# Personality Prediction System through CV Analysis

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**Abstract –** *Human Resource Management is apparently supported by and provided with more opportunities by the development of Job Characteristics Model (JCM) which in turn is based on the concept of modern job design. Fortunately, the development in modern information system, digital technologies, the universal access of electronic technology and internet led to the inclination of the global Human Resource Management development and make the system more applicable. Following the trend, the proposed system tries to design a plan to integrate Job Characteristics Model into E-HR system to search for a new model of efficient operation on Human Resource Management in the Internet Age. In this project, we present a set of techniques that makes the whole recruitment process more effective and efficient. We have implemented a system that ranks the candidates based on weight-age policy as well as an aptitude test. Today there is a growing interest in the personality traits of a candidate by the organization to better examine and understand the candidate's response to similar circumstances. Therefore, the system conducts a personality prediction test to determine the personality traits of the candidate. Finally, it presents the results of the candidates to the recruiter who evaluates the top candidates and shortlists the candidate.*

***Key Words***:  e-recruitment, aptitude, personality prediction, credentials, Big five model of Personality

## 1. INTRODUCTION

The proposed system is two sided: it would be candidate oriented or organization oriented. In the first case the system would recommend the candidate a list of jobs that better fits his skills. In the second scenario, the recruiter would publish the specifications specification and requirements of available job positions and the candidates can apply for the same by submitting their CVs.

The existing e-recruitment system simply scans the submitted CVs and shortlist the candidates wherein the proposed system conducts an online aptitude test and personality test thereby predicting the personality of the candidate as well as short-listing the candidate based on his skills and decision-making ability.

## 1.1 Project Objectives

The objectives of the project are as stated below:

•        To develop a system to provide a more effective way of short-listing the candidates.

•        To determine the key skill characteristic by defining each expert's preferences and ranking decisions.

•        To automate the process of requirement specifications and applicant's ranking.

•        To conduct online aptitude and personality test.

•        To produce ranking decisions that would have relatively higher consistency than those of human experts.

## 2. LITERATURE SURVEY

In 2014 an Integrated E-Recruitment System for Automated Personality Mining and Applicant Ranking was proposed by Faliagka et al. an automated candidate ranking was implemented by this system. It was based on objective criteria that the candidate's details would be extracted from the candidate's LinkedIn profile. The candidates' personality traits were automatically extracted from their social presence using linguistic analysis. The candidate's rank was derived from individual selection criteria using Analytical Hierarchy Process (AHP), while their weight was controlled by the recruiter (admin). The limitations of the system were that senior positions that required expertise and certain qualifications were screened inconsistently [1].

Liden et al. published The General Factor of Personality: The interrelations among the Big Five personality factors (Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism) were analyzed in this paper to test for the existence of a GFP.  The meta-analysis provides evidence for a GFP at the highest hierarchal level and that the GFP had a substantive component as it is related to supervisor-rated job performance were concluded by this paper. However, it is also realized that it is important to note that the existence of a GFP did not mean that other personality factors that were lower in the hierarchy lost their relevance [2].

## 3. PROPOSED SYSTEM

### 3.1 Problem Statement

There is a huge workload on the human resource department to select the right candidate for a particular job profile which in turn would provide experts workforce for the organization from a large pool of candidates.

### 3.2 Solution

The proposed system will enable a more effective way to short list submitted candidate CVs from a large number of applicants providing a consistent and fair CV ranking policy. This can be legally justified. System will rank the experience and key skills required for a particular job position than system will rank the CV's based on the experience and other key skills which are required for particular job profile. This system will help the HR department to easily shortlist the candidate based on the CV ranking policy.

### 3.3 Working of the system

The candidates will register themselves with the required details in the CV form and upload the documents for verifying the authenticity of the information provided in the CV registration form. The candidates can then view the requirements and details of the job as specified by the admin or the recruiter. In order to apply for a job the candidates needs to be eligible for that job by satisfying all the requirements as stated by the recruiter. If a candidate applies for a specific job, the system checks whether the candidate meets all the requirements/parameters as specified by the recruiter. If the candidate satisfies the requirements/parameters, then the candidates request for that job would be accepted else the system denies the candidate's request for that job. Candidate can also give an online test, which will be conducted on personality questions as well as aptitude questions. After completing the online test, candidate can view their own test results in graphical representation with marks. The system would then derive and rank the candidates who were eligible for the job. The rank of each candidate acts as a score of how well the candidate's profile meets the specifications of the recruiters as well as cumulative score of the aptitude test. The recruiter could also analyze the personality of the candidate based on the result of the personality test. So, based on CV, aptitude test and the personality test the candidate would be shortlisted.



