

Utilization of Laravel Framework for Development of Web Based Recruitment Tool

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Abstract: Current era is of Internet. Nowadays majority of business processes are done online. Companies prefer to post vacancies on their website and accept resumes of eligible candidates. Millions of people are posting their resumes on such websites. This task of selecting and verifying resumes is laborious, time consuming but the accuracy of data is in question. Therefore it was thought of computerizing this activity. In this system, we are proposing a model or tool that will extract the needed information of eligible candidates. Proposed model uses searching and sorting algorithm. This algorithm efficiently and accurately searches for and sorts the qualifying candidates. Hence, proposed system gives accurate output and HR can either select or reject a candidate with respect to some given query terms. This tool is very useful for companies/organizations for candidate recruitment and further management of other processes. It includes Human Resource management activities and Interviewer activities and thus helps them to efficiently handle their recruitment and related activities.

Keywords: Authentication, Laravel framework, MVC, php.

I. Introduction

In the past years, companies used to post their recruitment news in newspaper, but nowadays posting recruitment news on the company's own website has become more popular. So if we consider from the company's points of view, if they want to post recruitment then they can post it on the careers page which will be integrated with their website. After this they can take many processes like Aptitude, Online test, Interview or other process. Once a candidate fills the form and submits its resume for the respective post or designation then the process of HR manager starts. HR views the candidate's information and decides whether to select him or not. If a candidate is selected then the tool generates an aptitude test for him by considering his experience and emails him the link. The link will be only active for 7 days. Score of aptitude will be stored and candidate will be demanded for documents which he has to upload on the link mailed to him. After this process, verification of documents will be done by HR and when they are approved then the candidates are finally shortlisted. Date and time of interview will be e-mailed to candidate. Then Interviewer will generate its evaluation sheet with some parameters and he will assign marks. After that Interviewer decide whether to select, reject or hold the candidate. Interviewer has option to set the interview; it may be telephonic or online interview through video call. If candidate is selected then a call letter of his job will be printed which also include its salary structure. In this tool we provide lots of automation which help organizational person for efficiently utilize this tool. We consider all the recruitment activity from registering a candidate up to selecting and appointing the candidate. Any company can use this tool to recruit candidates.

II. Literature Review

We are studying some deployed applications and some existing system to effectively design the tool. Some previously developed systems are there, but they are implemented in only web based platforms and have some limitation. Also, as the application or tool is going to be used on Smartphone, it must have an attractive and user friendly GUI. The applications have carefully placed tabbed menus, attractive icons. As we are going to use Bootstrap framework for frontend the view of website will enhance and it is compatible with different size of screens.

[1] Implementing Singleton method in Design of MVC-Based PHP Framework:

PHP provides a framework that aims to accelerate the process of developing a website. Today, there are many object oriented programming based framework that uses full-stack model design to MVC (Model View Controller) design. The use of these designs, especially MVC design, is to provide ease in web application development. Writing the code is becoming more systematic and reusable. In addition, the use of framework greatly helps programmers in the development of large-scale applications that involve a lot of people in it. With the framework, the code will be organized so that it can be easily understood by other programmers.

[2] Sentinel Web: Implementation of Laravel Framework in Web Based Temperature and Humidity Monitoring System:

Laravel is one of the frameworks for web application development with expressive and elegant syntax and gives solution for development by facilitating general task in most big web projects. Laravel has a number of helpful functions like Bundle, Eloquent ORM, Application Logic, Reverse Routing, Class Auto Loading, etc. Implementation of Laravel framework is based on the last research in which web technology has not applied yet. Exploration of Laravel framework in this paper covers implementation of MVC concept, Eloquent ORM, Blade Templating, as well as installation of Bundles which supports system function.

[3] Design and implementation of web based on Laravel framework:

Development efficiency of Web design method based on Laravel framework is higher compared to traditional Web design method based on CI framework. When compared to the traditional frameworks for designing web applications, which result in many limitations, e.g. the increased development time. Laravel, on the other hand, makes the development process standardized, processing some non-business logic relationship automatically. Web design based on Laravel framework has scalability, so as to improve the development efficiency.

