Virtual Screening and Evaluation Application for Recruitment

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ABSTRACT: Automation is the replacement of manual work with technology to keep up with robust software solutions and reduce manual intervention. By using technology for screening, assessing, and ranking candidates, you can remove any common hiring biases and ensure the process remains completely objective. The main theme of the project is to develop a web application to conduct a virtual interview in the absence of HR by using a micro web-framework called Flask, which is a Python module that lets us to develop web applications. A user-friendly HR panel is provided to the HRs for the quick access of candidate information. An Automated screening system provides great services in selection of talented candidate which also reduces the interaction time and increase in quality of hiring.

I. INTRODUCTION

Recruiting by implementing automation is a category of hiring process that allows companies to automate recruiting tasks and workflows. This project is aimed at developing a web application for conducting virtual interview in the absence of HR. The proposed system will help HR. So, when HR is in tight schedule, overloaded with hiring process and at the time of mass hiring the concern web application plays a major role. The system consists of features like Automated resume screening which reduces time to hire by saving recruiters spend hours of time for manually reading resumes, evaluation of answers, conducting strict interview. Whereas Automation is User-friendly to candidate, which benefits in continuous monitoring during interview. Candidate can able to seek the help of technical support if any technical issue is taken place. Hence this automated system is not only feasible to candidate but also for the HR as well. The system consisting of HR panel which helps to get candidate information like number of candidates attended interview, pictures of candidate during interview, Resume of the candidate and introduction of candidate. So automated system which is connect to database provides the facility to the all the HRs to access the candidate information any time with the help of HR panel. The system will automatically transfer the candidate information which was stored in database to the HR panel.

II. OBJECTIVES

Automation Provides consistency, accurate candidate performance tracking also Reduces Recruiter intensive administrative activities. Because of this Virtual recruiting process Unlimited time savage, energy and resources for the company, limited human error and workforce bias. Provides the facility to easily choose the best performed candidate during mass hiring. This type of hiring environment is User-friendly environment for interview to candidate.

III. LITERATURE SURVEY

The migration of educational evaluation methods when comes coming towards the concept of virtual assessment process is a combination of the virtual assessment system with speech recognition system. The voice will be so used to evaluate the answers. Not only by using key

generation algorithm and reverse cycle cipher algorithm we will also be ensuring the security measures by encrypting and decrypting question paper and answers also. We are using the speech recognition python package to recognize the speech in proposed system and also store the audio file of candidate response in database for the HR's use.
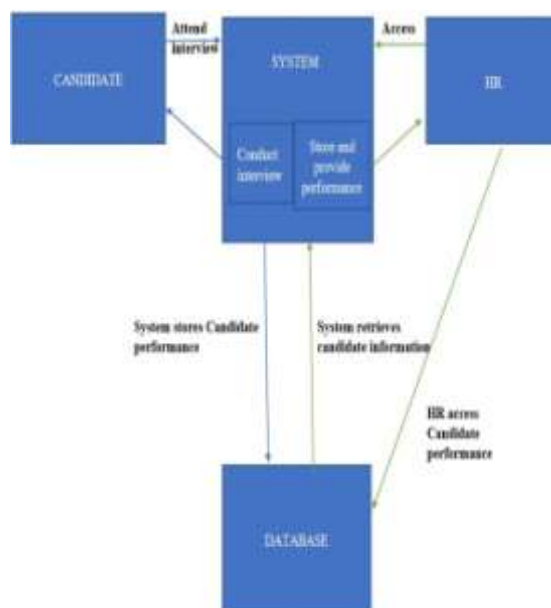
IV. EXISTING SYSTEM

In a present Virtual hiring encompasses the intelligence to streamlined resume review outreach the following hiring to onboard the candidates. One of the best features in Automation system is screening of resumes and applications. However, hiring the right candidate remains one of the most critical functions within the organization. Since it's not an end-to-end process there might be a chance of losing candidate's previous performance, also there might be a chances of delay in reaching of updates to the candidates regarding further information.

V. PROPOSED SYSTEM

This Virtual Hiring System is end-to-end proctored interview processes which consist of assessment and screening. Screening involves resume screening and interactive screening. This automated proctored system is developed with the features like cheating detection, image capturing, accurate response from the proposed system. The evaluation process is done at backend which is based on the dataset provided to the proposed system and evaluation result is stored along with candidate's performance and details in connected database which can be only accessed by HR with unique ID and password, through which HR can observe performance of the candidate, examine evaluated result, count of attended candidates. Retrieving of details of candidates which are stored in database which helps HR to know more about candidate

VI. SYSTEM ARCHITECTURE

VII. TEST CASES

1. CANDIDATE MODULE:

Test Case No.	Test Case	Input	Process	Output
1	Login	Login ID, Password	If Login ID and password are correct then it goes to further process of Interview, otherwise displays error message.	Displays the Successful Login page.
2	Capture Candidate Picture	Click on the capture picture button.	Captured picture will be stored in the database.	Displays a webpage that picture is successfully captured or not.
3	Communication round	Candidate introduce himself/herself	Candidate introduction will be automatically stored in database for Further usage.	System responds to his/her introduction.
4	Resume Screening	Candidate provides Resume saved path.	Reads the candidate resume and process it and identify branch of candidate .	System proceeds for further process.
5	Conducts interview	Automated system will ask technical questions and candidate answer them.	All candidate answers will be recorded in system and evaluation of Recorded answers taken place in backend.	Processing page will be displayed and within few minutes exit page will Be displayed

