial intelligent

Artificial intelligence is the simulation of human intelligence processes by machines, especially computer systems. Specific applications of AI include expert systems, natural language processing, speech recognition and machine vision.

Hybrid Learning Models

This models make it possible to expand the variety of business problems to include deep learning with uncertainty. This can help us achieve better performance and explain ability of models, which in turn could encourage more widespread adoption.

E-Recruitment

E-recruitment, also known as online recruitment, refers to the use of web-based technology for the various processes of attracting, assessing, selecting, recruiting and on-boarding job candidates.

CHAPTER TWO

LITERATURE REVIEW

2.1 E-Recruitment

Choosing the best candidate for a position based on their qualifications and skill set is referred to as recruitment. In the current era of technological advancement, the internet is required for all work. Everything has been impacted by these technological advancements, namely the manner of thinking, dwelling, communicating, culture, economy, demographics, and even society. The work of life has altered as a result of evolving technologies. There is constantly a need for skilled workers in the organization. E-recruitment was created in this manner. Online recruiting is another name for e-recruitment. The application of technology to facilitate the hiring process is known as e-recruitment. The recruiting process differs when done traditionally, and e-recruitment has changed how recruitment is done in organizations today. Today, a variety of networking sites, such as Naukri.com, Monster.com, Shine.com, Fresher's World, Times Jobs, LinkedIn, Free Jobs Alerts, etc., are used to find qualified candidates for employment. These sites have emerged as significant sources of good personnel for both employees and organizations. These are some of the greatest employment sites in the country, aiding those using them in finding the best candidates for open positions inside their organizations. Currently, they offer job postings over the World Wide Web.

Edwin B. Flippo (1979) stated that "recruitment is the process of searching for prospects for work and motivating them to apply for jobs in the business" in his definition of e-recruitment. According to Galanaki, e-recruiting is the practice of hiring using corporate websites, specialist websites, or online advertisements (2002). In the fifth edition of his book Human Resource

Management, Raymond J. Stone (2005) describes recruiting as the process of attracting a pool of candidates from which eligible applicants for open positions inside a company can be chosen. According to Parry & Wilson (2009), recruitment comprises all methods and actions taken by a business with the main objective of locating and luring potential personnel.

2.2 Benefits of E-Recruitment in the Organization

i) The diversity of the candidates

Employees get access to online job opportunities through e-recruitment. Because the scope is broad, a variety of applicants from various levels—internationally, nationally, and locally—are encouraged to apply, expanding the candidate pool and giving companies a better chance to fill open positions. E-recruitment is a speedier method of hiring. With its simplicity of use and quick communication methods, such as email addresses, phone services, and job alerts, it aids employers and employees in the recruitment and selection process. This aids in the periodic updating of information for recruitment.

ii) The administrative load is lessened.

The administrative burden is lessened with e-recruitment. The applications are sorted by e-recruitment, which also develops an ability pool that aids in the HR process. The cost to an organization of performing administrative tasks that they wouldn't perform in the absent of organizational norms is known as an administrative load.

iii) Saving time

Our time is saved by e-recruitment, because the hiring process is quick, there are always tools online, and it is inexpensive. It shortens the hiring process. The organization attracts employees by adopting an electronic recruitment process.

iv) Job Portals

Different employment portals are offered by the e-recruitment process, including those for corporate websites, job or career boards, and professional websites of various organizations, online jobs, and career advertisements. These job portals aid in the electronic hiring of workers.

2.3 Problems with E-Recruitment

The following issues with online hiring are identified (Rathee and Bhuntel, 2017):

1) There is judgement error since employers are unable to evaluate candidates' qualities without speaking to them in person, which reduces the system's dependability.

2) Lack of personalization makes it challenging for companies to evaluate applicants because the applicant might have overstated in their application.

3) Because candidates' full profiles are accessible on online job platforms, there are a number of privacy concerns.

4) Candidates must have internet access because they cannot check the portals or websites without it.

5) Sometimes job seekers find it challenging to apply because of the complicated web forms.

6) The issue of false offers also exists since it is challenging for candidates to distinguish between genuine and fake offers.

7) Old advertisements are a problem, because firms fail to take them down even after vacancies have been filled.

2.4 Effect of e-Recruitment's on the Organization

The most crucial resource for a company is its human capital. The quality of the employees employed by an organization determines whether it succeeds or fails. Organizations cannot advance without creative labor and favorable employee contributions. According to (Rathee and Bhuntel, 2017) analysis of the effects of internet recruitment on an organization are as follows:

a) Application ranking: The position of employees in relation to the jobs they have applied for assists with the applicant ranking process. It has a significant effect on the workforce because there is less time wasted and alternative possibilities are available at the same time thanks to online recruitment. It is determined by the employee's training, professional background, and loyalty. According to the demands of the employment post, (Athansios and Tzimas, 2012) discovered that each criterion has a varied value in the candidate rank. According to (Khan et al., 2013), the web is the most popular place to look for jobs, and an applicant's job rating has a big impact on whether or not they intend to pursue the position for which they have applied. According to Nasreem et al. (2016), the majority of respondents chose e-recruitment due to the benefits of higher applicant quality, a bigger applicant pool, quicker hiring, and lower costs. Ahlawat and Sangeeta (2016) discovered that using an internet-based system to handle candidate application rankings offers considerable advantages in terms of effectiveness, cost, and the capacity to keep an eye on hiring practices.

b) Corporate websites: These websites assist businesses in finding talented and qualified workers from a variety of job boards, such as Nakuri.com, Monster.com,

Shine.com,Timesjobs.com, etc. For their open positions, the organizations have alternatives. Earlier, Tyagi (2012) proposed that candidates submit online applications on business websites to register with the company's database. According to Ahlawat and Sangeeta (2016), web sites are the digital platforms that display information about the company, frequently containing HR data and job recruitment links. Furthermore, Fred and Kinange (2016) discovered that as a result of the rising costs and rigidity of alternative recruitment strategies, corporate websites have grown to be a more widespread phenomena.

b) Novel ideas and innovativeness: Innovativeness and new ideas are transforming how people live. E-recruitment is a novel concept for finding new personnel for the company. Through the internet, promotion and application support are provided. Due to cheap costs, lack of inter diaries, worldwide shifts, and candidate preferences, new recruitment ideas and policies should be adaptable and proactive in order to keep up with market developments. Tyagi (2012) discovered that because of new ideas and innovation, the recruiting policy is adaptable and proactive in the age of globalization. According to Khan et al. (2013), the globalization and electronic revolution have altered people's daily lives, and e-recruitment is now widely used.

d) Higher standards of uniformity and agreement: Information provided by applicants is collected in a consistent, standardized format that makes comparisons simple. Shortlists can be compiled more objectively thanks to this, and it also creates an auditable data trail that helps with regulatory compliance. Smith and Rupp (2004) conducted research on an organization that developed a successful e-recruitment platform to locate applicants of higher caliber and enhance hiring decisions while spending less time and money. According to Jobvite (2012), recruiters that used internet recruiting saw a growth in both the number of applicants and the caliber of

applicants. Quality in this context refers to how closely the candidates' credentials, experience, and general suitability fit the requirements of the position.

2.5 Effect of E-recruitment's on Employees

1. Effect on worker satisfaction

As opposed to newspapers, acquaintances, and other sources, the internet is the best resource for obtaining a job, thus employees are happy with the e-recruitment process. In this way, the internet aids mostly in career development process for openings in various firms. Employee satisfaction with online recruiting and time spent using the system are positively correlated. In a study on the online application system, Sylva (2009) discovered that the website's features, perceived effectiveness, and user-friendliness were by far the most crucial factors of applicant satisfaction.

2. Effect on employees' performance

E-recruitment has a positive impact on employee performance because it saves time, is simple to use, offers chances for growth, promotes work-life balance, conducts interviews online, and enhances employee performance. The effectiveness of the personnel is enhanced by e-recruitment. E-recruitment has emerged as a practical and advantageous strategy compared to traditional ways of recruiting. The authors contend that improvements in technology and business methods streamline corporate operations and improve productivity. According to Plessis and Frederick (2012), monies should be allocated to monitor the effectiveness of e-based systems. According to Babalola et al. (2015), e-recruitment has a considerable impact on a company's performance in terms of cost- and time-saving measures.

3. **Greater possibility of success**

Employees that use the e-recruitment process have a higher likelihood of success, and using this technological tool, employees perform better. Resources are accessible around-the-clock. They inspired the staff members to succeed and advance. For a higher probability of success, Bizer and Rainer (2005) discovered that many businesses use online recruitment systems to hire staff.

4. **Effect on how employees perceive it.**

E-recruitment should replace the traditional hiring method. Employers who use e-recruitment help their employees advance their professional skills. The use of the internet has significantly altered the recruiting process. Large and small businesses alike are increasingly using it. As a result, e-recruitment and employee attraction at the workplace are good. According to Khan et al. (2013), employee attitudes and recruitment sources have a significant, positive impact on applicants' intentions to pursue positions they have applied for. According to (Rakholiya and Sangeeta, 2013), candidates have a favourable opinion of e-recruitment.

5. Usage ease

The ease of use has an impact on employees while using e-recruitment. Employers in the commercial sector as well as businesses in the public sectors benefit from e-recruitment. Candidates submit their resumes to the central database, where the system screens them and sends the applications to the appropriate candidates. Employers and candidates may both save a ton of time with the pre-screening software that is now being used. E-recruitmentoffers more user-friendly job chances and a variety of online application options. According to (Rakholiya and Gupta, 2013), using e-recruitment websites is seen as simple, transparent, and understandable.

Ventura and Bringula (2013), have made a study by building a prototype of an E-recruitment system for the university of the East to study the effectiveness of such systems in the recruitment process. They evaluate the system by six groups of respondents to determine the effectiveness of the system in terms of performance, reliability, security, and cost-effectiveness. They didn't present the way of building their system clearly but they show some results to prove their final conclusion that such systems are effective.

Tyagi (2012), with an emphasis on e-recruitment trends and practices in India, the author expanded the body of research on recruiting methods. The study discussed several hiring practices and the advantages that organizations that employ them receive. According to this survey, automating the hiring procedures enables businesses to implement the finest hiring practices and select the top candidates on the market. Through career websites, this results in better employment opportunities, and it also offers better recruitment tools for choosing qualified people. E-recruitment is not a complete replacement for traditional hiring practices. It speeds up the hiring process and complements conventional approaches.

Poorangi et al. (2011) evaluated the benefits and drawbacks of e-recruitment methods, as well as the practical and managerial consequences of e-recruitment strategies for SMEs in Malaysia. A conceptual model was constructed from the literature review on the basis of the assumptions, which covered the idea of e-recruitment from an e-business and human resource management point of view. A structured questionnaire was used in an empirical investigation with a sample size of 60 SMEs. The study discovered statistical outcomes of Malaysian SMEs' hiring decisions, which were primarily made by top management (entrepreneur, CEO, or owner). The study discovered a scarcity of data on user behaviour towards electronic systems utilizing technology

acceptance models. It was advised that researchers look into and research how users of e-recruitment websites behave from a TAM standpoint.

Ozuru and Chikwe (2015) explored the benefits of companies in Nigeria using an electronic recruiting technique. This study uses documentary and survey methodologies. Spearman rank order correlation and Pearson product moment correlation were used as analysis tools. The study discovered a significant relationship between relative advantage and website design, as well as a relationship between website complexity and corporate adoption in Nigeria. These findings suggested that these relationships had an impact on the relationship between e-recruitment strategy and corporate adoption in Nigeria. This report recommends conducting a diffusion study of e-recruitment to pinpoint the factors that influence how widely used the technology is across Nigerian firms.

Rakholiya and Gupta (2013) analyzed how applicants felt about the value of e-recruitment websites, how long it took to process their applications, how much it cost, and the particular criteria they used to choose a job through e-recruitment. The sample size for this research was 100, and convenience sampling was utilized to select the sample. The research approach was descriptive and analytical. This study concentrated on how individuals perceived and were satisfied with e-recruitment. Based on personal awareness of the industrial practices offered online, job seekers must provide helpful information, user-friendly web-based recruitment, and fun web-based recruitment to job seekers.

Shahila and Vijaylakshmi (2013) compared and contrasted e-recruitment with traditional recruitment practices, as well as its benefits and drawbacks. They also concentrated on the potential of e-recruitment as well as the trends and procedures of the company's e-recruitment process. The study's findings showed that adopting e-recruitment required more than just

technological advancements; it also required that the recruitment process be capable of luring in the ideal applicant for the ideal position in accordance with the selection criteria. It involves enhancing HR's capacity to support end-to-end processes, much like the supply chain.

Khan et al. (2013) studied the relationship between recruiting sources, job seekers' perceptions, and intentions to pursue the job in order to understand the significance of recruitment in this study. 257 respondents provided information, which was then collected and analyzed in light of the study's goal. According to the study, the internet is the most common place to look for jobs, and job seekers' intentions to pursue positions they have applied for were highly influenced by their impressions of those occupations.

Malik and Razaullah (2013) studied the use of e-recruitment within organizations and the use of e-recruitment techniques as a workshop attraction tool. The goal of the study was to determine how e-recruitment techniques aided in attracting talent; the telecommunications industry was chosen as the focus of the data gathering. The attraction of employees to the workforce and e-recruitment has a beneficial link. This study established the beneficial effects of e-recruitment on staff hiring and growth in the telecom industry.

Kaur (2015) centered on the requirements for efficient e-recruitment, procedures, e-recruitment trends, and advantages and disadvantages of the e-recruitment. Exploratory and qualitative research methods were used. Various publications, articles, and research papers served as secondary sources for the data. E-recruitment should complement and cover the traditional approach, not replace it, according to the author's suggestion. This will speed up and save time during the hiring process. There has undoubtedly been a paradigm shift in how firms approach hiring, and the value, effectiveness, and usability of career sites.

Naseem et al. (2016) discovered the sources that Small and Medium Enterprises (SMEs) of industry must frequently use for e-recruitment, the degree of management positions for which IT prefers e-recruitment, identified the benefits most frequently experienced by Pakistani SMEs in the IT sector. They contrasted the opinions of male and female recruiters, noted disparities, and pinpointed the drawbacks of SMEs in the IT sector on the results of e-recruitment in Pakistan. The study discovered that the majority of firms in Pakistan were currently employing both traditional and electronic recruitment methods for their hiring needs, while IT-based organizations are still hesitant to totally rely on electronic hiring. Additionally, it was discovered that the majority of respondent businesses use all three avenues of recruitment to fill all top, middle, and lower level roles (own websites, commercial jobsites and social networking sites).

Ahlawat and Sangeeta (2016) examined the many e-recruitment sources available to the company, including simplicity of use for the company, speedier hiring, staying ahead of the competition, cost savings, convenience of use for candidates, and a huge candidate pool. This study included a number of in-depth analyses of e-recruitment in order to understand both its advantages and disadvantages. The firm could track and manage applicant applications using an internet-based system, which would have a substantial positive impact on the effectiveness, cost, and ability to keep an eye on the hiring process.