[4] Facilitating Job Recruitment Process through Job Application Support System:

Job recruitment and selection process is one of the most tedious tasks that human resource department in every organization has to perform. The recruitment and selection process consists of several steps. This paper focuses mainly on the step in which the applicants have to fill out application forms and undergo an initial screening interview. This step is very important because human resource recruiters must choose qualified candidates out of many applicants to be interviewed with the supervisors responsible for the job. Recruiters of many companies face a lot of problems performing this step especially when they have to perform it manually. Thus to develop a more efficient way in filling out and processing application forms and develop Job Application Support System to aid interviewers during the preliminary interview process. Job Application Support System consists of three main components including electronic application form, electronic telephone interview and electronic interview. It can speed up the recruitment process by filtering out unwanted applicants and allow a better facilitation of the interview process by providing interviewers with guidelines and forms with which they could fill out. Cost can be saved because there will be less paperwork.

[5] Laravel Starter:

Laravel is an MVC web-development framework written in PHP. It has been designed to improve the quality of your software by reducing both the cost of initial development and ongoing maintenance costs, and to improve the experience of working with your application by providing clear expressive syntax and a core set of functionality that will save your hours of implementation time. Laravel is one of the few PHP frameworks that offer true code modularity. This is achieved through a combination of drivers and its bundles system. Drivers allow you to easily change and extend caching, session, and database and authentication functionality. Laravel also providing a cutting-edge suite tool for interacting with database. Database migrations enable you to easily design and modify a database in a platform-independent way. So you won't have any compatibility issues. Laravel's Active record implementation is called Eloquent. Interacting with a database in an object-oriented way is the modern standard. With Eloquent, we can create, retrieve, update, and delete the database records without needing to write a single line of SQL. Eloquent provides powerful relationship management and it can even handle pagination automatically for you.