2. **HR MODULE:**

Test case No.	Test case	Input	Process	Output
1	Login	Login ID, Password Checking	If Login ID and password are correct then it goes to HR Panel Page, otherwise it again returns us the login screen	Displays the HR Panel of the HR.
2	Count of candidates attended interview.	Click on the button.	Retrieve number of candidates attended interview from the database.	Displays count on screen.
3	View performance of candidate.	Write a query in database.	Runs the query which is processed in backend and retrieves Information of candidates	Displays performance of candidates on screen.
4	View Candidate Resume	Clicks the button and provide candidate Id and path in HR system.	Automated system retrieves information from database.	Saves the candidate's resume in path provided by HR.
5	View picture of candidate before interview start	Click on the button and enters the Candidate Id stored in database.	Automated system will process to retrieve information.	Displays Candidate picture captured before interview start on screen.
6	View picture of candidate after conducting interview	Click on the button and enters the Candidate Id stored in database.	Automated system will process to retrieve information	Displays candidate picture captured after interview conducted on screen
7	Get Candidate Introduction	Clicks the button and provide candidate Id and path in HR system	Automated system retrieves information from database	Saves the candidate's introduction in path provided by HR.

		with ".wav extension"		

VIII. OUT-PUT SCREENS

FIG 9.1 Candidate Login screen

FIG 9.2 Image capturing screen

FIG 9.3 Resume Upload Screen

FIG 9.4 Communication round screen

FIG 9.5 Interview Guidelines Screen

FIG 9.6 Interview Screen

FIG 9.10 Answer Evaluation Process Screen

FIG 9.11 Interview Ended Screen

FIG 9.12 HR Login Screen

FIG 9.13 HR-Panel Screen

X. CONCLUSION

This proposed system made a possible for "Virtual Screening and Evaluation Application for Recruitment". In Present days virtual interview in the duration of the assessment via webcam surveillance or with the help of Automation the online proctoring software captures the image of the test taker known as candidate at random times during the test. Virtual proctored tests are organized via a computer or mobile phone, and requires a stable internet connection, a microphone, and a webcam. These Virtual proctored assessments and interviews provides numerous benefits, one of the main benefits is that the candidate is monitored throughout the assessment and interview without an actual physical recruiter present with the candidate. This proposed system eliminates the necessity of a recruiter every time you need to hold an interview. These proctored assessments or interviews are scheduled tests that are taken virtually while the proctoring software monitors the test takers or candidates, webcam video, and audio during the both assessment and interview. The data recorded by the proctoring software can be stored in a database for review. The latest virtual remote proctoring solutions, however, use Artificial Intelligence to proctor these tests and, hence, require no proctor or third-party proctor services. This software automatically captures the image of the candidate during the

interview. But before the test begins, the candidate is required to submit his/her resume. Then depends on the skills and branch mentioned in resume the automated system is trained to interview the candidates regarding respected branch subjects and technologies. In the same step, the microphone and webcam are tested to avoid any errors during the assessment. For auto proctored exams, the candidate receives a set of questions (in text format) one by one on their screen. These questions are timed, and hence they require the candidate to answer those questions. The Answers can be given in speech-to-text form in the designated time. When the test is done, these assessments will be evaluated at the back end. This Evaluation process will take few minutes. Later HR would look into the candidate's live feedback and mal-practices, behaviour in real-time. Generally, remote live proctoring can be used as the safest method of conducting assessments and interviews remotely. Hence, automated proctoring has become a much popular choice for both industrial and non-industrial communities for hiring new candidates.

BIBILOGRAPHY
[1]. Ayham Fayyoumi, Anis Zarrad, Novel Solution Baseon Face Recognition to Address Identity Theft andCheating in Online Examination Systems, A Advancesin Internet of Things, 4(3), 2014, 5-12.
[2]. D. L. Baggio. Enhanced human computer interface through webcam image processing library. Natural User Interface Group Summer of Code Application, pages 1–10, 2008.
[3]. George Nagy, Stephen V. Rice, and Thomas A. Nartker, "Optical Character Recognition: An Illustrated Guide to the Frontier (The Springer International Series in Engineering and Computer Science)"
[4]. Harshal Arbat, Srishty Choudhary, Saurabh Marne,Prof. Uday Patkar, ONLINE EXAMINATIONSYSTEM USING VOICE RECOGNITION SYSTEM, International Journal ofEngineering Sciences & Research Technology, 6(3), 2017, 285-287
[5]. J. Shi and C. Tomasi. Good features to track. In Proc. IEEE Conf. Computer Vision and Pattern Recognition (CVPR), pages 593–600, 1994.
[6]. Sheeba Praveen, "An Approach to Evaluate Subjective Questions for Online Examination System", Assistant Professor, Dept. CSE, Integral University, Lucknow, U.P, India.
[7]. W. Rosen and M. Carr. An autonomous articulating desktop robot for proctoring remote online examinations. In Frontiers in Education Conf., 2013 IEEE, pages 1935–1939, 2013.
[8]. Yousef Atom, Liping Chen, Alex X. Liu, Stephen D.H. Hsu, Xiaoming Liu, Automated Online ExamProctoring, ieee transaction on multimedia, 19(7), 2017, 1609-1624.