Sherkar (2015) recognized the different e-resources that are available to help with the hiring and firing process in hotels, their benefits, and their effectiveness. There was a simple random sampling. The survey included the five-star, four-star, three-star, and low-cost hotels in the hospitality sector. According to the author, HR should identify qualified candidates for hiring in the top management cadre, and e-resources should be primarily employed to draw in talent and

streamline the hiring process. To get the desired results, the use of e-resources in recruiting and selection might be increased.

Fred and Kanunga (2016) examined the organization's current e-recruitment practices; these practices have an impact on the organization's e-recruitment process's organization, efficiency, and performance. The HR division oversees the diversity of the workforce with regard to culture, time zones, specializations, benefits, and salary. The study's foundation was secondary data, which was gathered through scholarly journals, the internet, and books. According to this study, employers seem to more concerned about hiring a qualified, quality-oriented candidate over one who is more concerned with price. The recruitment process involves active participation from third parties like head hunters and recruitment agencies. E-recruitment promotes organizational recruiting performance, efficiency, and effectiveness. Particular internet recruitment techniques contribute to organizational advancements.

Haddadi, et al. (2017), presents a new e-recruitment system based on MOOC as the main recruitment. The system was intended to aid recruiters in the hiring process by giving them access to a sizable profile database with numerous selection criteria. The system aims to accomplish two things: first, recruiters may use the system to help them locate the finest candidates, integrate them into their organizations, and attract a lot of young people and job searchers to their MOOC platform.

Ramadhani and Zarlis (2018) researched on analysis of E-recruitment system design. The writers discussed online hiring platforms like LinkedIn, Reed, and Indeed as resources for potential employees looking for jobs. Employees must register their email address, name, preferred bachelor's degree, and desired pay on this website. After that, the system will provide candidates a link to the company's job postings so they may quickly and easily register with the system. But

the technique is useless since the potential employee must sign up on the website where the e-recruitment site only offers such services. In contrast to potential candidates and e-recruitment platforms, recruiters (firms) also face more significant issues. The business must invest a lot of effort, time, and money in opening the selection of new recruiting applicants. The study's goal was to develop heading postings that would allow users (potential employees) and employers to use the same system and assist both parties in identifying qualified employees.

CHAPTER THREE

SYSTEM ANALYSIS AND DESIGN

3.1 Methodology

The set of guidelines and procedures used to produce computer software is known as the software methodology. It includes the usage of a software development paradigm and at least one approach. *Methodology* is therefore defined as *Software model + Techniques*. The methodology adopted for this study is the Top-Down Design approach with iterative model. According to Nath (2018), the Top-Down Design technique is essentially the dismantling of a system to obtain insight into its compositional sub-systems. It is also known as stepwise design, deductive reasoning, or used as a synonym of analysis or decomposition. A top-down method creates a system overview without providing any specifics. Then, until the entire specification is reduced to base elements, each subsystem is improved in even more detail, perhaps at numerous additional subsystem levels.

In order to make it simple to track down a specific section of code inside a software program, the Top-Down Design technique is built on the use of modules, which further divide the program into smaller modules. Based on its own functions and processes, each module.

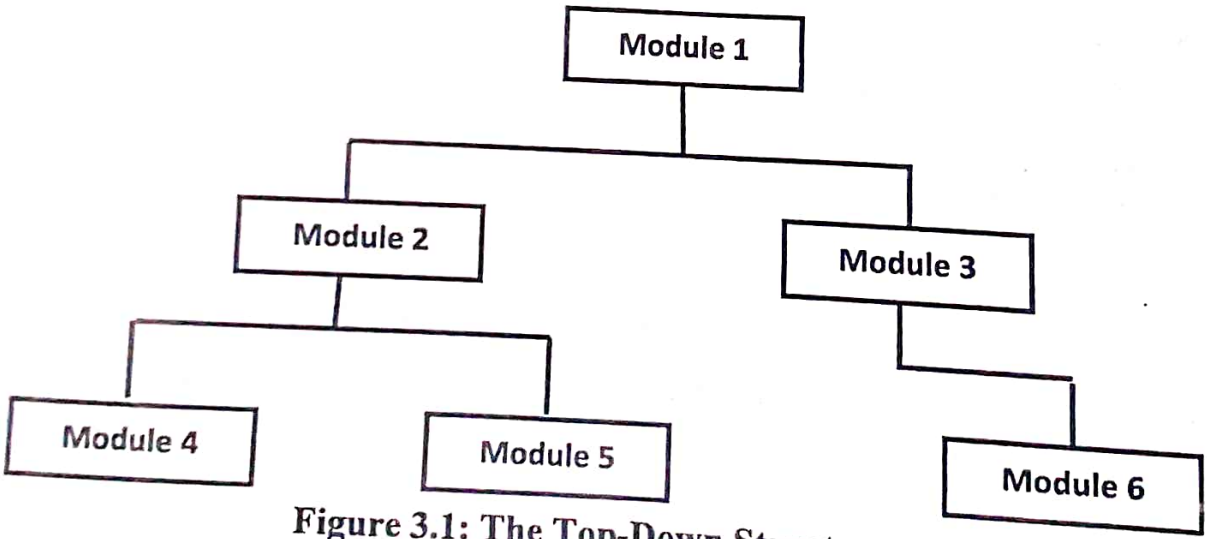


Figure 3.1: The Top-Down Structure.

When IBM engineers Harlan Mills and Niklaus Wirth created the top-down paradigm for software development in the 1970s, it became widely used. Structured programming, which Mills developed, helped to improve the quality and shorten the amount of time needed to produce a computer program. Once more, Wirth created a programming language called "Pascal" that utilized the top-down methodology. Top-down programming has the following advantages (Abolaji, 2017):

1. Fewer operational errors.
2. Takes less time (each programmer is only concerned in a part of the big project).
3. Extremely efficient method of processing (each programmer must use their expertise to their individual components, or modules), resulting in an efficient project).
4. Simple to maintain (if an output error occurs, it is simple to determine which module of the complete program caused the error).

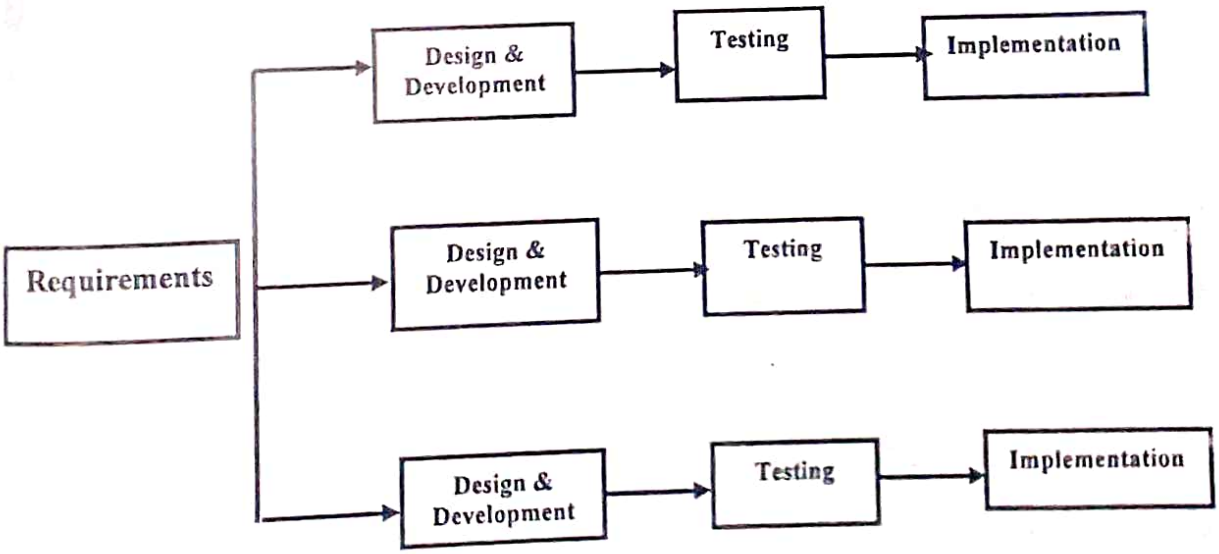


Figure 3.2: Iterative Model Structure.

Iterative Model: In (Nwachukwu and Igbajar, 2015) thought about using the Iterative (Incremental) model, which divides software into smaller modules and has each module go through the steps of requirements, design, testing, and implementation.

According to Nwachukwu&Igbajar [4], the following situations frequently employ this model:

1. The system's requirements are well-defined and understood.
2. While certain needs may change over time, the major ones must be outlined.
3. The market limitation has its place and time.
4. The development team is utilizing and learning a new technology.
5. The required skill set is not currently available and will only be employed on a contract basis for a limited number of cycles.
6. Some high-risk objectives and features could change in the future.

3.2 Analysis of the Existing System

The existing systems enables jobseekers to search through print media like poster advertisements, newspapers and visual media like television or company websites for employment opportunities. This is a tedious task as it takes a lot of time and energy to search for the right job position, learn about the position and about the company. Job search for proper match of skill set and salary is challenging. Job seekers can also find jobs through job fairs where they must first make it possible to attend the fairs which might be sometimes impossible with their schedules and if they visit the fairs they must hand over paper printed resumes. The more the number of candidates the more the number of papers for the company which is a lot of manual effort. Again, jobseekers might get job offers through placement cells in respective colleges but getting hold of the right opportunity at the right time is always challenging. On the other hand, the same goes for employers who are looking for candidates who are best fitted for

their job positions. They must constantly advertise, go to a lot of job fairs which still doesn't guarantee the best way to select from a large pool of candidates.

3.2.1 Existing System Architecture

Architectural design of the existing system is show below in figure 3.1. They must constantly advertise, go to a lot of job fairs which still doesn't guarantee the best way to select from a large pool of candidates.

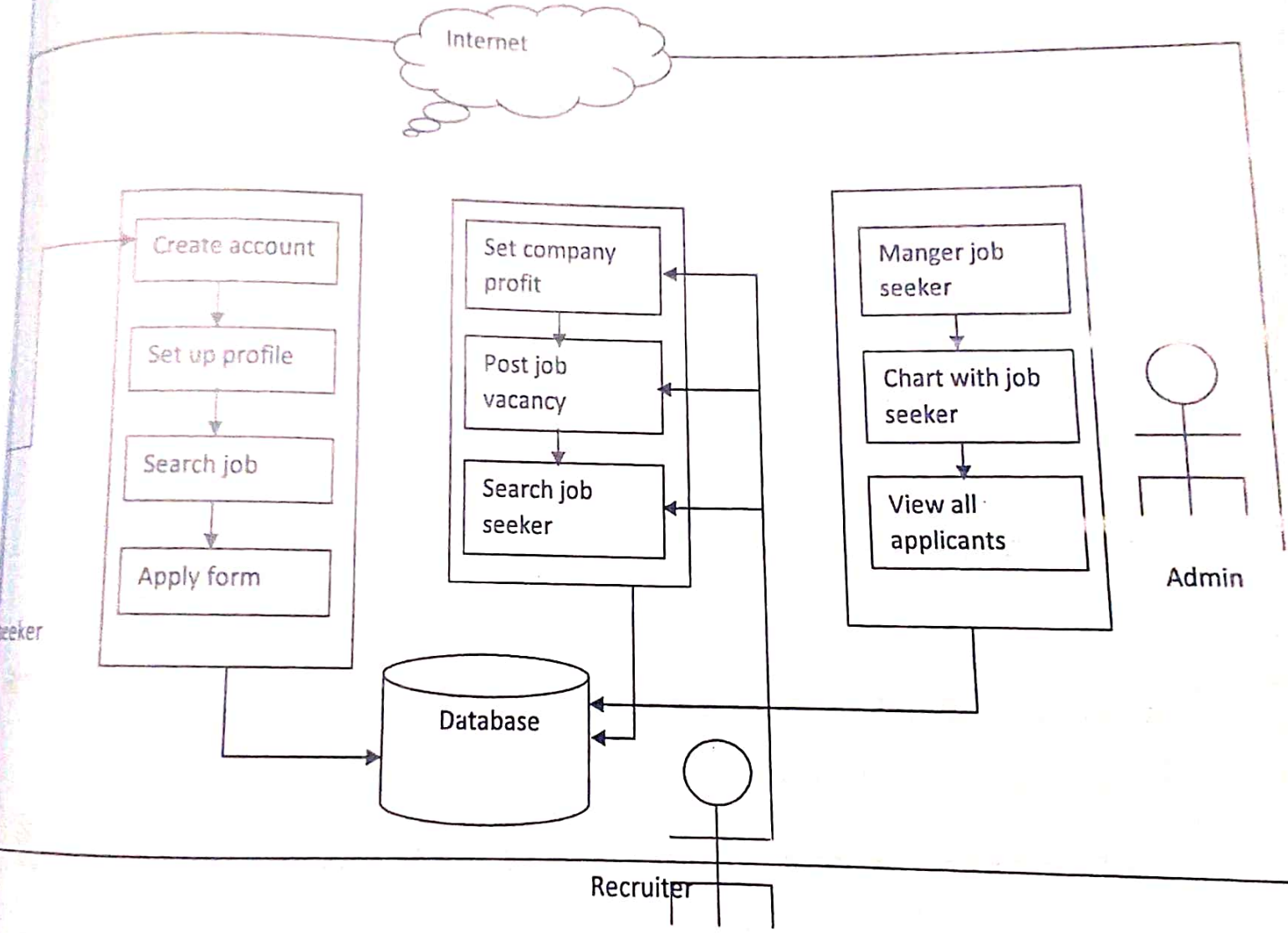


Figure 3.1 Architecture of the Existing System (Sources: Malki and Atlam, 2021)

3.2.2 Limitations of the Existing System

The limitations of the existing system (Malki and Allam, 2021) include the following:

i. Lack of selection criteria for qualified candidates to fill job applications positions as advertised by the recruiter.

ii. Unautomated ranking process of applicants.

iii. May lead to biased in selection of qualified applicants.

iv. Prone to error.

3.3 Analysis of the Proposed System

The proposed e-recruitment system implements automated candidate ranking based on a set of credible criteria, which will be easy for companies to integrate with their existing Human Resources Management infrastructure. In this study we focused on four complementary selection criteria, namely: Education (in years of formal academic training), Work Experience, Loyalty (average number of years spent per job) and Extraversion. The system architecture, which is shown in Fig. 3.5, consists of the following components:

1) Applicants Application module: It implements the input forms that allow the candidates to apply for a job position. The candidate is given the option to log into our system using his LinkedIn account credentials, which allows the system to automatically extract all objective selection criteriadirectly from the user's LinkedIn profile.

2) Personality mining module: The applicants' personality traits are critical for their

selection in many job positions, but are usually overlookedin existing e-recruitment systems. Typically, candidates'personality is assessed during the interview stage, which isreserved to the candidates that passed the pre-screeningphase. However, gathering some preliminary data for the candidate's personality in the pre-screening phase isconsidered valuable, and such information is often obtainedthrough web searches. In the Web 2.0 era, there are large amounts of textual data for millions web users, that havebeen shown to be reliable predictors of user's personality.

