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Automated Recruitment Process Management using Rank Xtractor Algorithm

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Abstract: ***In this project, we present an innovative approach to improve the effectiveness of e-recruitment. The Rapid Development of Information Technology has been affecting human resource management practices and processes. Artificial Intelligence is an emerging area in the field of HR Technology which can replace or enhance the effectiveness of Human Resource Management. The System proposes an evaluation engine that is capable of evaluating the candidates on different aspects and extracts the information to rank them accordingly in our web-based e-recruitment system and further providing the candidates with related jobs.***
Keywords: Rank Xtractor Algorithm, E-Recruitment, Human Resources, Recruitment Process

I. INTRODUCTION

In the previous number of decades, the event of ICT has opened new paths for people's accessibility to go looking out for new job opportunities. It's seen that the E-recruitment system is expanding vastly and allowing Human Resource agencies to concentrate on an extremely wide audience, as several people are turning to the web for seeking jobs and career opportunities. The price paid is that the uncontrolled increase of unfit candidates. These instances are often overwhelming to Human Resource agencies that need to assign human resources for manually assessing the candidate resumes and evaluating the applicants' quality for the positions at hand.

To alleviate this downside, we propose the "Rank Xtractor Algorithm" to automatize the ranking. In this work, we've developed an integrated company-oriented e-recruitment system that automates the candidate analysis and screening methodology. Its objective is to calculate the applicant's connexion scores that replicate how well their profile fits the positions' specifications. During this section, we present a summary of the projected system and candidate ranking theme.

II. LITERATURE REVIEW

Information Technology (IT) has been intensely affecting human resource management (HRM) practices and processes [1]. The growth of online recruitment has spurred the need for more effective automated systems [2]. Green HRM is playing a fundamental role in the integration of corporate environmental management into human resource management. Artificial intelligence helps parse and screen CVs based on profile required better than humans and saves time as well [1]. 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. Automated candidate ranking system that has been proposed to speed up the recruitment process typically requires a model of the HR department's decision-making process, as well as a careful parameterization by the department's expert recruiters [3]. This approach for recruiting and ranking job applicants in online recruitment systems reveals that it is effective in identifying personality profiles for job applicants and thus rank them accordingly [4].

III.RESEARCH METHODOLOGY

In this work, we propose a new algorithm to solve the candidate ranking problem in e-recruitment systems. In this Algorithm, the candidate's rank is determined by the Principle Score where the Principle Score is the summation of the base score and the test score with the culmination of certification scores which reflects how well a candidate profile fits the requirements of the given job position. Then the system outputs the final ranked list by applying the above algorithm to sort the candidates into different levels (Beginner, Intermediate and Advanced). According to these levels, the relevant job profiles will be presented to the candidates. These job profiles are posted by the respective companies into those levels according to their pay scales.

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A. Score Generator

1) *Base Score:* After Registration, the candidate has to give a basic aptitude test which is mandatory and from that test, a Base Score is generated.
2) Selection of Relevant Branch by the Candidate.
3) *Test Score:* After the selection of the branch, the candidate has to give a departmental test and from that test, a Test Score is generated.
4) *Principle Score:* The summation of the Base Score and the Test Score with the culmination of the relevant certification Score.
5) *Certification Score:* The Certification Score will be given accordingly to the number of certifications the candidate has that are verified (Local and Global Certifications).

B. Levels Explanation: According to the rank which is allotted to the candidate, there are 3 levels in which they are placed

1) *Beginner:* The candidate can access only limited profiles that are posted by the companies which apply to this level.
2) *Intermediate:* The candidates who are placed at this level can apply the profiles of the pursuing level as well as the above level.
3) *Advanced:* The candidates who are placed at this level have access to all the above levels and have a wider scope of company profiles which they can opt for.
4) *Principle Score:* The summation of the Base Score and the Test Score with the culmination of the relevant certification Score.
5) *Certification Score:* The Certification Score will be given accordingly to the number of certifications the candidate has that are verified (Local and Global Certifications).

C. List Creation Mechanism

1) After clicking on the profile, the candidates having no offer letter as well as more than one offer letter, all are placed in the Profile Wished List according to their respective ranks.
2) Now in our project, we use a (60%-40%) method where candidates having no offer letters are put in the 60% category and rest having one or more than one are put in the 40% category and we create a Centralized List.

