

**MASENO UNIVERSITY**

**SCHOOL OF COMPUTING AND INFORMATICS**

DEPARTMENT OF INFORMATION TECHNOLOGY

# **THE E-BURSARY SYSTEM**

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**PROJECT PROPOSAL SUBMITTED TO THE SCHOOL OF COMPUTING AND INFORMATICS IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY**

**MASENO UNIVERSITY**

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# **DECLARATION**

We certify that this project proposal is our original work and all materials herein which are not our work have been identified. We further certify that no material has previously been submitted and approved for the award of a degree by this or any other university.

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# **ABSTRACT**

There is a need to have a system with the necessary resources in filling, storing, and keeping track of bursary applications at Maseno University. With a population of over 15, 000 students, automating the process would reduce paperwork for both students and the involved staff and save time the students would spend queuing to submit forms. In the 21st century, making queues to submit forms ought to be something of the past. The E-Bursary aims to fill the gap by having a digital bursary management system for the university.

Maseno University is taken to be one of the best public universities in the country teaching Information Technology. They not only teach the students in the school of computing but also all those in other different schools. In the university currently, bursary applications tend to be conducted so manually that the forms to be filled are posted on the university website, from where the students should download and fill them. After having all the forms filled, the students have to submit the forms physically to the person in charge of the same. As if that was not enough, the person in charge has to manually go through the applications one by one eliminating those who have attached wrong files or rather forged and pick those who they trust as per the applications, to have every reason to be rewarded the bursary. Having done all that, the students have to patiently wait for so long without the knowledge of whether they were picked or not since the only way to know is if the bursary funds reflect on the student’s fee statement.

The E-Bursary system is web-based. This is because the majority of the students own smartphones or even laptops which can however access websites when connected to a network. A student will be required to visit the website once the application is opened, register then logs in. Afterward, the student will have to fill the form displayed to him/her then submit it. Once submitted, students will be prompted into a dashboard where they can keep track of the whole process.

If this system is adopted in the whole university, students will have a comfortable and easy bursary application experience with a system that eases the whole process as well as serves fairness to every suitable applicant since manual handling of forms would be done away with completely. Additionally, there will be a reduction of paperwork since now one will be required to print or submit any hard copies.

# **ACKNOWLEDGEMENT**

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# **CHAPTER ONE**

## **BACKGROUND INFORMATION**

## **1.1 INTRODUCTION**

In any institution of higher learning, technology plays a major role in aiding smooth and efficient learning as well as operations of the institution, Maseno University being of no exception. One of the main goals is ensuring that the sharing and access of information are easy not only to the staff but also to the students. Therefore, being in the twenty-first century, it would be extremely important for higher institutions to adapt to the ever-changing technological trends.

As one of the celebrated universities in Kenya, Maseno University has a ratio of 500: 1 student to subordinate staff. As it is evident, there exists a gap when it comes to student’s interaction with the individual staff, filing complaints about some discrepancies in the bursary application process as well as unfair treatment by some of the staff. It’s for that reason, a system is needed to fill in the gap identified above. The system will provide a platform where students would skip all the middlemen involved in the bursary application process as well as all the ill-treatment which may be experienced during the same. This will provide a free and fair application process which would ease the all-day commotion experienced whenever a bursary application is opened.

Students in this university experience challenges of having to find the staff to stamp or collect their forms and at times it’s to no avail. Therefore, this system offers to ease all the manual processes by not only automating them but also easing the whole process from application to vetting of the applicants. The system would also provide a platform where all the rejected applicants would get notified as to why their applications were rejected. This would play a big role to the students since they may correct their mistakes if at all they are granted a second chance to apply.

Having such a platform would provide students with easy time and minimize the chances of causing a commotion in any office trying to submit their forms before the deadline. To have such a platform implemented, it would be less paperwork for both the students and the staff and ease of operations.

