

## DESIGN AND IMPLEMENTATION OF AN ENHANCED CAREER PERSONALITY PREDICTIVE SYSTEM

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### **ABSTRACT**

*The study is based on dealing with the issue of Employment which has eaten deep the fabrics of our society and if no addressed would continue. The great need for employing the right person for each job has led to the development of a system that will accurately predict and employ the right candidate for employment based on career analysis thereby improving productivity in the workplace as research through observation has shown that people tend to deliver well if employed based on their field, the new system will help to eradicate the shortcomings of the existing system which is low productivity due to improper employment. In the design of the proposed system options would be made for each of the job applicant to fill in their data including their course to study after which the software would shortlist applicants who are eligible to write an online test based on some criteria as inputted by the admin and thereafter automatically predict and employ the right candidate whose discipline meets the available position and where more than one person qualifies then the system will consider their test scores. The new system will help to deal with shortcomings of the existing employment system which is low productivity due to improper employment decisions (who- know- who mode of employment).*

**Keywords: Career, Personality, HR Manager, Admin**

### **1. INTRODUCTION**

Research shows that the rate at which wrong employment decision affect productivity negatively is high therefore this lead to the proposal of a system known as Enhanced Career Personality Prediction System which is a comprehensive tool to manage the entire employment process of an organization effectively just like performance management, pay roll and other systems. Personality Prediction System would help to manage employment and productivity processes through career analysis. Due to increased competition and focus on changes in the business world, adoption of understanding in individuality and individualism was increased. Organizational change and transformation is one of the factors which contribute to the increase in the importance of the concept of career (Özgen et al., 2005). Because work is a meaningful and important aspect of daily life (Tsaousides and Jome, 2008) and of course, people desire to choose a profession that best fit to their own ability, to work in accordance with the profession and to make a career in the profession throughout the working life thereby increasing productivity, therefore the issue of one's career should not be overlooked in employment ,Studies that adopted Holland's theory and studies from career research paper have found that there is a relationship between personality types and career choice and no doubt this would improve productivity because through observation , people are more productive in what they know how to do best (Momborg, 2004; McPherson and Mench, 2007; and Soo, 2010).

Employing and retaining people based on their talents and career is critical for an organization's success but the job market becomes increasingly competitive and the available skills grow more diverse, employers need to be more selective in their choices, since poor

employment decisions can produce long-term negative effects, among them high training and development costs to minimize the incidence of poor performance and high turnover which, in turn, impact staff morale, leading to low productivity and loss of organizational integrity. At worst, the organization can fail to achieve its objectives thereby losing its competitive edge and its share of the market.

Employment is described as “the processes used to legally obtain and employ qualified people at the right place and time so that the people and the organization can have job satisfaction. In other words, the employment process provides the organization with a pool of potentially qualified job candidates from which judicious selection can be made to fill vacancies.

Successful employment begins with proper employment planning and forecasting. In this phase of the staffing process, an organization formulates plans to fill or eliminate future job openings based on an analysis of future needs, the talent available within and outside of the organization, and the current and anticipated resources that can be expended to attract and retain such talent. The unreliability issue in the old system of employment which is employment of the wrong candidate for the right job however led to the development of this new more reliable system. The Objective of the study is to develop a system that will manage the applicants’ resume and match with the job profile of the organization or firm. The system will assure equal opportunity and impartial review of applications in an organization or firm.

## 2. LITERATURE REVIEW

The concept of career management system can be traced back to the early 1970’s (Bayraktaroğlu, 2006). Career in daily life refers to a person's experience of job and roles undertaken throughout life, occupation, business and success (Bayraktaroğlu, 2006). Career is defined as a developmental process that covers all the roles before, during and after the profession (Yazıcı, 2009), and consists of all the work done during an employee's working life (Özgen et al, 2005). Career has different meanings, while the dictionary meaning of it is stone quarry, running, place, path, walkway, arena, the figurative meaning is life and profession.

Recruiting and employing wrong candidates who are not capable comes with huge negative cost which businesses cannot afford although decision support systems have been helping to solve the problem of employment yet it have not been totally solved. Because market needs are shaped by numerous factors including political realities, advances in technologies and changing cultural expectation and to be competitive in this environment, business cannot be static, but need to grow and change to meet the needs of marketplace also decoding trends and translating them into business strategies are neither simple nor obvious process and the issue of employment decision is a challenge to managers therefore to help management make such complex decisions, many organizations uses decision support systems.