The proposed system automates the task of personality mining using text analysis. Thetext analysis in these works is performed with LIWC(Linguistic Inquiry and Word Count) system, which extractslinguistic features that act as markers of the author's personality. LIWC uses a dictionary of word stemsclassified in certain psycholinguistic semantic and syntactic word categories. It analyzes written text samples by counting the relative frequencies of words that fall in eachword category. Pennebakerand King have found significant correlations between these frequency counts and theauthor's personality traits as measured by the Big-Five personality dimensions. If the candidate's blog URL is provided, it applies linguistic analysis tohis blog posts to derive features reflecting the author's personality.

3) Applicant Grading module: It combines the candidate's selection criteria to derive the candidate's relevance score for the applied position. The grading function is derived through supervised learning algorithms.

Each applicant's qualifications, as well as his relevance score, are stored in the system's database. At the end of the recruitment process, the top candidates are called toparticipate in the interview process. It must be noted here that during the job application process, the applicant is not required to manually enter information or participate in time-consuming personality tests. Thus, the user friendliness and the practicality of the system are maintained.

3.3.1 Advantages of the Proposed System

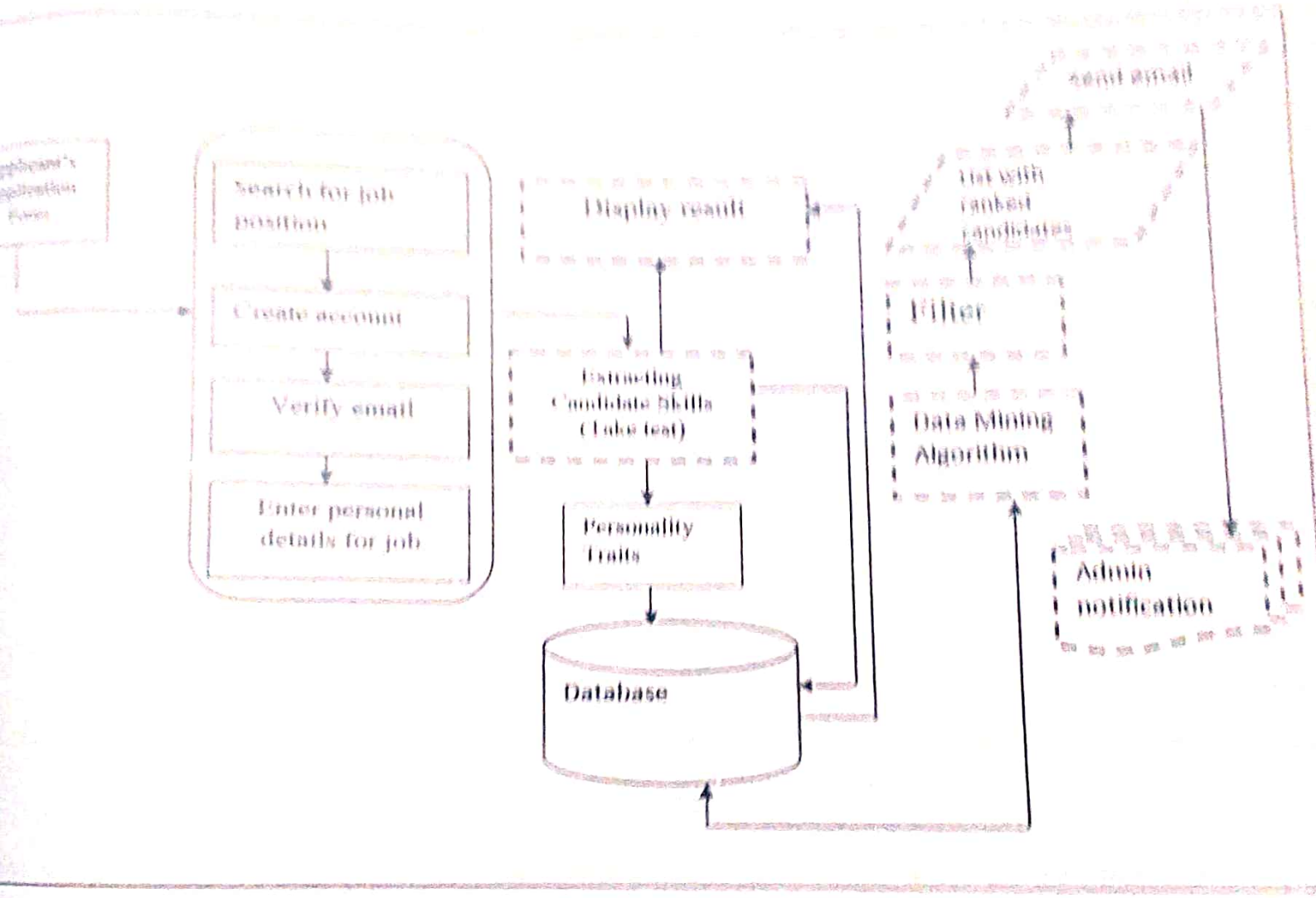


Figure 3.6 Architecture of the Proposed System

3.4 Input design of the proposed system

The inputs are accepted through a form designed in HTML and exported to PHP in which hybridized. The applicant is asked to enter username and password and email. Then the e-form is display after email verification.

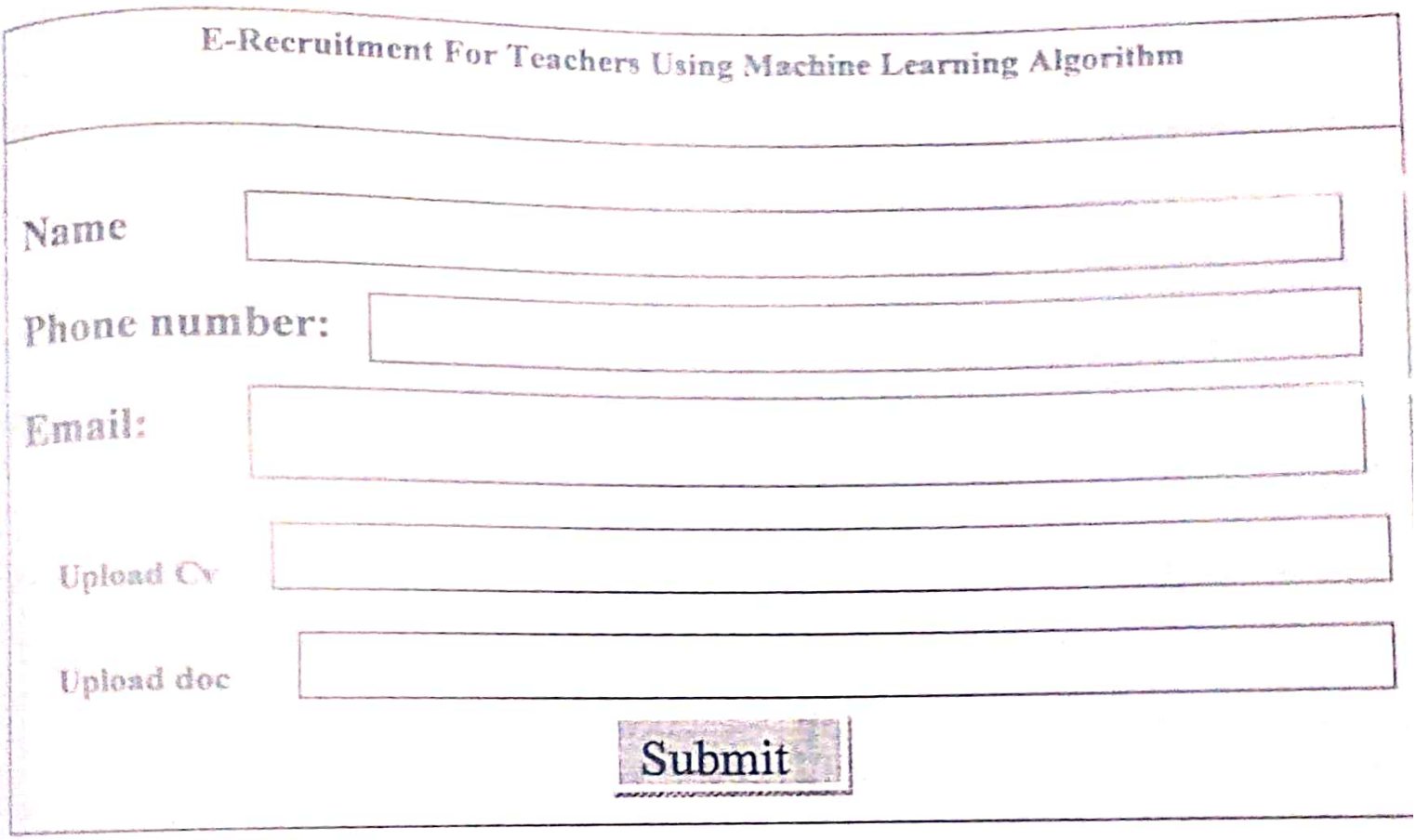


Figure 3.6: Input form of the proposed system

3.4.1 High level process design

In the software Development Life Cycle, the output of the system requirement analysis phase can be considered as an input to the system design phase. The architectural description of a System with details about its components and sub components is called System design. The pictorial description of the system, modules, and sub systems gives a proper overview of the system and its design details. Through UML diagrams we specify and visualize various aspects of a System

and its architecture. Security, Reliability, being able to deliver desired output to end users based on available resources and that the system is responsive and dynamically changes are some of the important aspects ensured by the System Design

3.4.2 USE-CASE diagram

While understanding only the static nature of a system is insufficient, Use-Case diagrams helps to give the dynamic view of the system. Use Case diagrams models the system and the subsystems of an application. There are some external and internal factors that marks the dynamic nature of the Use Case diagram. We call them actors. While Use case diagrams can be considered as a high-level requirement analysis of the system, they give a clear notion of the actors and their roles (use cases) and hence is an important pictorial representation to understand system specifications early in the project. Use case diagrams are a clear visualization of actors (the internal or external factors), their roles (use cases) and relationship amongst these actors and their roles.In this system there are 5 actors namely admin, new user, registered user, new employer, registered employer. The different use cases are:

View Jobs-The admin can view all the jobs on the portal.

Register – If there is a new User or a Company they first must sign up to the job portal.

Login- Once the new company or the new user signs up they can sign in to the portal. Retrieve

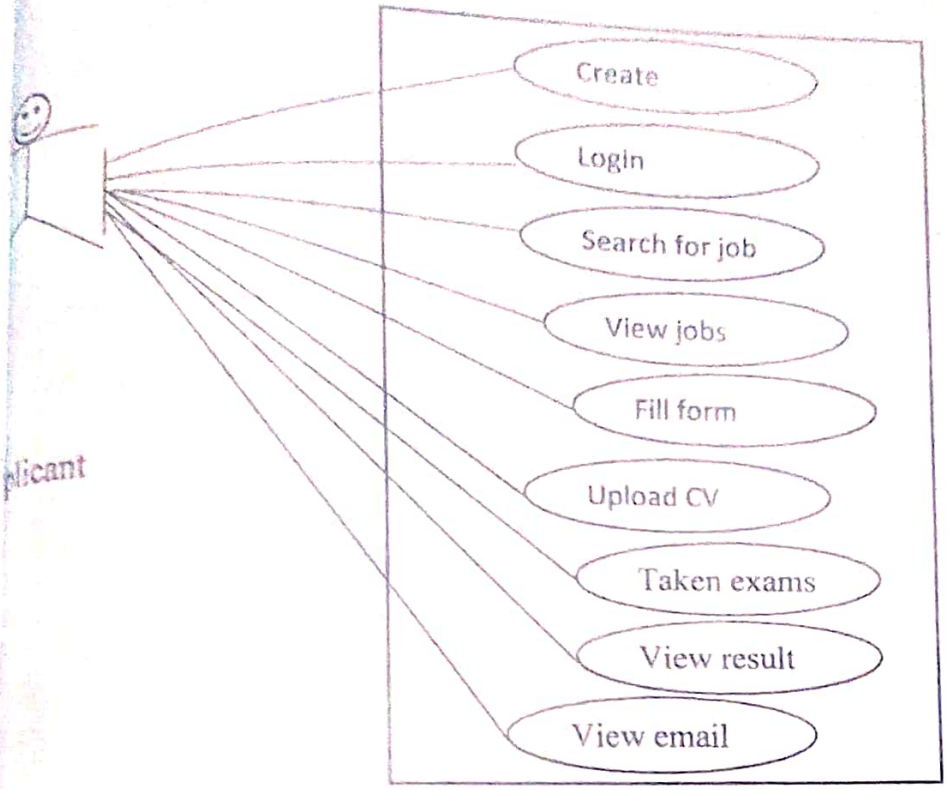


Figure 3.7 A Use-Case Model of the Proposed System

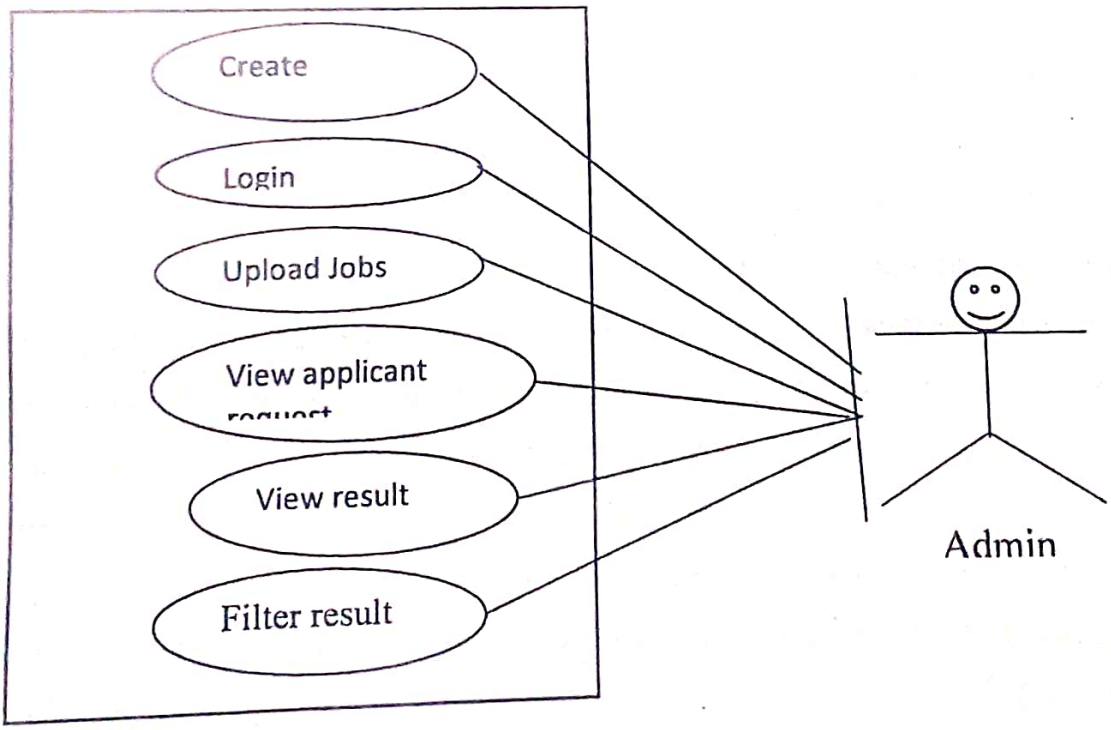


Figure 3.7 A Use-Case Model of the Proposed System

Forgot Password – If the registered user or the registered company forgets their password, they can retrieve their passwords through e- mails.

