

## Automation of Student Education Verification and Services

Dr. L. Jabasheela<sup>[1]</sup>, H. Pooja<sup>[2]</sup>, Priyadarshini Venkatesan<sup>[3]</sup>,  
S. Sherline Calista<sup>[4]</sup>

Department of Computer Science and Engineering, Panimalar Engineering College, Chennai, India  
Anna University, Chennai, India

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**Abstract**— A Bonafide is a kind of proof that one is studying or working in a particular institution or firm for a specific duration. The certificate is demanded while applying for a passport, educational loans, universities, or when seeking a new job. In the same manner, a Letter of Recommendation is given to the admissions boards of the colleges a person is applying to. Rendering a Bonafide certificate, Letter of Recommendation and verifying a student's background is an obligatory activity of every college. However, well established institutions at times may find it tedious to issue them when the procedure is extensive or when there is a substantial number of applicants. The proposed system is completely automated which decreases the time consumption and manual tasks performed during background verification and while issuing a Bonafide or an LOR. Using this web application, the student authentication process, request approval and providing letter can be done on a single platform from any place making it quickly accessible. As an added feature, a unique software is developed that automatically parses the mail contents sent by a background verifier and matches it with the student database to find if the information is genuine or not with an automated reply email.

**Keywords**—Bonafide, Letter of Recommendation, Background Verification, Parsing, Automated

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### I. INTRODUCTION

With current technology era where almost everything is substantially automated, the need of quick and efficient services is almost important in every aspects of our lives. especially when it comes to medical services. Providing a Bonafide certificate, Letter of Recommendation and verifying a student's background is a crucial task of every institution. However, well established organizations at times may find it tedious to issue them when the procedure is extensive or when there is a huge number of applicants.

A bonafide certificate has different uses for individuals belonging to all categories. An institution or organization issues a bonafide certificate upon the request of students, graduates, or employees. Generally, the certificate is attested and signed by the head of the institute or organization.

Individuals may require a bonafide certificate in the following circumstances:

- Students appealing for concessions or student permits granted by public transport companies such as city buses, local trains and metros.
- While applying for a passport.
- For visa forms during the allocation of abroad student visas or working overseas as an employee.
- For providing to institutions that may ask for granting loans to students at concessional charges.
- To apply for student scholarships that are offered.
- It can be used across all categories at the time of passport and visa application or extension.
- Students when shifting schools, applying for educational loans, and seeking admission to colleges and universities.

A letter of recommendation describes a person's qualifications, ability and skills as they relate to employment or education. These letters typically come from previous employers, professors, colleagues, clients, or teachers. They usually deliberate about the qualities and the potentialities that the person possesses which makes them a good fit for a given position, college, or a graduate program. Applicants typically request letters of recommendation from qualified individuals, who then send them directly to the employer, other hiring personnel, admissions committee, or department. Recommenders may offer them the freedom to review the letter before they send it, but they aren't obligated or expected to.

A Background verification process is a comprehensive inspection of a candidate's educational background, degree obtained, credit scores and academic achievements. The process usually takes between 3-10 days for each candidate when the process is undertaken manually. In fact, every company runs a background check on one's resume/CV, when the whole recruitment process is over and are qualified by the employees.

There are many applicants who try to get hired by means of fake degrees and false employment records. A basic background verification check would uncover these frauds and cease them from hiring the wrong applicants.

Most of these processes are undertaken manually by humans which often makes it a very time-consuming task. The proposed system is a completely automated website application eliminates the need of man power and excessive time thereby making it seamless and impeccable. The students that require a Bonafide/Letter of Recommendation can directly raise a request for it right from their place of residence. After the approval of the higher authority it is made available to them in the portal itself. Similarly, a dedicated fully automated application is provided for Background Verification which the organizations can use to verify and send response to the verifier. When the application runs, the software automatically detects the unopened emails and parse/scrapes out the student's data and checks it with the database to find if a student with the same data is present or not. If a match is found, a reply mail is sent stating that the data is verified. If not, a reply mail is sent stating that data is not verified.