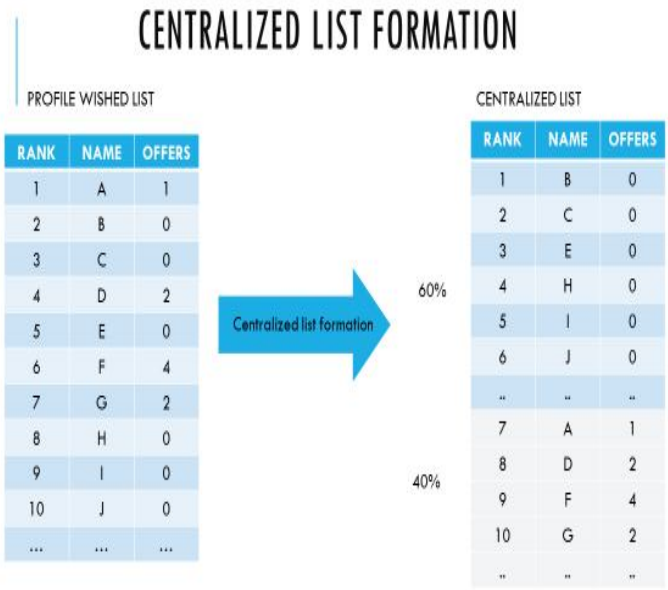

Fig. 1 Centralized List Formation

3) Now according to the requirements of the HR, the Final List gets created only if the respective candidates give an acknowledgment within the listed time.
4) If any candidate fails to give an acknowledgment, then he/she is removed from the list and in replacement, another candidate from the Centralized List is inserted onto the Final List.

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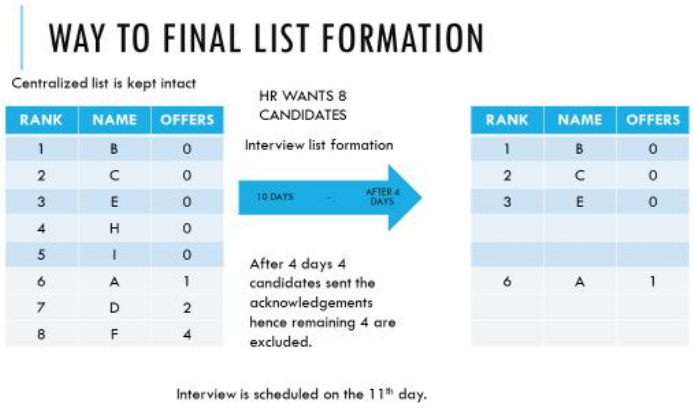

Fig. 2 Way to Final List Formation 1

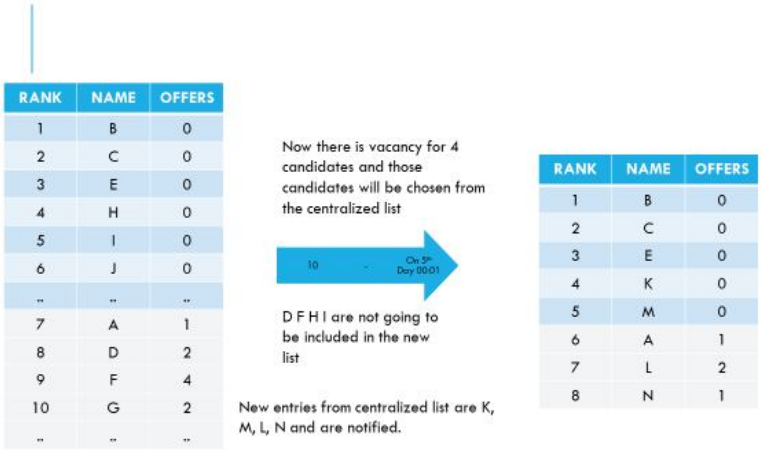

Fig. 3 Way to Final List Formation 2

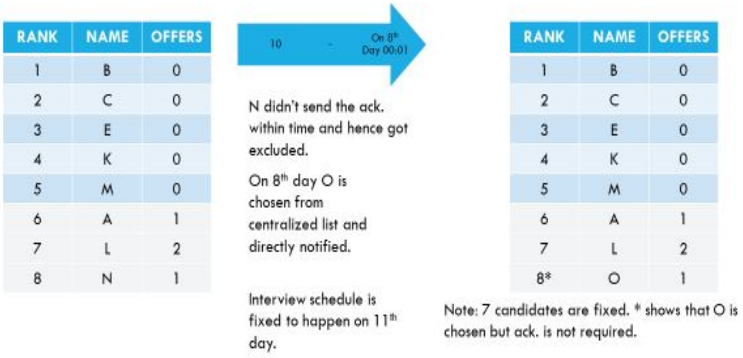

Fig. 4 Way to Final List Formation 3

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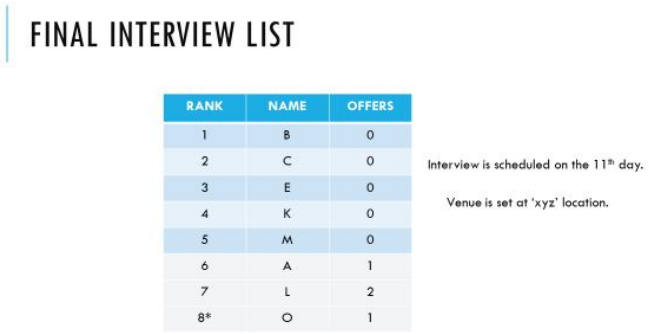

FINAL INTERVIEW LIST

RANK	NAME	OFFERS
1	B	0
2	C	0
3	E	0
4	K	0
5	M	0
6	A	1
7	L	2
8*	O	1

Interview is scheduled on the 11th day.