Machine learning is a field of computer science that gives computer systems the ability to "learn" (i.e. progressively improve performance on a specific task) with data, without being explicitly programmed. The name Machine learning was coined in 1959 by Arthur Samuel. Machine learning techniques also called decision support system techniques are methods and models that are applied to solving decision problems using available data. Based on these techniques applications are developed which aid personnel at strategic levels in an organization make decisions, such as the top, middle and lower level managers. The techniques include neural network, fuzzy logic system, and Generic algorithm, to mention but a few.

### 3. PROPOSED SYSTEM AND IMPLEMENTATION

#### 3.1 System Proposal

The proposed system is aimed at solving the unreliability problem in the current employment system, and the issue of low productivity due to wrong employment decision strategy. For example a lawyer if employed to a position where a fine artiste is needed would no doubt deliver poorly. Information and product flow diagram for the new system would be used to show how information is disseminated from the source(Employing firm) to the receivers (job applicants) through a medium, the medium serves as a channel through which the information concerning job vacancies gets to the applicants through the employers via words of mouth radio stations or even as an email message.

Responses get back to these employers as feedback which can also be seen through applicant's response by registration for the available position.

Below is a diagram to further illustrate

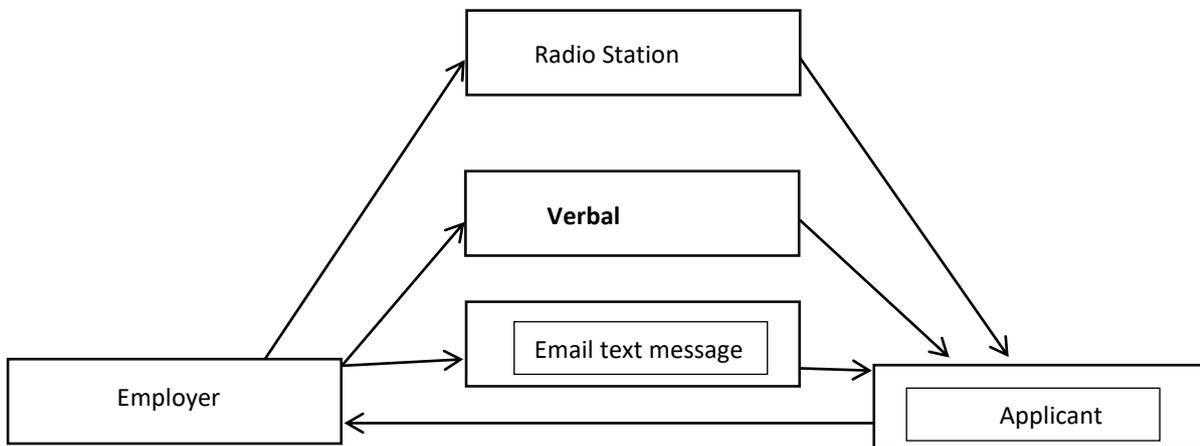
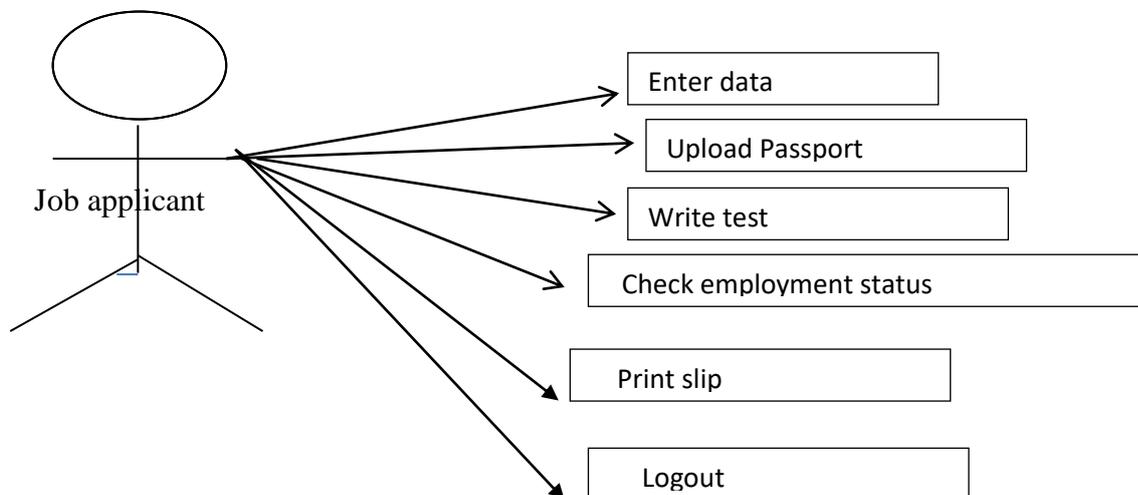