## **II. WORKING OF MODULES**

### *A. Request for Bonafide*

In this module, the student will register and then login with their login credentials. The students can request for the certificates such as Bonafide certificate and Letter of Request (LOR) to any selected staff by selecting the reason for the need of those certificates. The HOD can approve or decline the certificates which are requested by the students. If the HOD approves the request, the student will be notified and a pop-up message will appear stating that the Bonafide request has been approved. Following which, the student's name will be appended in the Bonafide template that is maintained already along with the seal and signature of the authority. The student can check the status of their Bonafide by logging into their account with the correct credentials. If the HOD approves the request for Bonafide, a download button will be provided in the student login page from which they can download their Bonafide.

### *B. Request for Letter of Recommendation*

In this module, the student will login with their login credentials. The students can request for the Letter of Request (LOR) certificate to any selected staff by selecting the reason for the need of those certificates. The reason for Bonafide must be selected from a predefined list. Upload a letter of your LOR and choose the faculty's name from the pre-defined list. Once the "Request for LOR" Button is clicked, the corresponding faculty is notified in their login. On approving their request, the student will be notified / a pop up message will appear in the login stating that the LOR request has been accepted. Following which, the contents of the letter will be appended in the LOR template maintained in the website along with the seal and signature of the authority. The student can check the status of their LOR by logging into their account with the correct credentials. A download button will be provided in the student login page by which they can download their LOR.

### *C. Background Verification*

This module is implemented in such a way that whenever background verification companies send email to institutions requesting for background verification for passed out students, the software automatically open the mail account and parse/scrape out the data and checks it with the database to find if the information provided is genuine or not. If a student with the same data is present, then a reply e mail is sent to the verifier stating that the details are verified. If not, reply mail states that the details are not verified.

### III. SYSTEM ARCHITECTURE

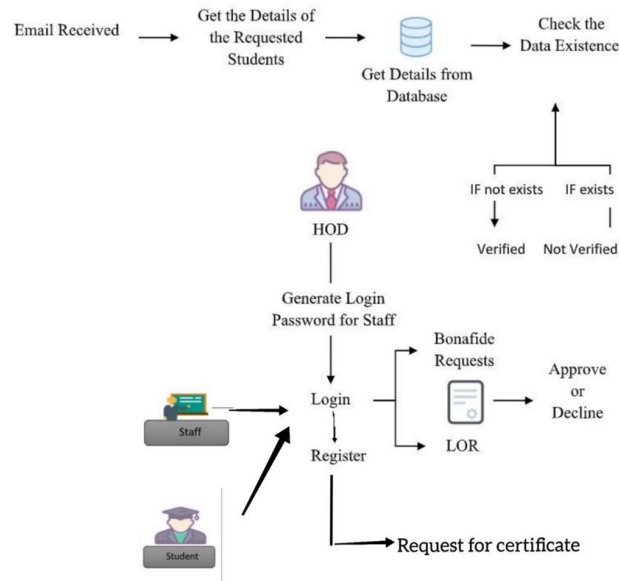


Fig 3.1

### IV. APPLICATION WORKFLOW

#### A. Request for Bonafide

Post Login, the request for bonafide is raised by the student on the website by clicking the appropriate button.

The reason for bonafide must be selected from a predefined list.

Click on the button “Request for bonafide”.

Once the “Request for Bonafide” button is clicked, the corresponding HOD is notified in their login.

The HOD can either approve or decline the request.

If the HOD approves the request, the student’s name will be appended in the bonafide template that is maintained already along with the seal and signature of the authority.

Following which, the student will be notified / a pop up message will appear stating that the bonafide request has been approved.

The student can check the status of their bonafide by logging into their account with the correct credentials.

If the HOD approves the request for Bonafide, a download button will be provided in the student login page from which they can download their bonafide.