III. Proposed System

3.1 System Architecture

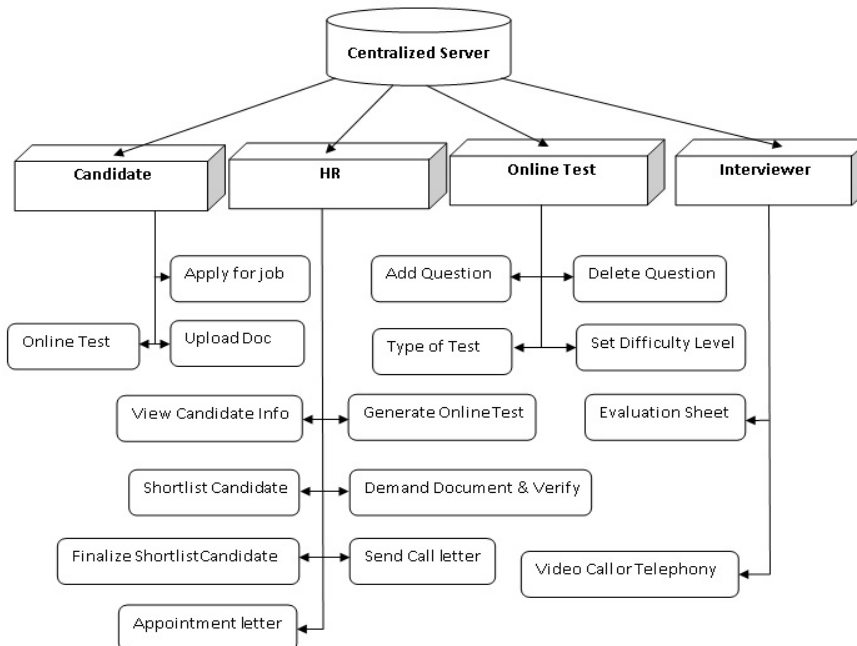


Fig. 3.1. System Architecture

3.2 Outline of System

- a. **Candidate:** The candidate will have all current job vacancies in company/organization. If candidate satisfied job criteria then he can apply for that post. Once candidates apply for job then they have to give online test through the link which is send to their respective e-mail id.
- b. **HR:** HR can access all candidate information. He can set online test and send link on their respective email id through which test will conducted. The next step is to finalize shortlisted candidate by simply sending link on respective email id through which documents are demanded and verified it after candidate successfully upload it. After verification of documents the HR will call candidate for interview through email. Once candidate crack the interview HR can send them appointment letter and generate salary structure for them.
- c. **Online test:** Online test are different for different candidate and it depends on their experience and specialization. For example Aptitude test, General knowledge test, Technical test etc. Each test has 3 levels (Ease, Medium, and Difficult).
- d. **Interviewer:** Interviewer can generate evaluation sheet for interview by setting own parameter. He can use 3 mode of interview:
 1. **Face to face:** Interviewer can conduct interview by asking questions face to face to the candidate.
 2. **Online interview:** Use video call (Google Integration) to conduct interview.
 3. **Telephonic:** A candidate is interviewed through telephone call

IV. Methodology

4.1 Model View Controller (MVC) in PHP:

The model view controller pattern is the most used pattern for today’s world web applications. The model is responsible to manage the data; it stores and retrieves entities used by an application, usually from a database and contains the logic implemented by the application. The view (presentation) is responsible to display the data provided by the model in a specific format. It has a similar usage with the template modules present in some popular web applications like word press, joomla etc. The controller handles the model and view layers to work together. The controller receives a request from the client, invokes the model to perform the requested operations and sends the data to the View. The view formats the data to be presented to the user, in a web application as an html output. [7]

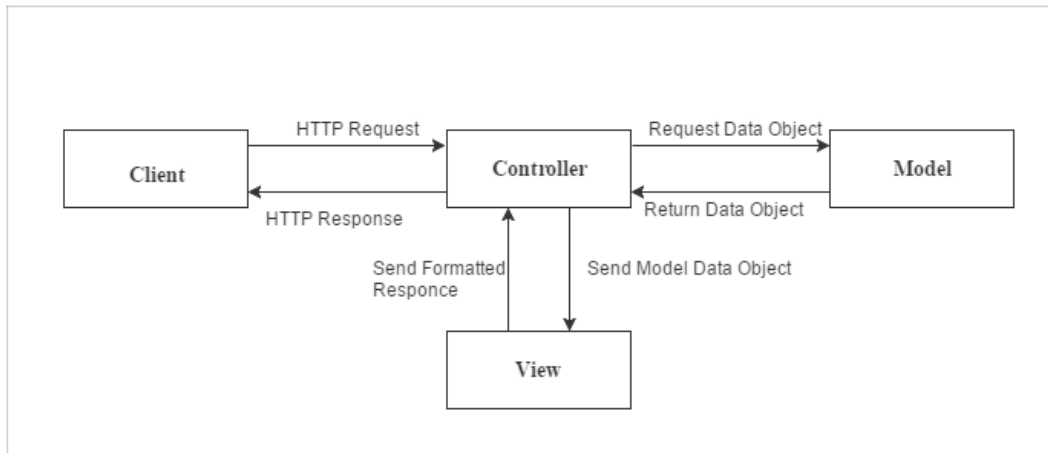


Fig. 4.1. The MVC Collaboration Diagram [7]

4.2 The Reason for Selecting Laravel Framework

Laravel is a web application framework with expressive, elegant syntax. Laravel attempts to take the pain out of development by easing common tasks used in the majority of web projects, such as authentication, routing, sessions, and caching. Laravel aims to make the development process a pleasing one for the developer without sacrificing application functionality. Laravel is accessible, yet powerful, providing powerful tools needed for large, robust applications. A superb inversion of control container, expressive migration system and tightly integrated unit testing support give you the tools you need to build any application with which you are tasked. [6]

Laravel provides functionalities [6] like:

1. Security

Laravel is more secure as it prevents application from sql injection, Xsrf, Xss.