View all jobs -Once the user logs in to his/her account, they can view all the available jobs.

View applied jobs -Once the user logs in, he can view all his applications.

Search Jobs - User can do advanced search to search for specific jobs with his specific requirements. Upload CV- User can upload their resume in specified file format to this job portal.

Apply -Users can apply to desired jobs.

Update profile - Users or Companies can edit their profile information.

View approved jobs – Company can view the jobs approved by the admin.

View applied jobs -Company can view the applications.

Download CV- Company can also download resumes and check applications.

3.4.3 Sequence diagram of the proposed

The sequential flow of a system along with its sub system is pictorially represented by the sequence diagram. As the following diagram is an overall system sequence diagram, sequence diagrams can also be drawn at the modular level for every component in the system. Sequence diagrams emphasize more on the system requirements than on the system design. It focuses more on the sequence of messages delivered just after a sequence of activity occurs. Overall a sequence diagram helps in modelling and documenting how a system should behave and helps in validating the logical behavior of complex operations and functions. . Once the applicant wants to login, he first should register himself/herself to the portal, then reach his homepage. There the user can view all jobs, make an advanced search for the desired jobs, upload his resume to the

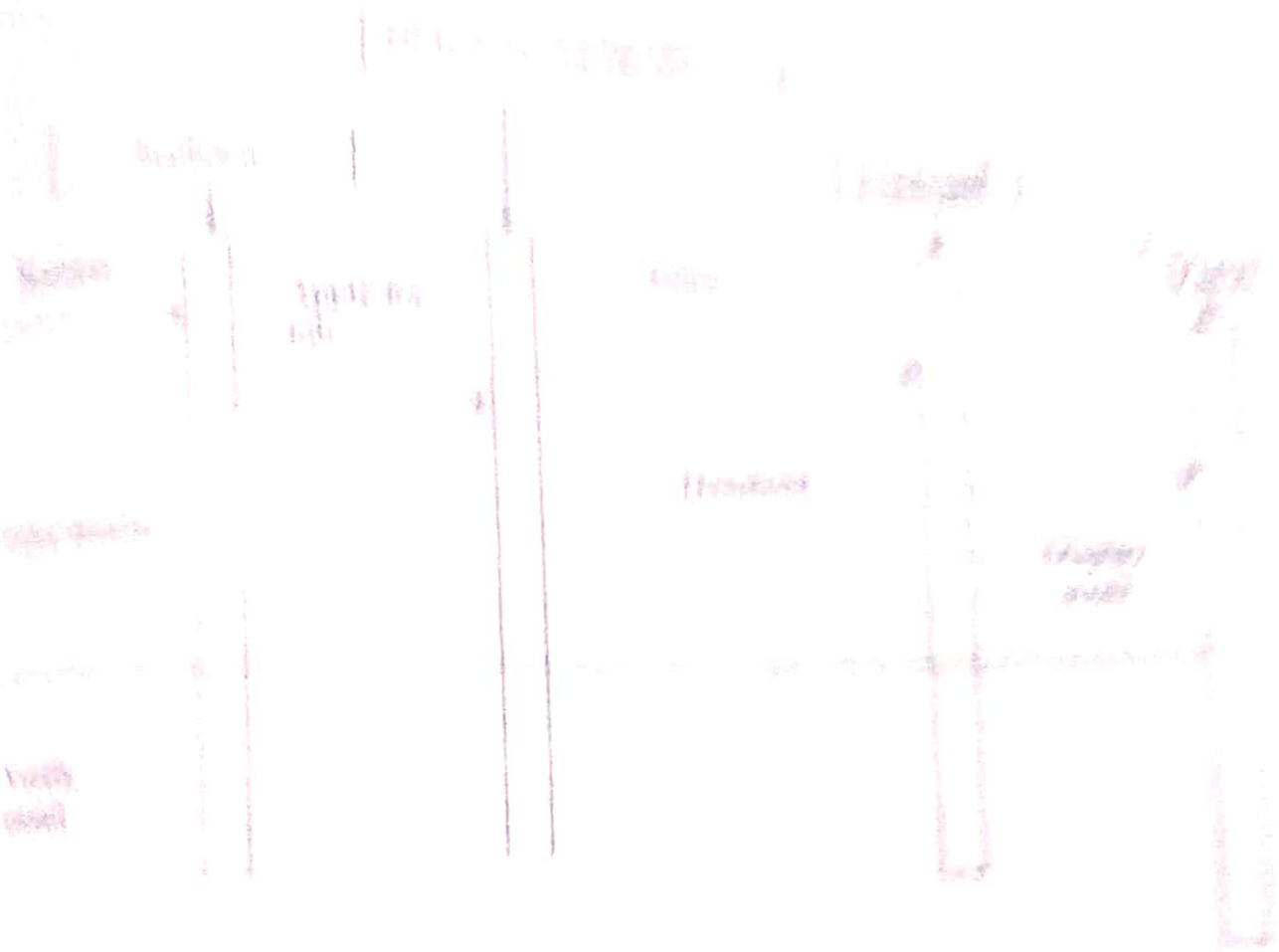
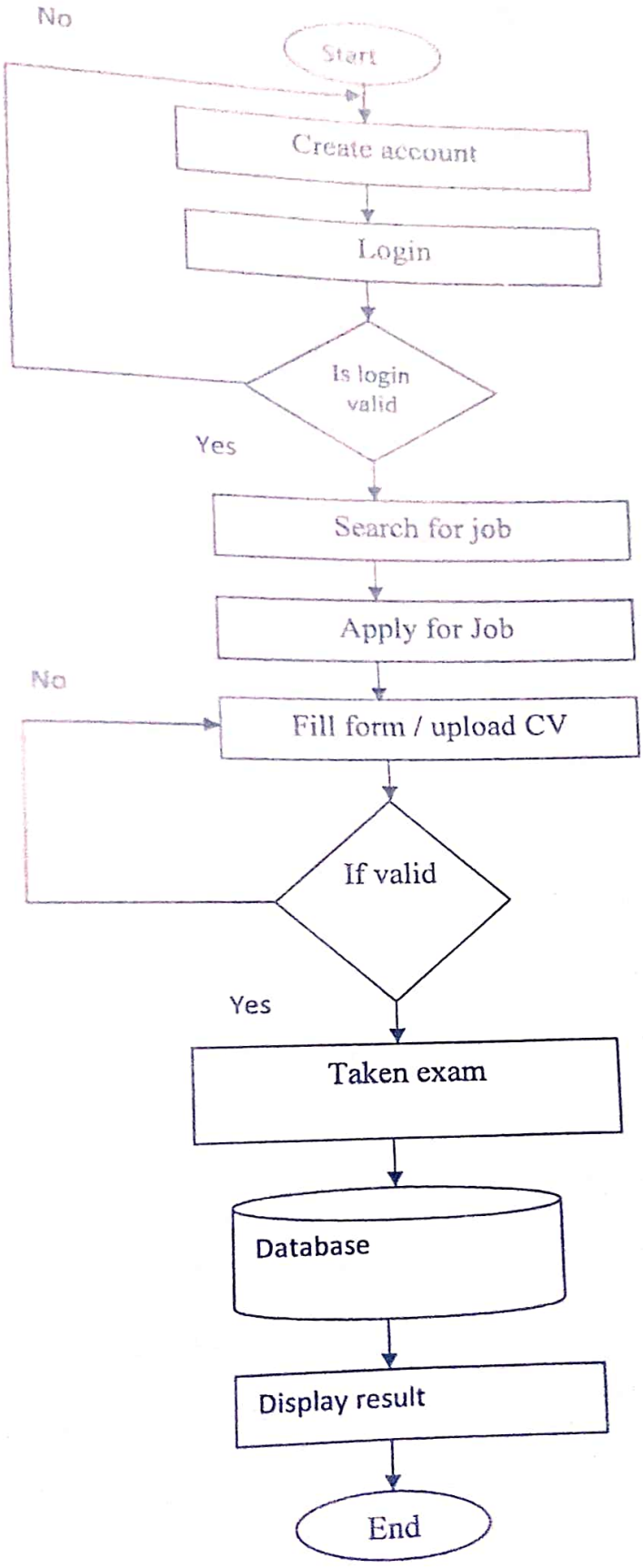


Figure 4.9 Sequence Diagram of the proposed system

4.4.4 Activity Diagram of the Proposed System

Activity Diagram is also one important UML diagram that gives the flow of execution of the system. It is not being exact flowcharts activity diagrams have some capabilities like branching or swim lanes or indicating parallel flows. It is a pictorial representation of the different activities of a system, giving the wholistic view. A concept of forking and joining is used inside the activity diagrams to show the activity of the different components of the system. A function performed by the system can be called an activity of the system. Once we have got a mental layout of the entire flow, we proceed to drawing the activity Diagram.


No
Start
Create account
Login
Is login valid
Yes
Search for job
Apply for Job
No
Fill form / upload CV
If valid
Yes
Taken exam
Database
Display result
End

3.4.3 High Level output put model

The output design shows the display result after user has query the system. After the applicant meet up the requirement

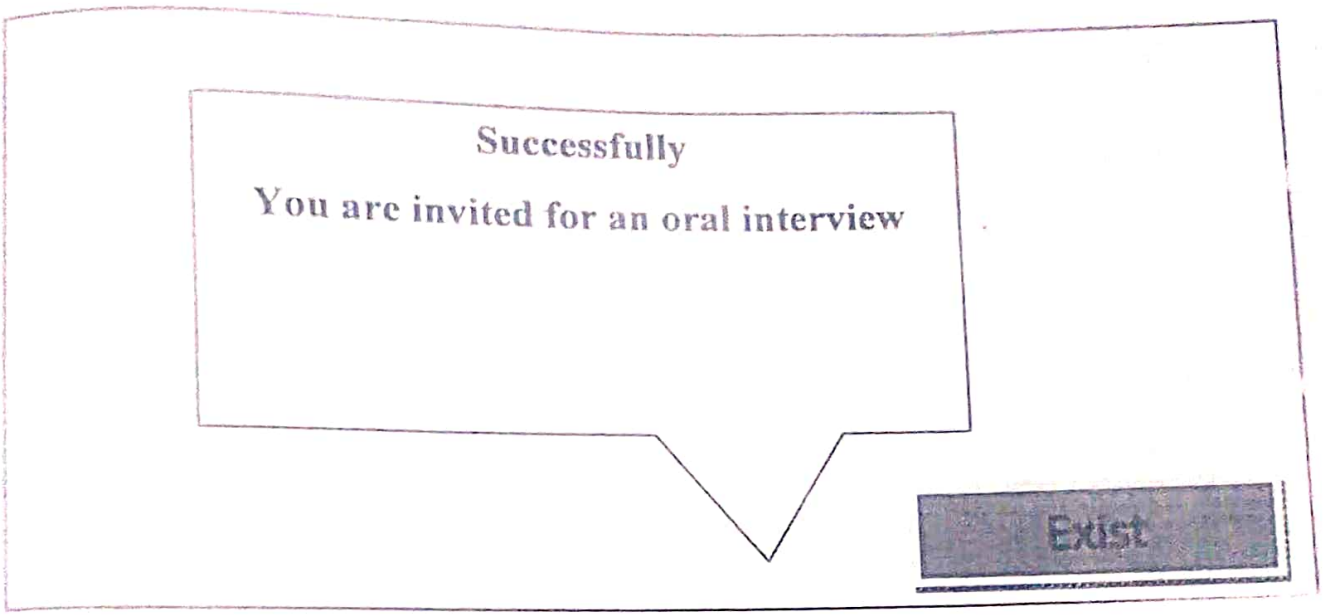


Figure 3.10 Output design of the proposed system

3.5 Database Design of the proposed System

A good database design is the backbone of a good web application. We used MySQL Workbench as the database tool and MySQL as the database language. We also created four tables in the database which was identified to make the application work well: exam question,applicant's registration table, login, successfully candidate table and admin table. The other field is called the password. Here password has been encrypted by AES encryption strategy so build a secure and robust database, such that at no point of time any user can get hold of the password except the admin and there is never a security breach. Job: This table contains details about the jobs that are posted by the company and both approved/disapproved by the admin by a special flag column called status.

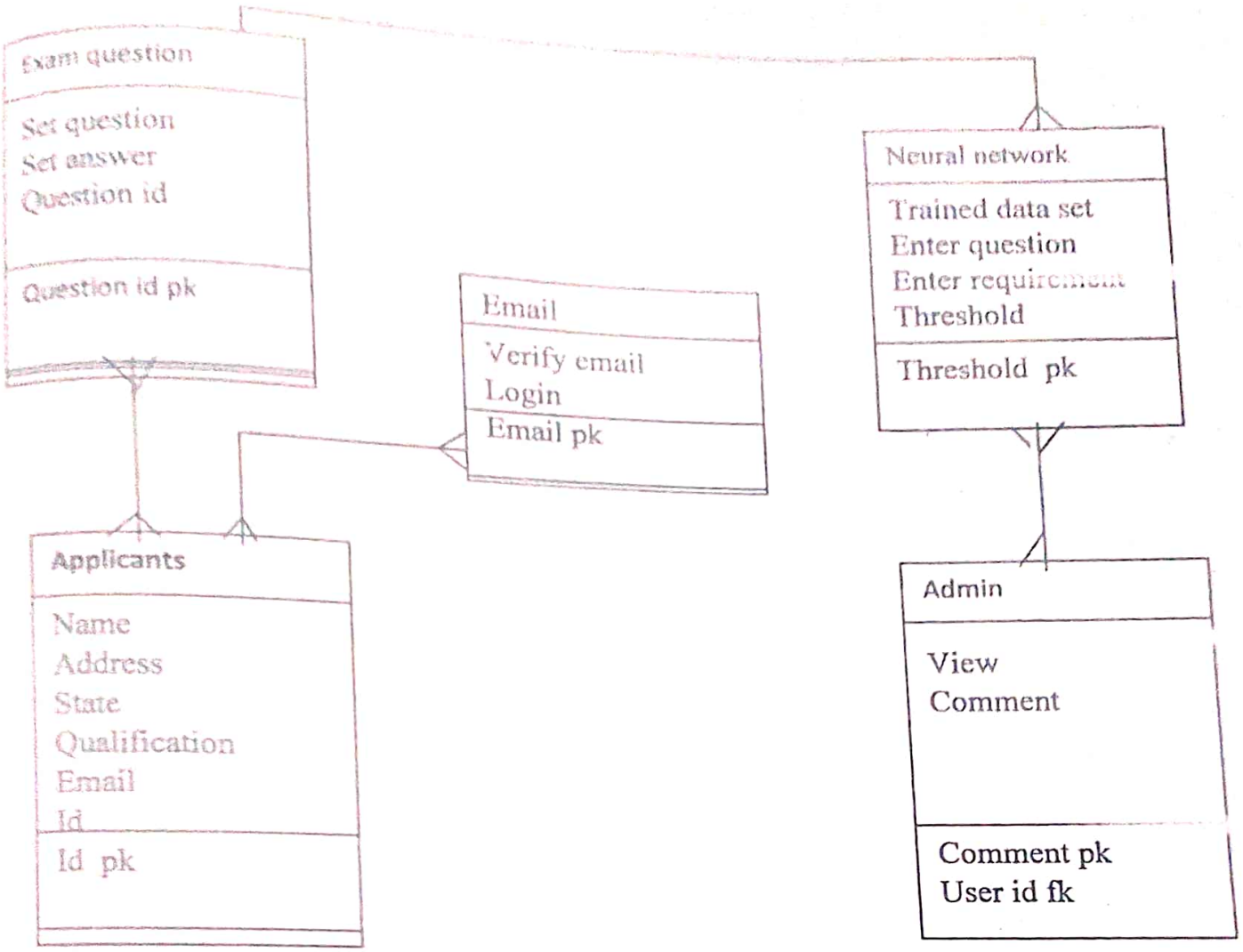


Figure 3.11 Logical Data Model

3.6 Security mechanism of the proposed system

After the security requirements have been identified, we proceed to the design phase of the security engineering process. Data cryptography is required for the prevention of the intrusion of party post on the social media. In cryptography, encryption is the process of encoding information. This process converts the original representation of the information, known as plaintext, into an alternative form known as ciphertext. Ideally, only authorized parties can decipher a ciphertext back to plaintext and access the original information.