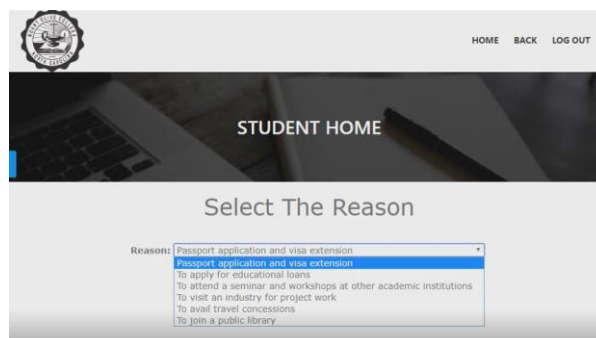


Fig 4.1

Date  
03/24/2021



University of TamilNadu  
Bonafide Certificate

BFC No : 7122665

This is to certify that Mrs/Ms priya with register no 9823 is the student of 2017-0 year (course)cse for the Academic year 2017-09-18 to 2021-09-17 He/she is the bonafide student of our University

Principal Signature

University Seal



Fig 4.2

B. Request for Letter of Recommendation

Post Login, the request for LOR is raised by the student on the website by clicking the appropriate button.

The reason for bonafide must be selected from a predefined list.

Upload a letter of your LOR and choose the faculty's name from the pre-defined list.

Once the "Request for LOR" Button is clicked, the corresponding faculty is notified in their login.

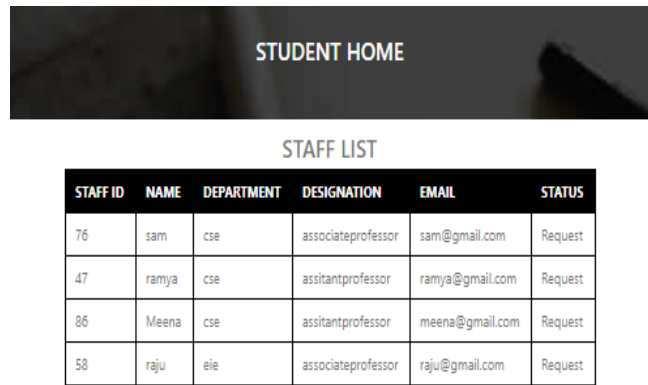
On approving their request, the contents of the letter will be appended in the LOR template maintained in the website along with the seal and signature of the authority.

Following which, the student will be notified / a pop up message will appear in the login stating that the LOR request has been accepted.

The student can check the status of their LOR by logging into their account with the correct credentials.

A download button will be provided in the student login page by which they can download their LOR.

Fig 4.3



**STUDENT HOME**

**STAFF LIST**

STAFF ID	NAME	DEPARTMENT	DESIGNATION	EMAIL	STATUS
76	sam	cse	associateprofessor	sam@gmail.com	Request
47	ramya	cse	assitantprofessor	ramya@gmail.com	Request
86	Meena	cse	assitantprofessor	meena@gmail.com	Request
58	raju	eie	associateprofessor	raju@gmail.com	Request

Fig 4.4

Dear Mr/Ms sam

It is with pleasure that I am writing this letter of recommendation for Seema to support her application for MS in Computer Science course at your esteemed. I have been teaching her for the past three years as a senior professor of the Computer Science Department at Delhi University. Some of the subjects that I taught her are Networking, Data Structures, Algorithms, etc.

The first impression that anyone forms of her is that of a person with outstanding technical knowledge and problem-solving skills. She was an inquisitive student from the first year and asked a lot of questions. Assignments submitted by Seema demonstrated her out of the box thinking and dedication towards the subject.

She participated in all the seminars and olympiads organized by our university-related to computer science. This kept her updated with the latest developments in this field. She was also an active member of our university's Computer Science Club. Her critical thinking ability and collaborative nature made her a favorite among students and professors.

Based on the last 20 years of teaching experience, I would place her among the top 10% of the students I have ever taught. I strongly recommend her to be considered as a potential student of MS in Computer Science at your university.

Your Sincerely



Staff Signature

Fig 4.5

### C. Background Verification

Initially, verifier sends an email to the institution requesting Background Verification or passed out students

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The software automatically detects the unopened emails and parse/scrape out the data.

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The data is cross checked with the database to find if a student with the same data is present or not.