2. Storing Password

The Laravel Hash class provides secure Bcrypt hashing.

3.Password Reminders and Reset

Most web applications provide a way for users to reset their forgotten passwords. Rather than forcing you to re implement this on each application, Laravel provides convenient methods for sending password reminders and performing password resets.

4. Encryption

Laravel provides facilities for strong AES encryption via the mcrypt PHP extension.

5. Validation

Laravel ships with a simple, convenient facility for validating data and retrieving validation error messages via the Validation class. Once you have performed validation, you will need an easy way to get the error messages back to your views. This is conveniently handled by Laravel. [9]

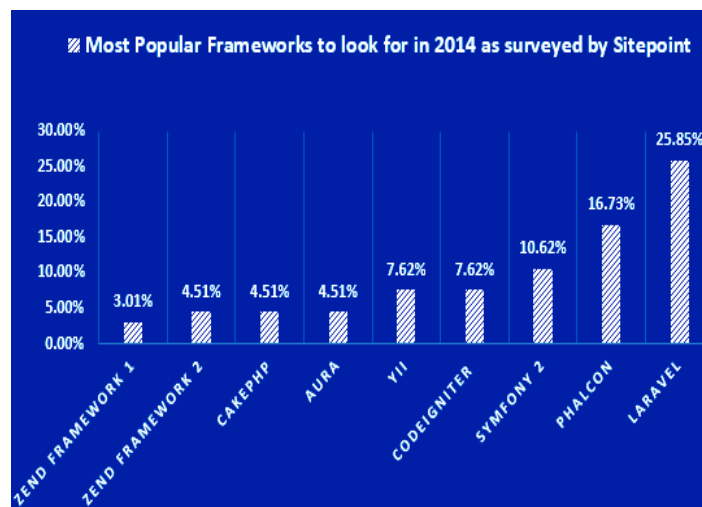


Fig. 4.2. 2014 Sitepoint survey for popularity of PHP Framework [9]