Figure 1: System Framework

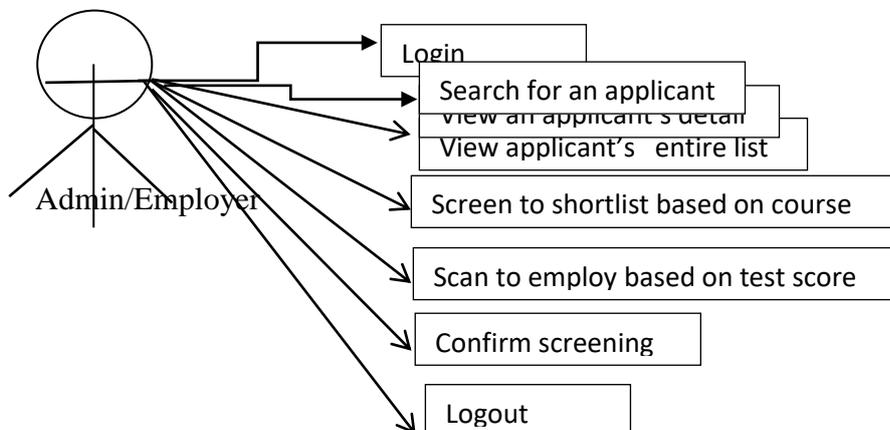
Below are the Use case diagrams for the Proposed System

#### Use case diagram of job applicant



**Figure 2: Job Applicant job. He tried!**

**Use case Diagram of Admin/Employer (HR Manager)**



**Figure 3: Admin/Employer Log in**

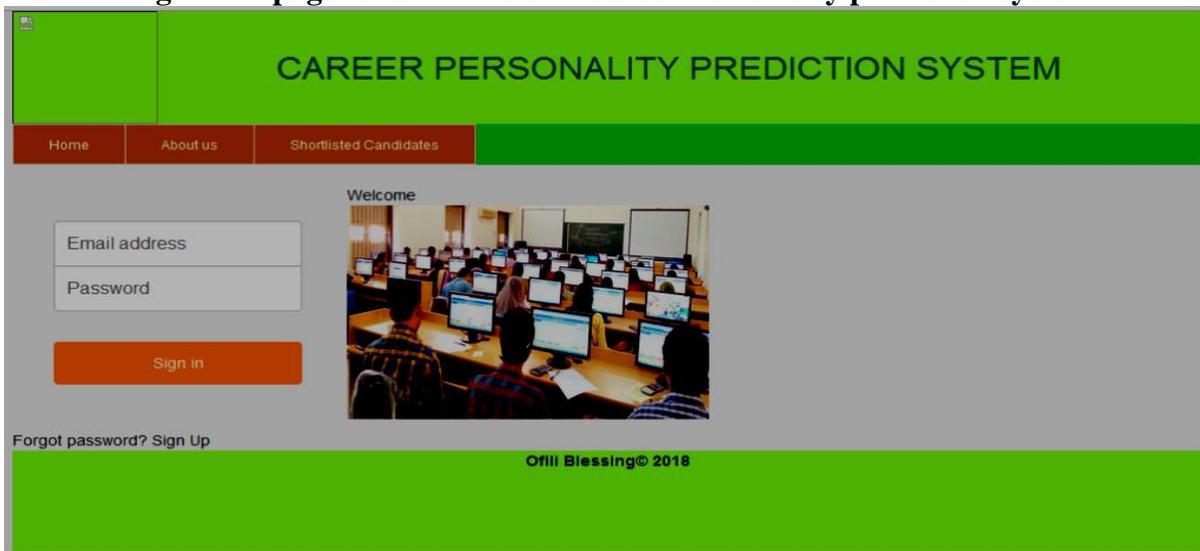
### 3.2 Methodology

The new system was developed based on Expert system methodology that have eleven categories which are rule based systems, knowledge based systems, neural network, fuzzy expert systems, and object oriented methodology, case-based reasoning system, system architecture, intelligent agent systems, database methodology, modeling and on otology. The new system is purely a knowledge based system and is developed from expert knowledge that have been tapped and stored concerning similar problems. This system (knowledge based system), rule based system fuzzy logic and artificial neural network have common concepts and therefore are explicitly discussed in the literature review of this work. The new system was developed using integrated development environment, relational database management system and php version 5.2.6 programming language for the software and desktop or personal computer for the hardware.