**Figure: State Transition Diagram of the System**

### 3.4 Architecture of the System

Content the proposed recruitment system comprises of two major modules- the Admin login and the User login which in turn comprises of various other sub-modules. The admin and the user need to login with valid credentials in order access these sub-modules. The admin login would be used by the recruiting company and the user login would be used by the applicants applying for the jobs.

### 3.4.1 Module 1-Admin Page

- Login-The admin needs to login with his/her admin id and password to set the various parameters of the system and access the sub-modules in Module1

- Aptitude Questions: The admin can add the aptitude questions of topics of his/her choice with its respective multiple options.

- Personality Questions: In this sub-module, the admin can add the entire personality related question to predict the personality of the applicant. It would be based on the Big Five model of Personality. It comprises of five options such as Openness, Conscientiousness, Extroversion, Agreeableness, and Neuroticism

- Job Details: Admin or the recruiter can add the requirements or job details on behalf of the company. System would allow the admin to add job details such as qualification, position, experience, salary, etc

- Shortlisted CV's: Here, all the shortlisted CV's of candidates will be displayed. The short-listing of CV's is performed by system itself.

- View Candidates: The admin can view all the registered candidates with it's details.
- View Result: The admin can view the results of the individual candidates which can be easy for the admin to select the desired candidate.
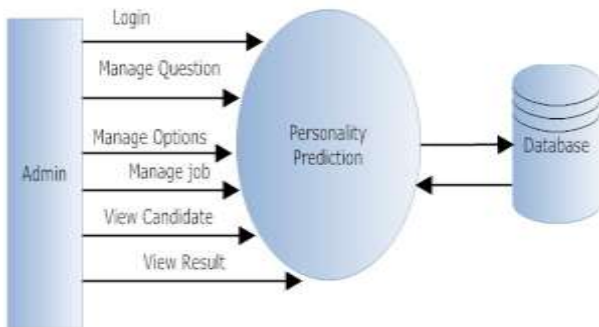


**Figure: Data Flow Diagram of Admin Module**

### 3.4.2 Module 2-Candidate's Page

- Registration and CV creation: To access the below given modules candidate must fill up registration form and create login credentials to gain access to the system. During the registration process the candidate needs to create and submit their CV by filling the CV form.

- Login: The candidate need to enter the valid credentials to access the below sub-modules.
- Test: After successful login into the system, the candidate can proceed with the online test based on aptitude and personality.
- Apply for job: The candidate can view the job details and select the appropriate job wherein the candidate meets the parameters as specified by the admin/recruiter.
- View results: On successful completion of the test by the candidate, the candidate can view the result that would be displayed in graphical representation.
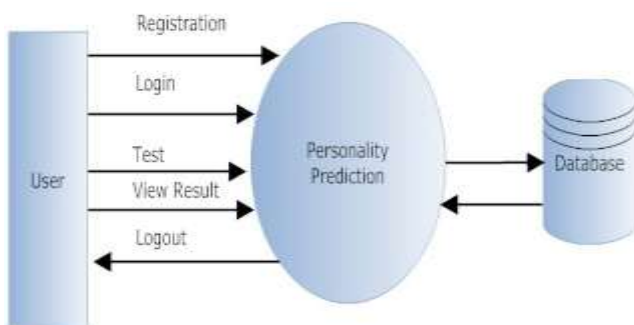


**Figure: Data Flow Diagram of Candidate Module**

## 4. CONCLUSION

In this project, we have implemented an organization oriented recruitment system that would assist the human resource department in short listing the right candidate for a specific job profile. The system would be used in many business sectors that will require expert candidate, thus reducing the work load on the human resource department.

## 5. REFERENCES

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