4.3 Sequence Diagram

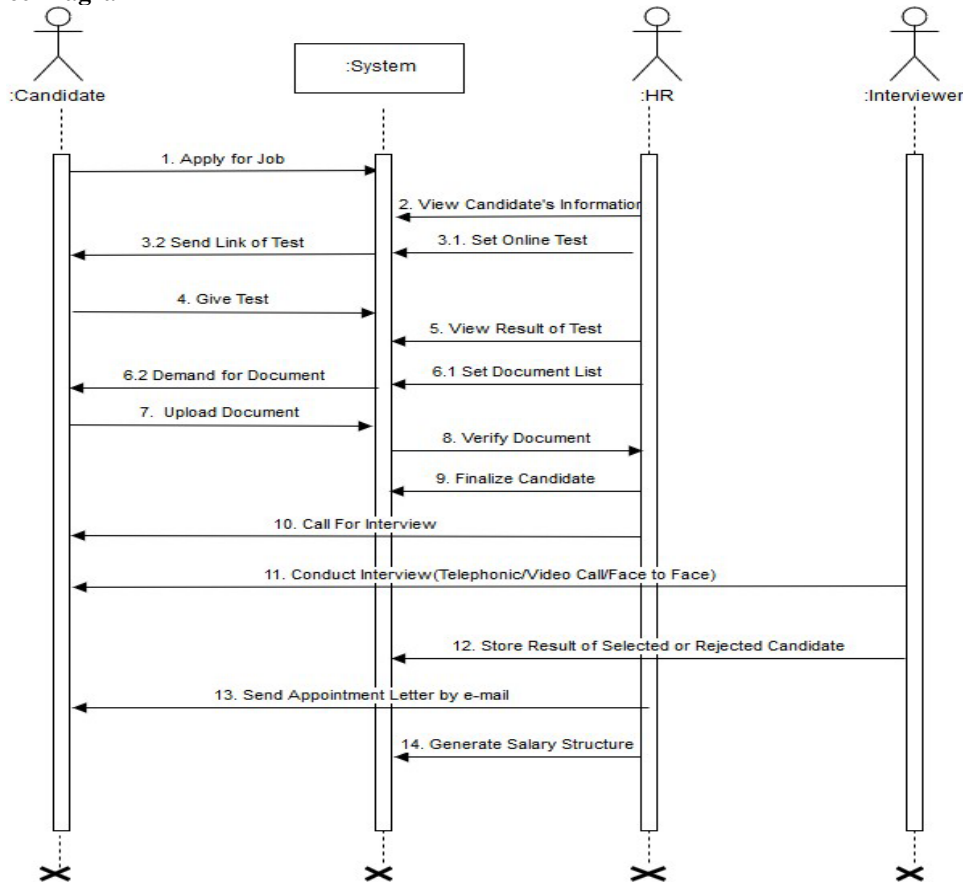


Fig. 4.3. Sequence Diagram of Proposed System

4.4 Flowchart

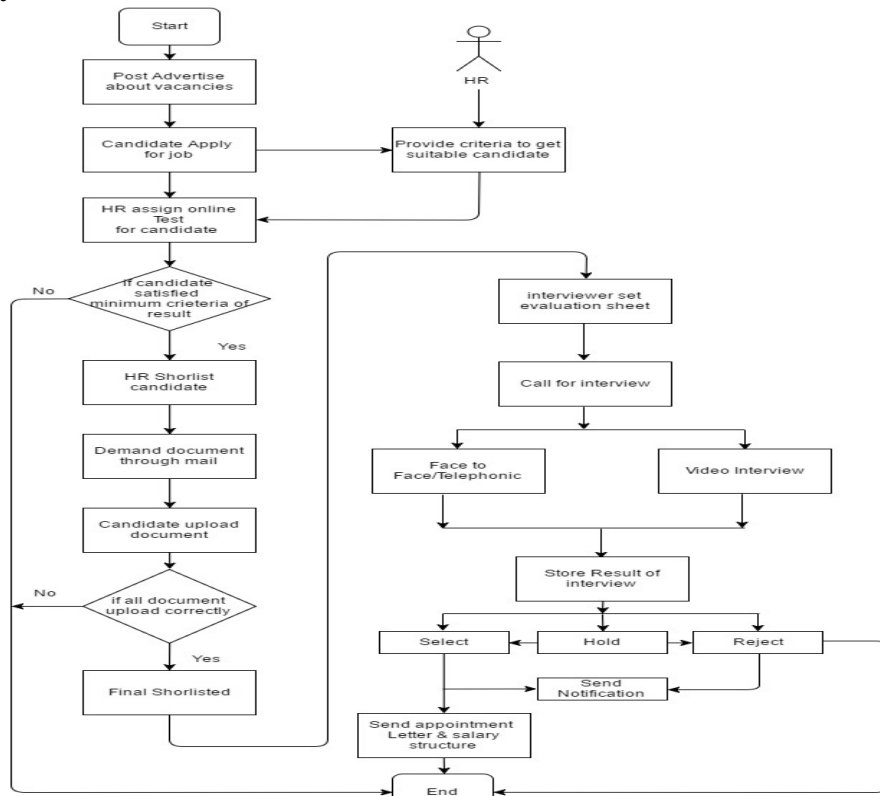


Fig. 4.4. Flowchart of proposed system

V. Conclusion

Thus, in the proposed system, we implement the general recruitment tool by considering all the activities of recruitment process. The tool is very functional, automatic and reduces paperwork. It also makes the recruitment process centralized. The functionalities like online test, online interview, increase the utilization of tool and make best impact on recruitment process. Use of laravel framework would enhance the development process. It provides security from different external attacks. It also helps for fast application development.

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