CHAPTER FOUR

SYSTEM IMPLEMENTATION

4.1 Choice of Programming Language

Hyper preprocessor (PHP) was used to implement this system because, it has high-performance graphic and statistic computing, it is object-oriented and it is good for modeling of systems. Hyper preprocessor (php) is also used for analytic simulation experiments and synthesizing of data. It integrates visualization, computation and programming environment, where problems and solutions are expressed in familiar mathematical notation. Hyper preprocessor (php) can be used for a large number of things, including software development, mobile applications, web application and large systems development.

4.2 Implementation Testing

We tested the implemented software for the following purposes,

Functionality Testing

We carried functionality testing on the implemented system to check if the initial build works as per its system design and analysis. This includes form validation, cookie and session testing, HTML and CSS validation, and database connection check-up.

Interface testing

The interface test focused on three key areas which are the application server, web server, and database server. And they all passed the test cases.

Compatibility and performance Testing

In compatibility testing, we check whether or not our web design is compatible with a variety of browsers and devices. This includes browser and OS compatibility testing, along with mobile browsing and printing options testing. Our implemented system look great in all browsers and compatible with all leading operating systems. And lastly, we carried out performance testing and our implemented system is scalable and capable to withstand multiple users.

4.3 Results and Discussion

The study achieved the following results;

1. Develop an online recruitment system.

2. Design a web base online job exam system and result display.

3. Development an automated applicants job ranking system using machine learning Algorithms.

4. Implement the system using a high level programming language called PHP.

The new system is an develop an e-recruitment model for teachers using Machine Learning Algorithm. The new system with the help of Machine Learning Algorithm compared to other model of employment or employee management system is positively impacting productivity, communication, creativity, relationships and problem solving in terms of employment management system. The system works as a standalone, where employee gets feedbacks on any activity he performs rather than other system that requires human effort to send feedback.

The system made use of one database called the employee table with different tables to hold applicant and admin information, this database will be able to store millions of data compare to the existing system database. In this system the criteria used in measuring the competence of employment status is the immediate online exam that the applicant will participate to determine

his eligibility for employment while other the existing system uses personal interview to assess applicant. . The new system developed is faster and accurate in facilitating employment procedures. The existing system is slow and prone to errors since it does not assess applicant based on their performance through a cooperate exam, it rather uses human judgmental approach which may lead to corruption and nepotism in an organization. another aspect that give this system an advantage over the existing system, the applicant knows his stand after the exam because the result will be displayed after the exam immediately and saved on his dashboard. Before the system was hosted software testing was carried out to check if there is any bugs. Unit testing is important because we can find more defects at the unit test level.

4.4 Documentation

To install the job app, the following steps are required;

1. Extract the main job zip file.
2. Search for the folder **main files** in the main theme folder.
3. Now compress the **main files** folder and upload the **main_files.zip** file into your server using FTP or Cpanel. Extract this and use. Or user Xampp local server
4. Create mysql database using cpanel or your hosting providers' system. Then import the job.**sql** file (that you got into the job folder) into your created database.
5. Now you will have to edit the configuration file. And to do this go to: **admin >inc>config.php** and open it with a text editor. Change the information to your local configurations. Such as server-Name/hostname, user, password and database name

4.5 System Setup and User Manuel

This is the systems configuration and the setup of the system on which the project work is carried out. This involves both the hard ware and software features of the system.

4.5.1 Hardware Requirements

The following are hardware requirements for the implemented system;

i. Dual Core Processor: For best performance, we recommend a dual core processor like core i3, core i5 as minimum requirement.

ii. Ethernet connection (LAN) or a Wireless Adapter (Wi-Fi): The system needs internet connection to work.

iii. Memory (RAM):2GB RAM capacity and above will enable the system run smoothly

iv. Processor speed: 2.0 GHz and above

v. Operating System: 32-bit or 64bits

vi. Hard disk: Size of 60GB and above

vii. file system: NTFS file system is required for the hard disk.

4.5.2 Software Requirements

The following are the software requirements of the system;

i. window 7 and higher or Mac OS X 10.3 Panther and above

ii. MYSQL Server

iii. Text Editor such as Visual studio code

iv. Xamp/Wamp

v. Google Chrome web browser is recommended

4.6 Interface design of the proposed system

the way this application should work and used must be followed strictly in order to make proper usage of it. The system is an open system that predicts internal generated revenue though it requires the user to register first before he or she can access the platform.

The users: the users are the people that will make use of the application, they are to register (i.e. fill the applicant form) and login to the site to begin the process of employment by taking exam.

Home page: the home page is the first page the user will come across when visiting the site, then he can view vacant position and apply for any by registering

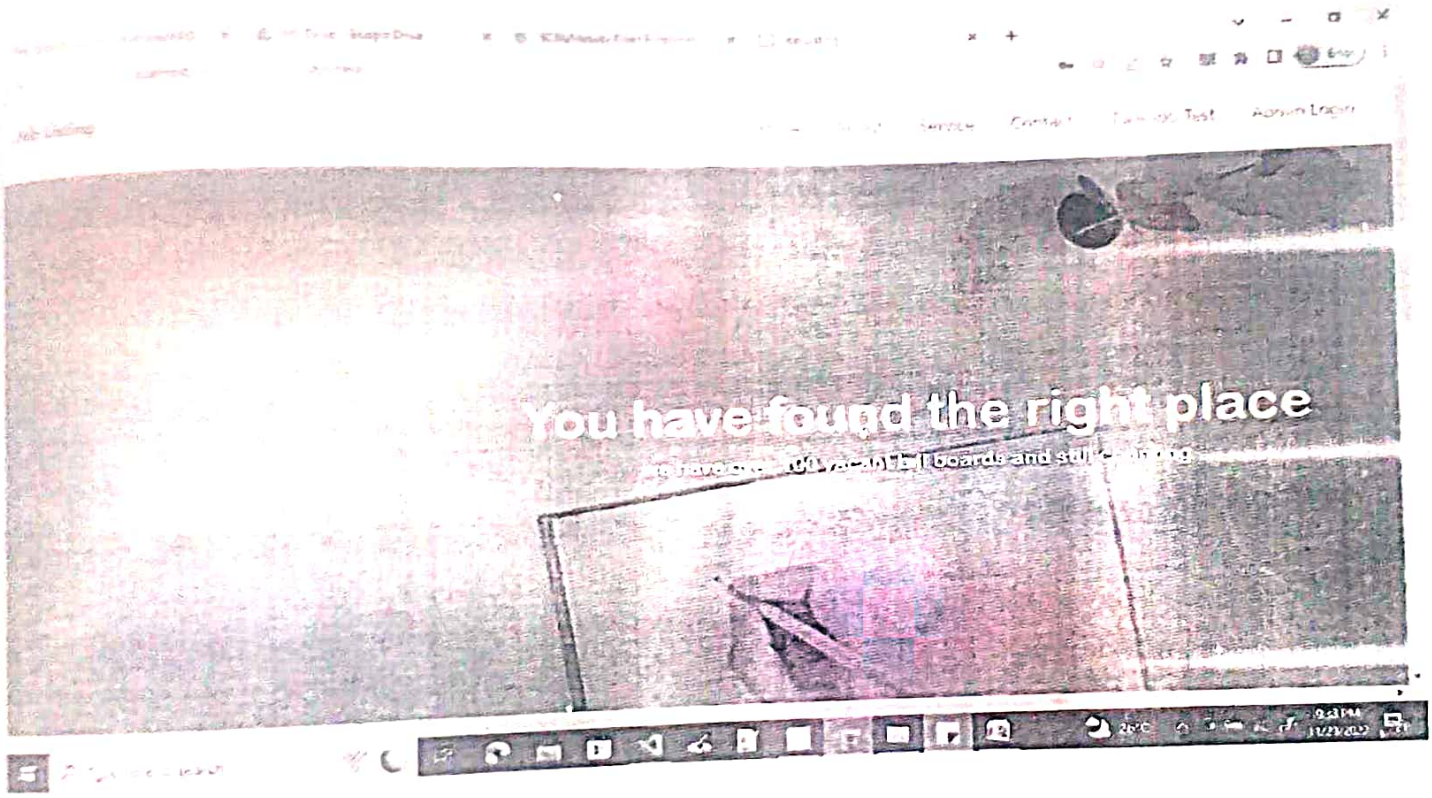


Figure 4.1 index Page

The registration page: The registration page provides the user an interface to register or subscribe as one of the applicant in the application, it contain a single form that contain the following details Firstname, gender, username, password, email and phone number. The system works in as an expert human it generate exam number to every applicant after registration.

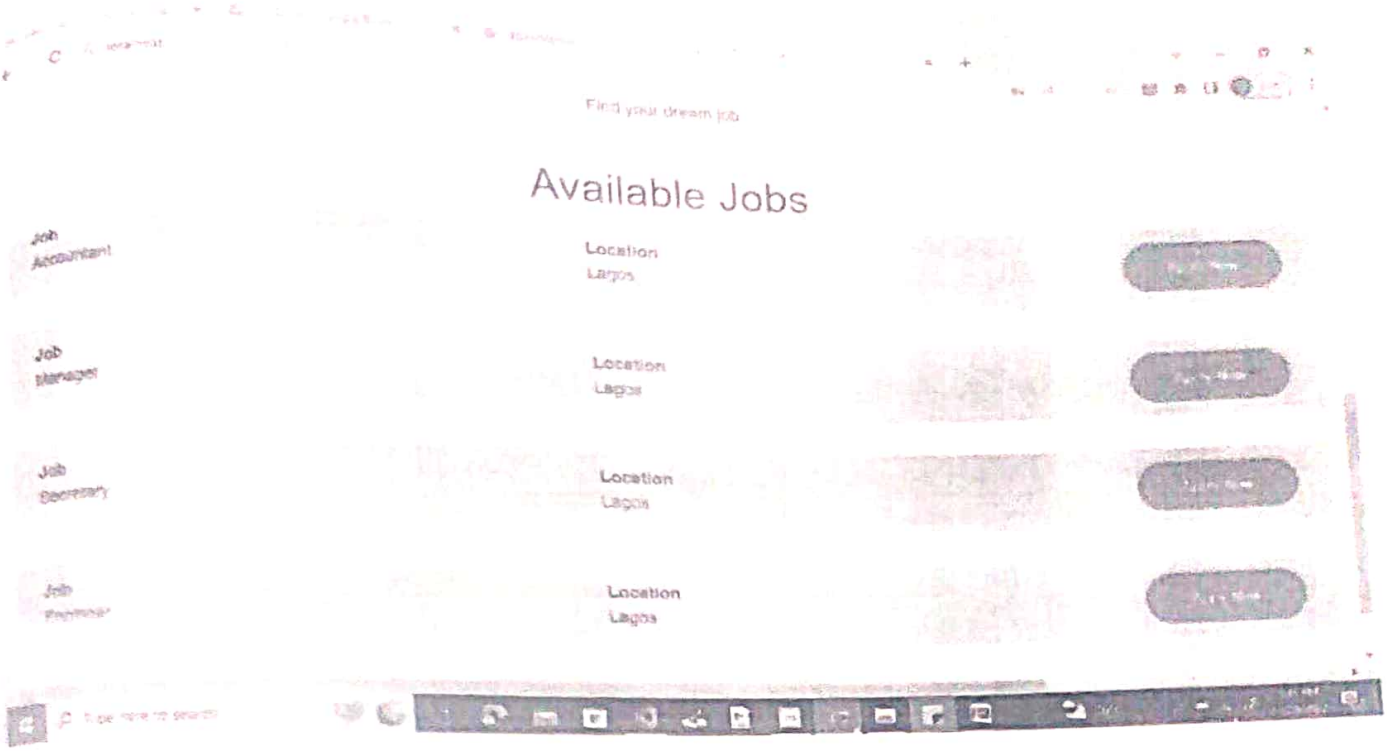


Figure 4.2 Job Page

The login page: the login page is another page that allows or denies access to the platform, it is a page that decides entrance into the employment portal this is done when the user enters the username and password

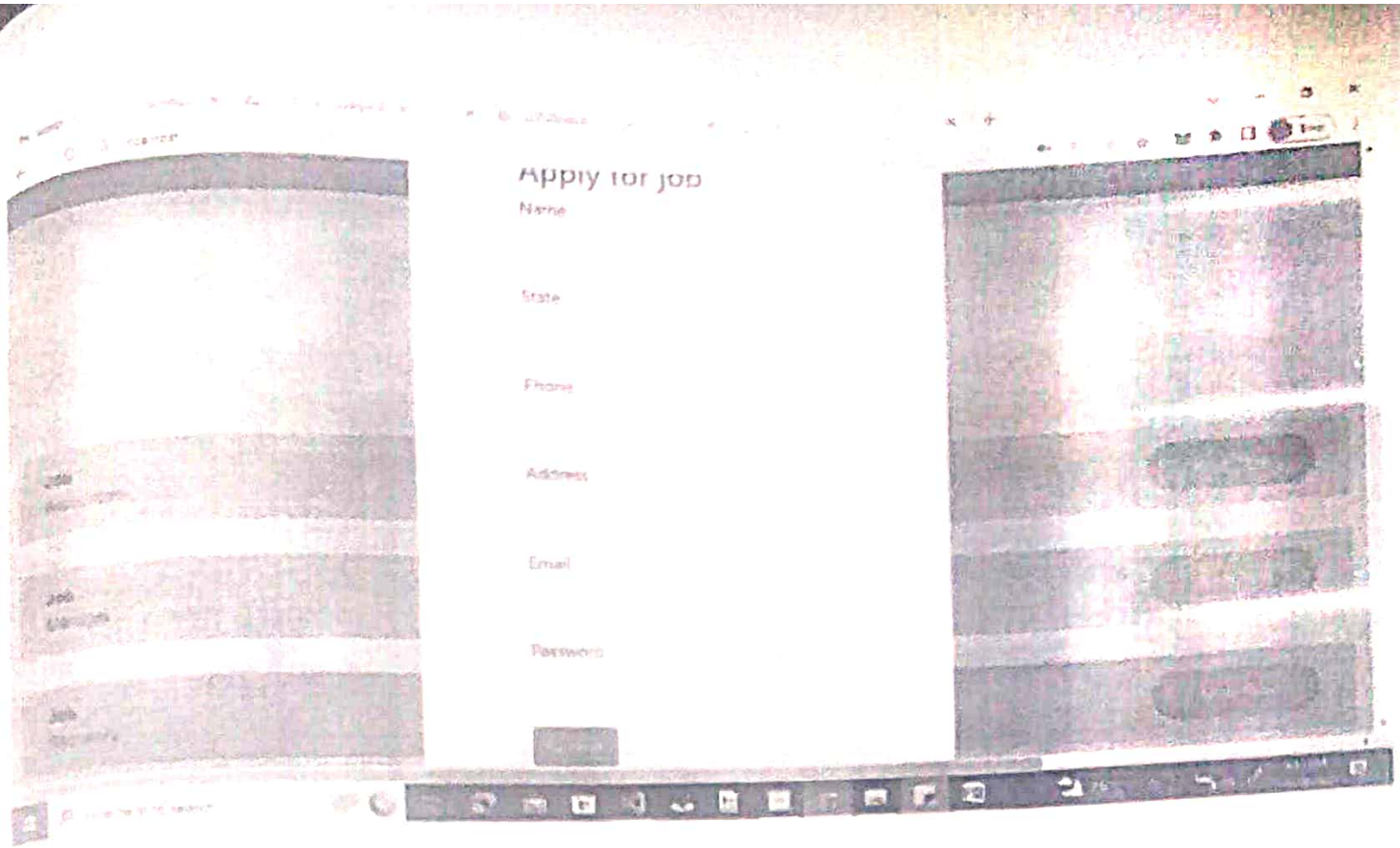


Figure 4.3 Registration Page

The Profile page: This page contain four major component that lead to the information of the applicant his or her profile, educational background, employment eligibility status and employment status also a link to take a test or exam.