Venue is set at 'xyz' location.

Fig. 5 Final Interview List

5) After fulfilling the requirements of the HR, the Final List gets created and notification about the venue and time of the interview is communicated towards the candidates.

IV. ADVANTAGES

1) *Sourcing:* Proactive way of finding qualified candidates.
2) *Automated Screening:* Finding eligible candidates from a huge pool of applicants.
3) *Automated Ranking:* A Process to rank a candidate for a particular job impartially.
4) *Automated Scheduling:* Use of mechanisms to schedule the interviews and send notifications.
5) *Positive, Faster and Cost:* Effective method.
6) Building Employer Brand of Choice.

V. CONCLUSION

In this paper, we have suggested a unique, faster and cost-efficient approach for online recruitment systems. The paper presents an efficient rank-based system to qualify applicants according to their skill-sets. We are further improving the system for greater accuracy and reliability with additional features.

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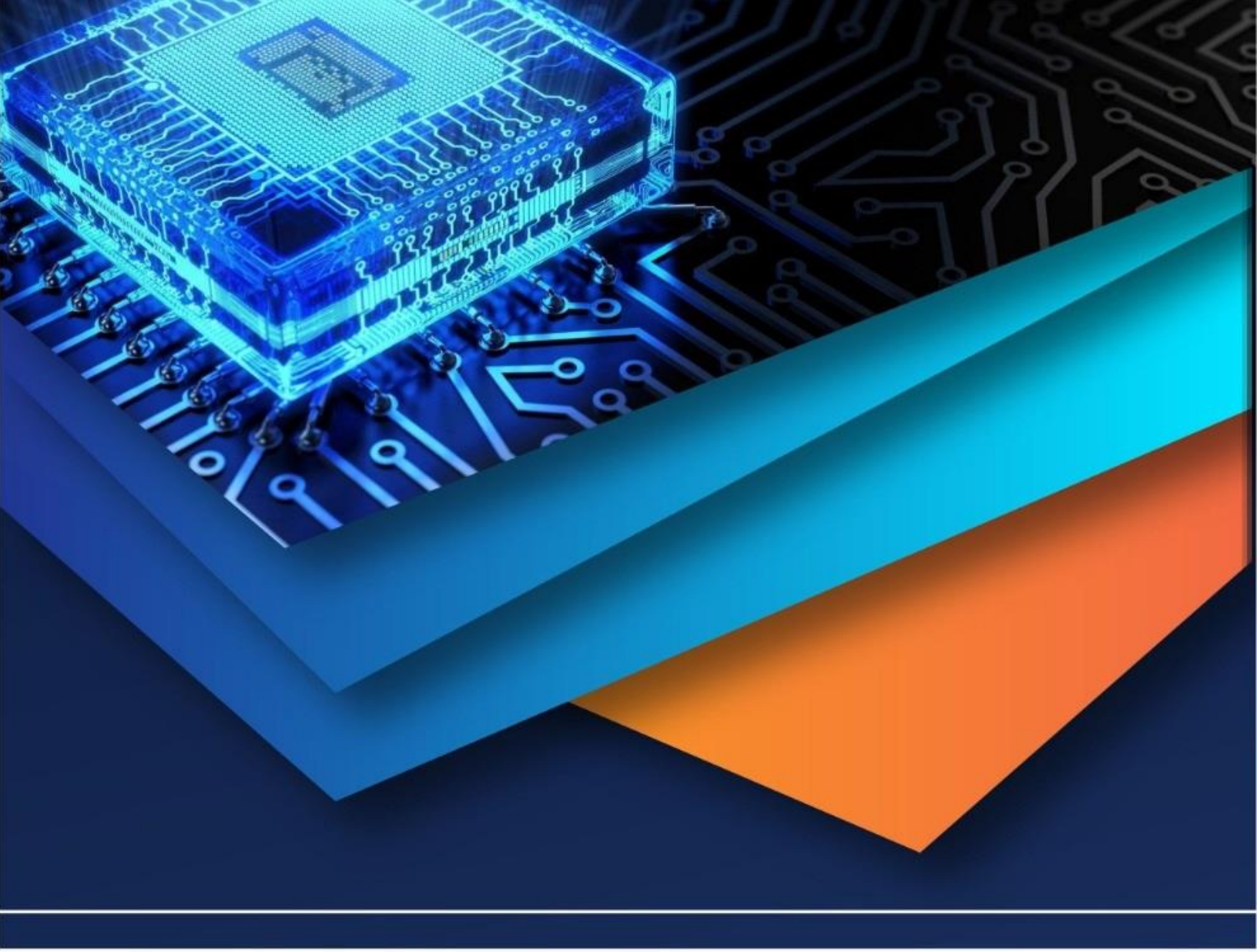

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