## 4. RESULTS AND CONCLUSION

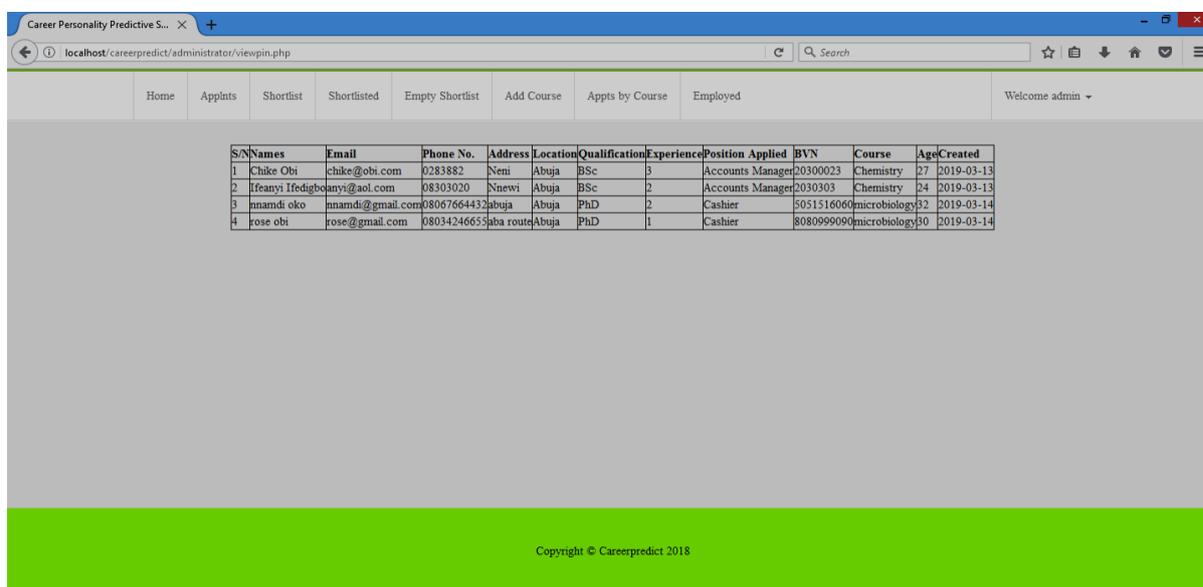
The figure as seen in the results describes the various screenshot of the newly developed system for better understanding of the system. It shows the various screenshot that allow the users which are job applicants' and the admin which is also the employer have access into the new system to register for the available job position if any and to perform the shortlisting and employment operations respectively. For example figure 4.1 shows the job applicant's home which enables him/her to sign up to register and then later signing to write the online test. Figure4.2 displays the various operations the admin would perform, The add course interface as seen in figure 4.2 would enable the admin add more courses to the already existing ones in the database, and the shortlist interface would enable him shortlist applicants who met up with the criteria as specified by the HR department which are qualification, age, location, position and year of experience as shown in figure , It also reveals a display of the interface that allow the admin perform the last operation which is the employment operation for the aim of the study to be achieved. The screenshot also shows some applicants that have been shortlisted.

#### 4.1 Design homepage for an Enhanced Career Personality prediction system



**Figure 4: Job applicant’s side of the system**

This is the homepage of the job applicant’s side of the new system where he signs up to register and signs in to write an online exam if he is shortlisted. Note only applicants who are shortlisted based on criteria such as qualification, experience, age and location are allowed to sign in and write exams.



**Figure 5: Admin/employer’s side application**

Figure 5 shows list of some already registered job applicants who are eligible to write the online test and have the chance of being employed, it is important we note the the software is designed in such a way that in shortlisting applicants with inputed age or less and inputed year of experience and more are shortlisted.

## 5. CONCLUSION

This proposed work develops an environment for production of an enhanced employment predictive software and this is important for the effectiveness of a good employment system and also effective strategies of any firm, I conclude by saying that this software if adopted would not only perform the employment process effectively and according to HR's listed criteria with no bias but would also assure job applicant's impartial review of their applications.

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