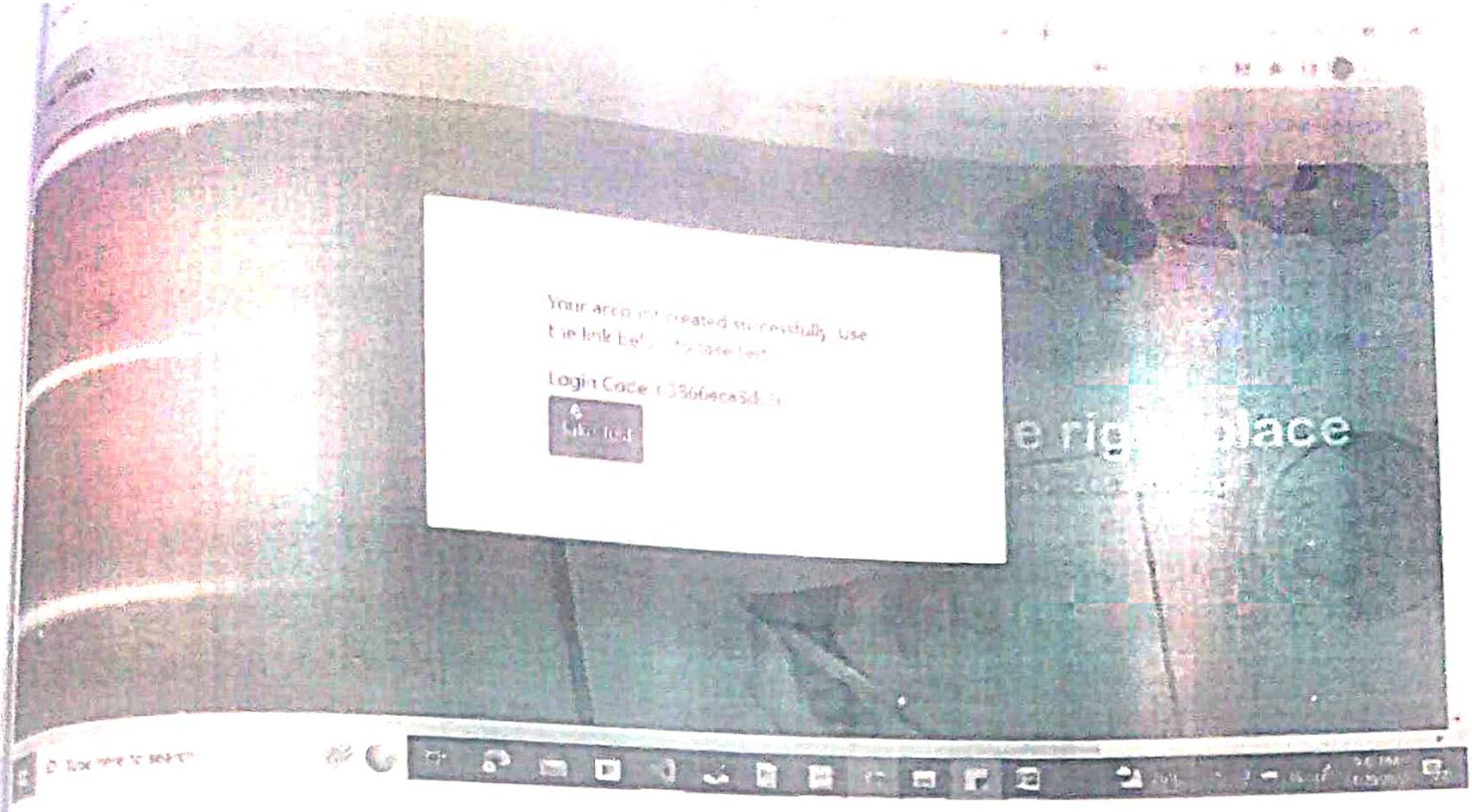


Figure 4.4 Apply Profile Page

Exam login page: the exam login page is another level of authentication to check if the applicant has taken the exam earlier, if it finds out that the user has already taken the exam, the system will automatically logout the applicant no matter how many times he tries.

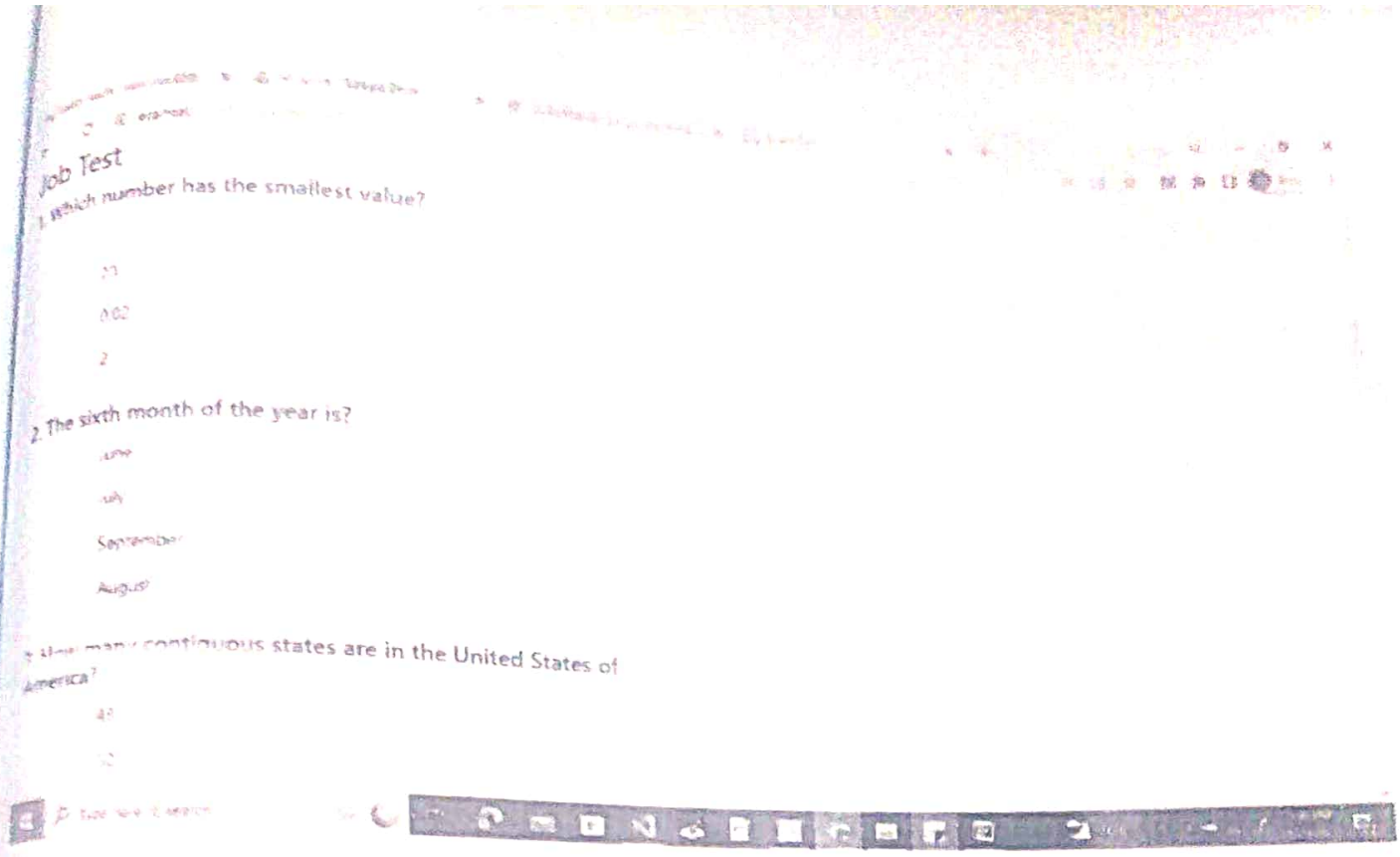


Figure 4.5 Exam Page

The List of Applicant: this is the list of applicant from the admin viewing page after a successful login. The page some function buttons for admin to view and update the entire process of employment by clicking on the profile button of his choice

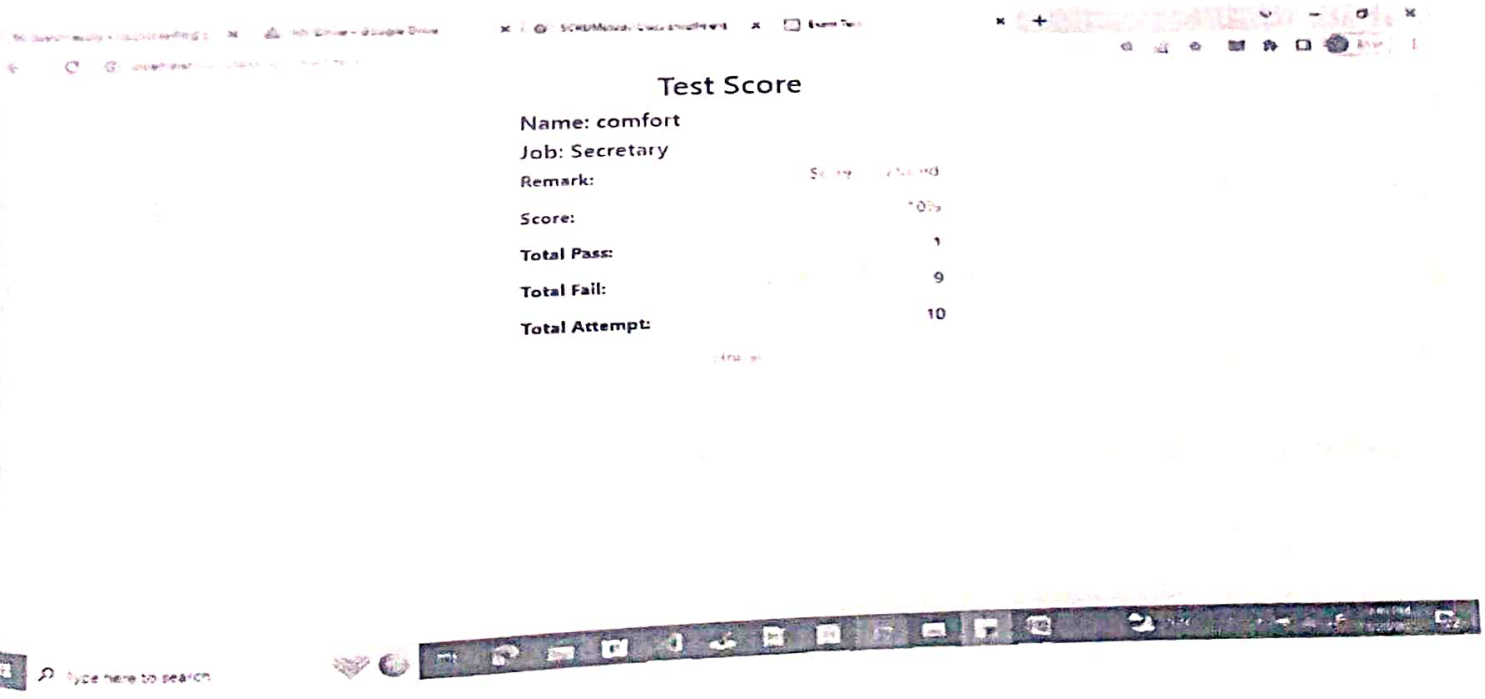


Figure 4.6 Result Page

CHAPTER FIVE

SUMMARY AND CONCLUSION

5.1 Summary

The study achieved the following results;

1. Develop an online recruitment system.
2. Design a web base online job exam system and result display.
3. Development an automated applicants job ranking system and Implement the system using a high level programming language called PHP.

The new system is an develop an e-recruitment model for teachers. It has been observed that the e-recruitment process involves the stages such as searching the job folder, assessing and short listing candidates, final decision of the recruiting managers, and quality of hiring through online recruitment. The advantages of the e-recruitment process have also been reviewed, which include reduced recruitment costs (including time and money), enhanced corporate image, clear communication, broader search, standardisation of recruitment procedures, and wider reach to job candidates. In addition, the process faces certain challenges, such as an increased number of unsuitable job applicants, discrimination and diversity issues, and alignment issues. Although adequate literature sources are available on the benefits and challenges of the e-recruitment process and AI-based e-recruitment systems, there is a lack of literature on the clear process of e-recruitment and correct procedures, which present the scope for further research in this domain.

5.2 Conclusion

In this project we have presented a novel approach for ranking job applicants in online recruitment systems. The proposed scheme relies on objective criteria extracted from the applicants' LinkedIn profile and subjective criteria extracted from their social presence, to estimate applicants' relevance scores and infer their personality traits. Candidate ranking is based on machine learning algorithms that learn the scoring function based on training data provided by human recruiters. An integrated company oriented e-recruitment system was implemented based on the proposed scheme. Our system was employed in a large-scale recruitment scenario, which included three different offered positions and 100 job applicants. The application of our approach revealed that it is effective in identifying the job applicants' extraversion and ranking them accordingly

5.3 Recommendations

This project was conducted to investigate the application of machine learning in recruitment and its implications. It helps researchers and managers to consider in which parts of the recruitment process machine learning can be applied the best while receiving as high positive implications as possible. Furthermore, it was found from the empirical findings of this project that the amount of companies applying machine learning in their recruiting is relatively low. This project contributes to companies that are either at an early stage of implementing machine learning or considering whether to implement it at all. This project discussed the benefits, challenges and implications to organizational effectiveness and hence companies that are interested in using machine learning in their recruitment can benefit from this project.