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If the information is found to be genuine, then a reply mail is sent to the verifier stating that the “Data is Verified” else, the reply email states that the “Data is not verified”

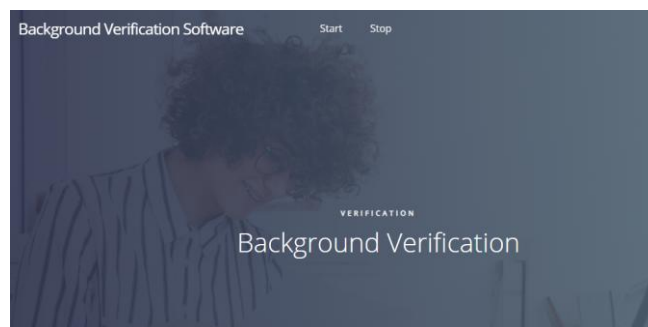


Fig 4.6

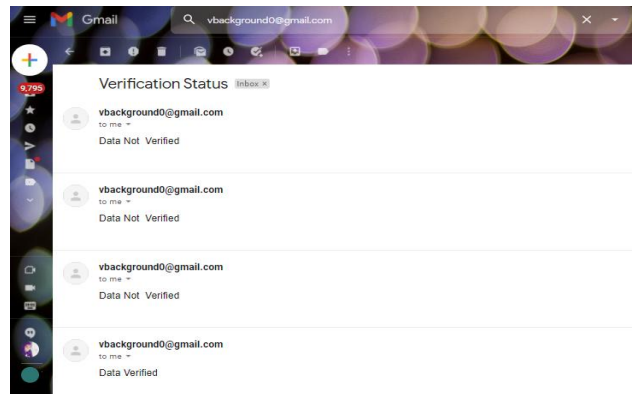


Fig 4.7

### V. PERFORMANCE ANALYSIS

Performance Analysis is majorly used to make sure that the loading time and the quality of the website is an asset rather than an obstacle to the users’ experience. It was done for both the websites to detect the quality and loading time issues. User experience is paramount and hence, it is considered as a very crucial step. The reports obtained are showcased.

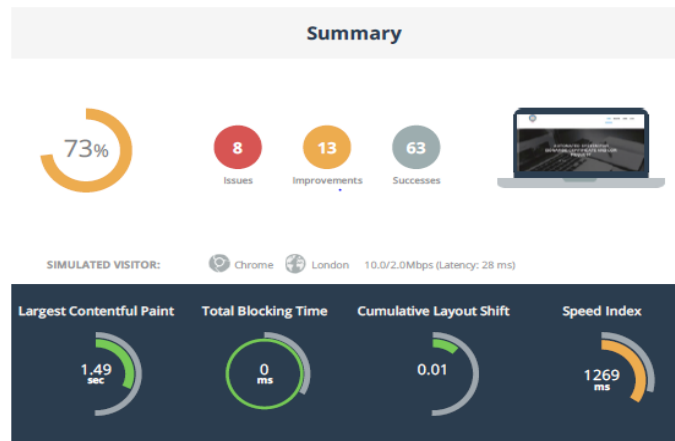


Fig 5.1

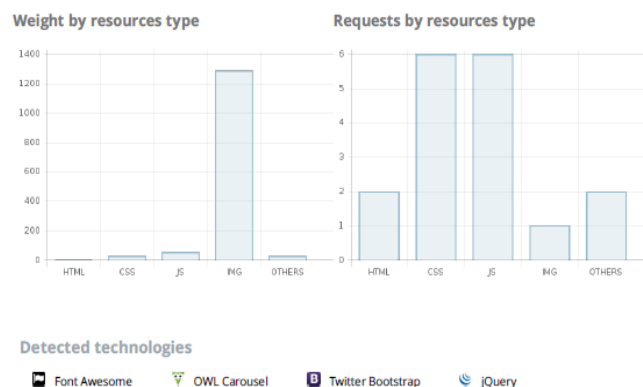


Fig 5.2

### VI. CONCLUSION

The proposed system will drastically reduce the amount of time required by the students and staffs to apply, process and issue a bonafide and an LOR up to a very great extent as it is completely automated. Students can avail them right from their place of residence even during times of emergency. Along with this the organizations can also make use of the background verification software to verify a student’s background immediately. It is definitely a mandatory thing to switch over from utilizing man power and make use of automated systems in this fast-paced world.

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