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entura, M.G.G. and Bringula, R.P. (2013) Effectiveness of Online Job Recruitment

System: Evidence from the University of the East. IJCSI International Journal of

Computer Science Issues, 10, 152-159.

Haddadi, L., et al. (2017). E-recuitment support system based on MOOCS. Proceedings of InternationalConference on Mathematics and Information Technology.

Appendix A

```
@include('header')

<div id="main" class="clearfix category-page">
  <div class="container">
    <div class="breadcrumb-section">
    <!-- Breadcrumb NavXT 6.1.0 -->
<span property="itemListElement" typeof="ListItem"><a property="item" typeof="WebPage"
itle="Go to Woosquare." href="{{ url('') }}" class="home"><span
<span property="itemListElement" typeof="ListItem"><a property="item" typeof="WebPage
de="Go to Advertisements." href="../../trade_ad/index.html" class="post post-trade_ad-
rchive"><span property="name">Advertisements</span></a><meta property="position"
ntent="2"></span> &gt; <span property="itemListElement" typeof="ListItem"><span
roperty="name">Cars &amp;amp; Vehicles</span><meta property="position" content="3"></span>
                                                    </div>

iv class="row">
iv class="col-md-12">
<header>
  <h1 class="page-title">Category: Cars &amp;amp; Vehicles</h1>
</header>
iv>
iv>
iv class="banner">
  <div class="banner-form">
      <form id="cat_search" action="{{ url('search') }}" method="get">
        <div class="dropdown category-dropdown"><select id="edit-field-category"
e="cat_id" class="form-select selectpicker category-change" >
          option value="All" selected="selected">Select Category</option>
          <option value="15">Books &amp;amp; Magazines</option>
          <option value="18">-Children&amp;#039;s</option>
          <option value="21">-Equipment</option>
          <option value="27">-Instruments</option>
          <option value="51">-Travel Events</option>
          <option value="17">Cars &amp;amp; Vehicles</option>
          <option value="59">-Auto Parts &amp;amp; Accessories</option>
          <option value="63">-Bicycles and Three Wheelers</option>
          <option value="64">-Cars &amp;amp; Buses</option>
          <option value="34">-Motorbikes &amp;amp; Scooters</option>
```

```
<option value="20">Electronics &amp;amp; Gadgets</option><option value="66">-
Accessories</option><option value="67">-Computers &amp;amp;
</option><option value="33">-Mobile Phones</option><option value="39">-Other
</option><option value="52">-TV &amp;amp; Video Accessories</option><option value="53">-TV
&amp;amp; Video Accessories</option><option value="22">Fashion &amp;amp;
</option><option value="60">-Bags</option><option value="65">-
</option><option value="24">-Health &amp;amp; Beauty Products</option><option
="47">-Shoes &amp;amp; Footwear</option><option value="57">-Watch</option><option
="25">Hobby, Sport &amp;amp; Kids</option><option value="36">-Music, Books &amp;amp;
</option><option value="37">-Musical Instruments</option><option value="50">-
Equipment</option><option value="26">Home Appliances</option><option
="62">-Bathroom &amp;amp; Garden</option><option value="70">-Electricity,
C</option><option value="40">-Other Home Items</option><option value="48">-
</option><option value="28">Job Openings</option><option value="68">-Customer
</option><option value="30">-Marketing</option><option value="45">-Sales
</option><option value="31">Matrimony Services</option><option value="74">-
</option><option value="78">-Love &amp;amp; Care</option><option value="72">-Gift
</option><option value="32">Missellaneous</option><option value="35">Music &amp;amp;
</option><option value="73">-Handicrafts</option><option value="69">-
</option><option value="61">-Bass Guitar</option><option value="76">-
</option><option value="71">-Flute</option><option value="80">-Other
</option><option value="41">Pets &amp;amp; Animals</option><option value="81">-Pets
&amp;amp; Animal Accessories</option><option value="58">-Apartments &amp;amp;
="44">Real Estate</option><option value="77">-Lands
</option><option value="75">-Houses &amp;amp; Plots</option><option value="79">-Other
&amp;amp; property</option></select></div>
                <div class="dropdown category-dropdown language-dropdown">
                    <select id="edit-field-category" name="ads_state" class="form-select
selectpicker category-change" >
                    <option value="All" selected="selected">All State</option>
                    @foreach($states as $state)
                      <option value="{{ $state->id }}">{{ $state->name }}</option>
                    @endforeach
                  </select>
                </div>
                <div class="dropdown category-dropdown language-dropdown">
                    <select id="edit-field-category" name="ads_city" class="form-select
selectpicker category-change" >
                    <option value="All" selected="selected">All City</option>
                    @foreach($cities as $city)
                      <option value="{{ $city->id }}">{{ $city->name }}</option>
                    @endforeach
                  </select>
                </div>
```

```
            <input type="text" id="search_field" class="form-control" placeholder="Type
your keyword..." name="keyword"><button type="submit" name="search_ad" class="form-
control" value="Search">Search</button>
            </form>
        </div>
<div class="cateogory-info">
<div class="row">
 <div class="col-sm-8 col-md-7 col-md-push-3 col-sm-push-4 tr-sticky">
   <div class="theiaStickySidebar">
     <div class="my-tr-item section recent-ads">


<!-- tr-item-->
<div class="moreBox tr-item row">
<!-- item-image -->
<div class="item-image-box col-sm-4">
<div class="item-image">
                    <a                href="../../trade_ad/tvs-apache-rtr-2016/index.html"><img
width="200"  height="152"  class="img-responsive"  src="{{  url('public/uploads/2017/05/8-
200x152.jpg') }}" alt="TVS Apache RTR 2016"></a>
                </div><!-- item-image -->
</div>

<!-- rending-text -->
<div class="item-info col-sm-8">
<!-- tr-item-info -->
<div class="tr-item-info">
                    <h3 class="item-price">₦199                                                    </h3>

  <h4  class="item-title"><a  href="../../trade_ad/tvs-apache-rtr-2016/index.html">TVS  Apache
RTR 2016</a></h4>

  <div class="item-cat">
            <span><a  href="index.html">Cars  &amp;  Vehicles</a></span>  /  <span><a
href="../motorbikes-scooters/index.html">Motorbikes          &amp;          Scooters</a></span>
</div>
</div><!-- tr-item-info -->
  <div class="tr-ad-meta">
  <div class="meta-content">
    <span class="dated"><a href="#">28 May 7:43 am</a></span>
            <a    href="../../ad_condition/used/index.html"    class="tag"><i    class="fa    fa-
tags"></i> Used</a></a>          </div>
  <!-- item-info-right -->
  <div class="user-option pull-right">
```

```
<a href="#" data-toggle="tooltip" data-placement="top" title="975 U.S. 1, Walpole, MA,
2 States"><i class="fa fa-map-marker"></i></a>
ment="top" title="administrator"><i class="fa fa-user"></i> </a>
        </div><!-- item-info-right -->
></!-- tr-ad-meta -->

></!-- item-info -->
></!-- tr-item -->


r-item-->
class="moreBox tr-item row">
item-image -->
class="item-image-box col-sm-4">
class="item-image">
                    <a                    href="../../trade_ad/2016-bugatti-veyron-sport-middlecar-
lex.html"><img      width="200"      height="152"      class="img-responsive"      src="{{
public/uploads/2017/06/19-200x152.jpg') }}" alt="2016 Bugatti Veyron Sport"></a>
                  <span class="featured-ad">Featured</span>
 <a      href="#"      class="verified"      data-toggle="tooltip"      data-placement="left"
="Featured"><i class="fa fa-check-square-o"></i></a>
    </div><!-- item-image -->
iv>


- rending-text -->
v class="item-info col-sm-8">
- tr-item-info -->
v class="tr-item-info">
                  <h3 class="item-price">₦800                                    </h3>

<h4      class="item-title"><a      href="../../trade_ad/2016-bugatti-veyron-sport-middlecar-
ndex.html">2016 Bugatti Veyron Sport</a></h4>

<div class="item-cat">
              <span><a  href="../cars-buses/index.html">Cars  &amp;  Buses</a></span>  /
pan><a href="index.html">Cars &amp; Vehicles</a></span>          </div>
div><!-- tr-item-info -->
 <div class="tr-ad-meta">
 <div class="meta-content">
   <span class="dated"><a href="#">06 Jun 7:27 am</a></span>
              <a   href="../../ad_condition/used/index.html"   class="tag"><i   class="fa   fa-
igs"></i> Used</a></a>          </div>
  <!-- item-info-right -->
  <div class="user-option pull-right">
```

```
    <a href="#" data-toggle="tooltip" data-placement="top" title="248 Atlantic Avenue,
ston, MA, United States"><i class="fa fa-map-marker"></i> </a>
                                    <a class="" href="#" data-toggle="tooltip" data-
acement="top" title="administrator"><i class="fa fa-user"></i> </a>
            </div><!-- item-info-right -->
div><!-- tr-ad-meta -->

div><!-- item-info -->
/div><!-- tr-item-->


!-- tr-item-->
div class="moreBox tr-item row">
!-- item-image -->
div class="item-image-box col-sm-4">
div class="item-image">
                        <a                  href="../../trade_ad/hero-splendor-2006/index.html"><img
width="200"  height="152"  class="img-responsive"  src="{{  url('public/uploads/2017/06/12-
200x152.jpg') }}" alt="Hero splender 2006"></a>
                </div><!-- item-image -->
</div>

<!-- rending-text -->
<div class="item-info col-sm-8">
<!-- tr-item-info -->
<div class="tr-item-info">
                    <h3 class="item-price">₦12,000                                                    </h3>

  <h4 class="item-title"><a href="../../trade_ad/hero-splendor-2006/index.html">Hero splender
2006</a></h4>

  <div class="item-cat">
                <span><a       href="../motorbikes-scooters/index.html">Motorbikes       &amp;
Scooters</a></span>  .       </div>
</div><!-- tr-item-info -->
  <div class="tr-ad-meta">
  <div class="meta-content">
    <span class="dated"><a href="#">13 Jun 7:00 am</a></span>
                <a    href="../../ad_condition/used/index.html"    class="tag"><i    class="fa    fa-
tags"></i> Used</a></a>          </div>
  <!-- item-info-right -->
  <div class="user-option pull-right">

        <a  href="#"  data-toggle="tooltip"  data-placement="top"  title="575  Boylston  Stree
Boston, MA, United States"><i class="fa fa-map-marker"></i> </a>
```

```
                                    <a    class=""    href="#"    data-toggle="tooltip"    data-
acement="top" title="administrator"><i class="fa fa-user"></i> </a>
            </div><!-- item-info-right -->
div><!-- tr-ad-meta -->

div><!-- item-info -->
div><!-- tr-item-->


!-- tr-item-->
div class="moreBox tr-item row">
!-- item-image -->
div class="item-image-box col-sm-4">
div class="item-image">
                        <a      href="../../trade_ad/atlas-upland/index.html"><img      width="200"
eight="152" class="img-responsive" src="{{ url('public/uploads/2017/06/18-200x152.jpg') }}"
t="Atlas Upland"></a>
                    <span class="featured-ad">Featured</span>
    <a       href="#"       class="verified"       data-toggle="tooltip"       data-placement="left
le="Featured"><i class="fa fa-check-square-o"></i></a>
        </div><!-- item-image -->
div>

!-- rending-text -->
div class="item-info col-sm-8">
!-- tr-item-info -->
div class="tr-item-info">
                    <h3 class="item-price">₦350                                                    <span
lass="negotiable">(Negotiable)</span>
                </h3>

 <h4            class="item-title"><a            href="../../trade_ad/atlas-upland/index.html">Atlas
pland</a></h4>

 <div class="item-cat">
            <span><a  href="../bicycles-and-three-wheelers/index.html">Bicycles and Three
Wheelers</a></span>          </div>
div><!-- tr-item-info -->
 <div class="tr-ad-meta">
 <div class="meta-content">
  <span class="dated"><a href="#">21 Jun 6:58 pm</a></span>
            <a    href="../../ad_condition/new/index.html"    class="tag"><i    class="fa    fa
gs"></i> New</a></a>                </div>
 <!-- item-info-right -->
 <div class="user-option pull-right">
```

```
    <a  href="#"  data-toggle="tooltip"  data-placement="top"  title="504  Massachusetts
venue, Lexington, MA, United States"><i class="fa fa-map-marker"></i> </a>
                                    <a    class=""    href="#"    data-toggle="tooltip"    data-
acement="top" title="administrator"><i class="fa fa-user"></i> </a>
            </div><!-- item-info-right -->
div><!-- tr-ad-meta -->

div><!-- item-info -->
div><!-- tr-item-->


- tr-item-->
iv class="moreBox tr-item row">
- item-image -->
iv class="item-image-box col-sm-4">
iv class="item-image">
                        <a                  href="../../trade_ad/toyota-x-noah-2004/index.html"><img
dth="200"  height="152"  class="img-responsive"  src="{{  url('public/uploads/2017/06/14-
0x152.jpg') }}" alt="Toyota X NOAH 2004"></a>
                </div><!-- item-image -->

div>

- rending-text -->
iv class="item-info col-sm-8">
- tr-item-info -->
iv class="tr-item-info">
                    <h3 class="item-price">₦5,000                                                    <span
ss="negotiable">(Negotiable)</span>
                    </h3>

h4  class="item-title"><a  href="../../trade_ad/toyota-x-noah-2004/index.html">Toyota  X
OAH 2004</a></h4>

div class="item-cat">
            <span><a    href="../cars-buses/index.html">Cars    &amp;    Buses</a></span>

div>
div><!-- tr-item-info -->
div class="tr-ad-meta">
div class="meta-content">
 <span class="dated"><a href="#">21 Jun 7:13 pm</a></span>
            <a    href="../../ad_condition/used/index.html"    class="tag"><i    class="fa    fa
gs"></i> Used</a></a>          </div>
!-- item-info-right -->
div class="user-option pull-right">
```

```
<a href="#" data-toggle="tooltip" data-placement="top" title="409 Massachusette
ue, Lexington, MA, United States"><i class="fa fa-map-marker"></i> </a>
                                <a class="" href="#" data-toggle="tooltip" data-
ment="top" title="administrator"><i class="fa fa-user"></i> </a>
        </div><!-- item-info-right -->
></!-- tr-ad-meta -->

v><!-- item-info -->
v><!-- tr-item-->


- tr-item-->
iv class="moreBox tr-item row">
- item-image -->
iv class="item-image-box col-sm-4">
iv class="item-image">
                        <a                  href="../../trade_ad/toyota-x-noah-2003/index.html"><img
dth="200" height="152" class="img-responsive" src="{{ url('public/uploads/2017/06/14-
0x152.jpg') }}" alt="Toyota X NOAH 2003"></a>
                </div><!-- item-image -->
iv>

-- rending-text -->
iv class="item-info col-sm-8">
-- tr-item-info -->
iv class="tr-item-info">
                    <h3 class="item-price">₦5,000                                    <span
ass="negotiable">(Negotiable)</span>
                </h3>

 <h4 class="item-title"><a href="../../trade_ad/toyota-x-noah-2003/index.html">Toyota X
OAH 2003</a></h4>

 <div class="item-cat">
            <span><a href="../cars-buses/index.html">Cars &amp;amp; Buses</a></span>
</div>
</div><!-- tr-item-info -->
 <div class="tr-ad-meta">
 <div class="meta-content">
  <span class="dated"><a href="#">21 Jun 7:14 pm</a></span>
            <a href="../../ad_condition/used/index.html" class="tag"><i class="fa fa-
tags"></i> Used</a></a>          </div>
 <!-- item-info-right -->
 <div class="user-option pull-right">
```

```
<a href="#" data-toggle="tooltip" data-placement="top" title="542 Old Massachusetts
ave, Lexington, MA, United States"><i class="fa fa-map-marker"></i> </a>
                                <a class="" href="#" data-toggle="tooltip" data-
placement="top" title="administrator"><i class="fa fa-user"></i> </a>
        </div><!-- item-info-right -->
</div><!-- tr-ad-meta -->

</div><!-- item-info -->
</div><!-- tr-item-->


<!-- tr-item-->
<div class="moreBox tr-item row">
<!-- item-image -->
<div class="item-image-box col-sm-4">
<div class="item-image">
                        <a href="../../trade_ad/bmw-companys-finiss-cycle/index.html"><img
width="200" height="152" class="img-responsive" src="{{ url('public//uploads/2017/07/pexels-
photo-141933-200x152.jpg') }}" alt="BMW company's Finiss cycle"></a>
                </div><!-- item-image -->

</div>

<!-- rending-text -->
<div class="item-info col-sm-8">
<!-- tr-item-info -->
<div class="tr-item-info">                                                    <span
                <h3 class="item-price">₦300
class="negotiable">(Negotiable)</span>
                </h3>

  <h4 class="item-title"><a href="../../trade_ad/bmw-companys-finiss-cycle/index.html">BMW
company's Finiss cycle</a></h4>

  <div class="item-cat">
            <span><a href="../bicycles-and-three-wheelers/index.html">Bicycles and Three
Wheelers</a></span>        </div>
</div><!-- tr-item-info -->
  <div class="tr-ad-meta">
  <div class="meta-content">
    <span class="dated"><a href="#">17 Jul 8:40 am</a></span>
            <a href="../../ad_condition/new/index.html" class="tag"><i class="fa fa-
tags"></i> New</a></a>        </div>
  <!-- item-info-right -->
  <div class="user-option pull-right">
```

```
<a href="#" data-toggle="tooltip" data-placement="top" title="198 U.S. 1, Milford, CT,
ited States"><i class="fa fa-map-marker"></i> </a>
                                <a    class=""    href="#"    data-toggle="tooltip"    data-
cement="top" title="administrator"><i class="fa fa-user"></i> </a>
        </div><!-- item-info-right -->
iv><!-- tr-ad-meta -->

iv><!-- item-info -->
iv><!-- tr-item-->


-- tr-item-->
div class="moreBox tr-item row">
!-- item-image -->
div class="item-image-box col-sm-4">
div class="item-image">
                    <a  href="../../trade_ad/toyota-allion-a15-std-pkg-2012/index.html"><img
idth="200"  height="152"  class="img-responsive"  src="{{  url('public/uploads/2017/07/ford-
ustang-auto-vehicle-80465-200x152.jpg')  }}"  alt="Toyota  ALLION  A15  STD  PKG
012"></a>
            </div><!-- item-image -->

</div>

<!-- rending-text -->
<div class="item-info col-sm-8">
<!-- tr-item-info -->
<div class="tr-item-info">                                                    <span
                <h3 class="item-price">₦1,000
class="negotiable">(Negotiable)</span>
                </h3>

 <h4          class="item-title"><a          href="../../trade_ad/toyota-allion-a15-std-pkg-
2012/index.html">Toyota ALLION A15 STD PKG 2012</a></h4>

 <div class="item-cat">
            <span><a    href="../auto-parts-accessories/index.html">Auto    Parts    &amp;
Accessories</a></span>  /  <span><a  href="index.html">Cars  &amp;  Vehicles</a></span>
</div>
</div><!-- tr-item-info -->
 <div class="tr-ad-meta">
 <div class="meta-content">
   <span class="dated"><a href="#">17 Jul 8:40 am</a></span>
            <a    href="../../ad_condition/used/index.html"    class="tag"><i    class="fa    fa-
tags"></i> Used</a></a>        </div>
 <!-- item-info-right -->
 <div class="user-option pull-right">
```

```
<a href="#" data-toggle="tooltip" data-placement="top" title="974 6th Avenue, New
, NY, United States"><i class="fa fa-map-marker"></i> </a>
                                <a class="" href="#" data-toggle="tooltip" data-
cement="top" title="administrator"><i class="fa fa-user"></i> </a>
        </div><!-- item-info-right -->
iv><!-- tr-ad-meta -->

iv><!-- item-info -->
iv><!-- tr-item-->


- tr-item-->
iv class="moreBox tr-item row">
- item-image -->
iv class="item-image-box col-sm-4">
iv class="item-image">
                    <a href="../../trade_ad/tvs-rtr-hyper-2015/index.html"><img width="200"
ight="152" class="img-responsive" src="{{ url('public/uploads/2017/07/vespa-roller-motor-
ooter-cult-159190-200x152.jpg') }}" alt="TVS RTR Hyper 2015"></a>
                <span class="featured-ad">Featured</span>
    <a href="#" class="verified" data-toggle="tooltip" data-placement="left"
le="Featured"><i class="fa fa-check-square-o"></i></a>
      </div><!-- item-image -->
/div>

!-- rending-text -->
<div class="item-info col-sm-8">
!-- tr-item-info -->
<div class="tr-item-info">
                <h3 class="item-price">₦1,500                                    </h3>

 <h4 class="item-title"><a href="../../trade_ad/tvs-rtr-hyper-2015/index.html">TVS RTR
Hyper 2015</a></h4>

 <div class="item-cat">
          <span><a href="../motorbikes-scooters/index.html">Motorbikes &amp;amp;
Scooters</a></span>          </div>
</div><!-- tr-item-info -->
 <div class="tr-ad-meta">
 <div class="meta-content">
  <span class="dated"><a href="#">17 Jul 8:40 am</a></span>
          <a href="../../ad_condition/used/index.html" class="tag"><i class="fa fa-
tags"></i> Used</a></a>          </div>
 <!-- item-info-right -->
 <div class="user-option pull-right">
```

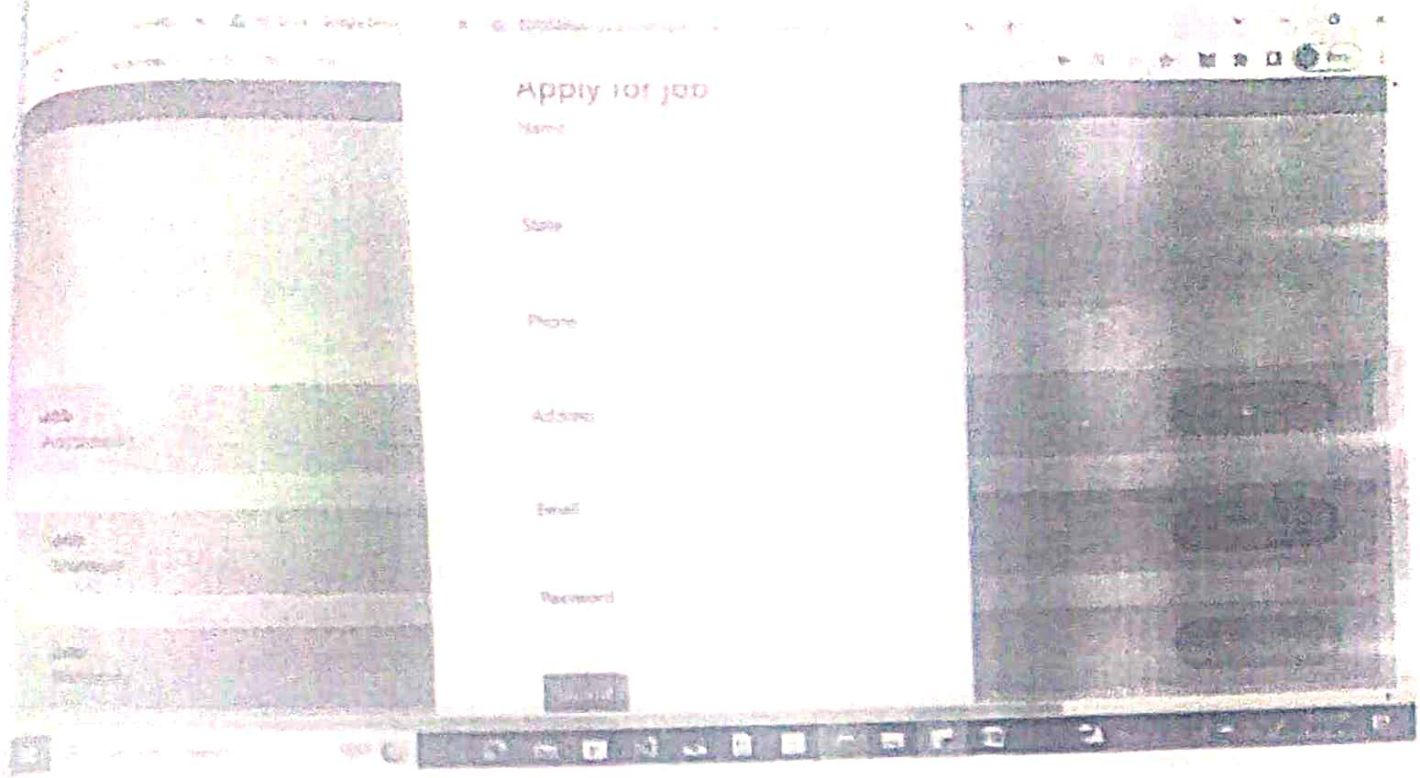
```
    <a href="#" data-toggle="tooltip" data-placement="top" title="1/14 Bedford Avenue,
Bronx, NY, United States"><i class="fa fa-map-marker"></i></a>
                                    <a  class=""  href="#"  data-toggle="tooltip"  data-
placement="top" title="administrator"><i class="fa fa-user"></i></a>
                </div><!-- item-info-right -->
            </div><!-- tr-ad-meta -->

        </div><!-- item-info -->
    </div><!-- tr-item-->


                <div>
                        </div>

    </div>
    <div class="col-md-3 col-sm-4 col-md-pull-7 col-sm-pull-8 tr-sticky">
        <div class="theiaStickySidebar">
                    </div>
    </div>
    <div class="col-md-2 hidden-xs tr-sticky">
        <div class="theiaStickySidebar">
            <div id="ads_image-widget-1" class="widget ads_image">          <div class="hidden-xs
hidden-sm text-center">
    <div class="tr-avt">
        <a href="#">
                    <img  src="{{  url('public/uploads/2017/06/2.jpg')  }}"  class="img-responsive"
alt="">
                </a>
    </div>
</div>
</div>                              </div>
    </div>
</div>
</div>

@include('footer')
```

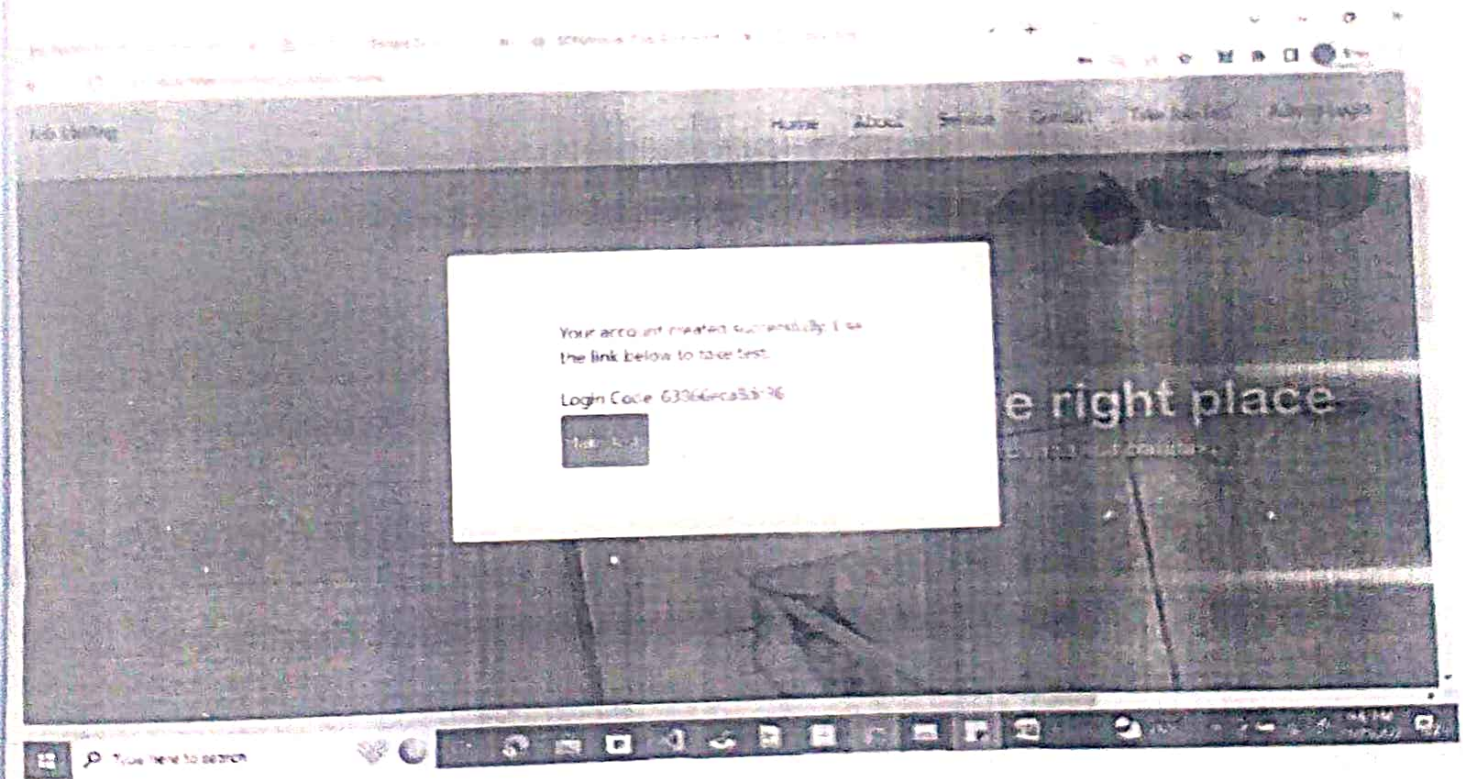
Appendix B

Find your dream job.

Available Jobs

Job Accountant	Location Lagos	Apply Now
Job Manager	Location Lagos	Apply Now
Job Secretary	Location Lagos	Apply Now
Job Engineer	Location Lagos	Apply Now


Apply for job
Name
State
Phone
Address
Email
Password


Home
About
the link below to take test.
Login Code
e right place