## **1.2 PROBLEM STATEMENT**

Students in Maseno University depend on the integrity of their leaders to accept their bursary applications, go through a fair vetting operation and allocate the bursary to the selected few. The application is conducted so manually that the forms for application are usually uploaded on the university website from where they download and fill them. After all that process, the same students are expected to walk to all offices stated to at least get a stamp of approval that the information filled in the forms is true and to the best of knowledge of the staff. The commotion caused in all offices at some point, bring the normal operations to stand still to deal with the huge number of students. In the process, the obvious is likely to happen, from mishandling, slow service rendering to students, overwhelming the staff with the huge number of forms, and even likelihood of corruption based on how well one knows the staff. Finding the people responsible may be a hustle considering they may be busy at the moment you want them to serve you, it’s not a guarantee that they may be present every day, and just like any other student, you have lectures waiting for you at the same time you are awaiting service from the staff. Therefore finding time to go to the respective offices and get a chance to be served proves beyond reasonable doubt that it’s difficult.

## **1.3 EXISTING SYSTEM**

Students in Maseno University rely on the university website for communication. It’s from the same website where students download the bursary application forms, fill them and physically submit them to the Office of the SOMU Vice-Chair for vetting process and awarding. This system is not reliable since the students have to incur costs to download the forms and spend some quality time submitting the forms to the respective offices. Often, the student has to frequently visit the university website for communication about the application status, for example, whether the application was verified or not. If the forms posted on the website need to be corrected, all those who had downloaded the forms are required to repeat the whole procedure. A process that is not favorable at all to the students. In the event a student who expected the bursary to reflect on his or her portal fails to see the allocation, he or she must physically visit the SOMU Vice-Chair’s office for clarification, rendering the system very inconvenient.

Additionally, the probability of finding the SOMU vice chair, who is also a student in the office is very low since he or she may be absent at the time a student submits the forms. Those handling the forms too have to be extra cautious since forms may be misplaced, or even torn apart. This system serves over 15, 000 students a process that is tedious and takes more time. This shows how inconvenient and unreliable the system is.

## **1.4 PROPOSED SYSTEM**

The E-Bursary application will be a web-based application that will allow Maseno University Students to apply for the school-funded bursary (SOMU Bursary). The administrators will open and accept applications from the students and then the students will be required to apply for it online without the need to download forms. The web application will not only help students apply for the SOMU bursary but also have the following features:

* A section to download a list of the bursary beneficiaries.
* A complaint section where students who may have issues with not being shortlisted as a beneficiary will be allowed to file a complaint.

## **1.5 OBJECTIVES**

The following are the objectives of this proposed Maseno E-Bursary Project:

* To identify the issues associated with the already in place system regarding the Student Organization of Maseno University (SOMU) bursary application program.
* To evaluate the best possible measures towards ensuring an efficient, smooth, and fair bursary application process in the University.
* To design the proposed system.
* To develop a prototype of an E-Bursary Management System.
* To promote transparency in the disbursement of the school-funded bursary.
* To prevent discrimination against students based on their physical appearance and closeness to the SOMU staff involved in the activity.

## **1.6 LIMITATIONS**

Despite being such a promising project to implement, it has some limitations namely:

* For the student to access the system, he/she must have access to an internet connection.
* The system also can only be accessed using an internet-enabled device such as a smartphone, a laptop, or a desktop computer.
* The student must be computer literate to be able to navigate through the website with ease.

## **1.7 JUSTIFICATION**

At the university level, students need access to resources quickly and efficiently. This is very fundamental in the development of their skills and time management as they may need to be performing other different activities. Having this kind of resource available on their mobile phones, laptops, or desktop computers increases efficiency. In addition, students in the computing faculty or any institution should be able to understand the technological trends and their effects and be able to solve an existing problem using the best algorithm that addresses the issue. Thus, having a web-based application that fetches resources, executes the fetched resources, and provides updated information to the end-user is essential.

This proposed application will aid in offering students a platform to apply, track their bursary status, and a forum to present their complaints and get quick feedback from the SOMU staff. Elimination or reduction of long queues in SOMU offices will be possible because each student will be able to directly apply and track the whole process using their gadgets.

The proposed application will also assist the staff in vetting the applications and responding to complaints from students in a much easier and faster way. The staff will also be able to upload any news to the beneficiaries via the dashboard provided to them. The students will then be able to find all the uploaded updates in the web application and download them. The application will be a handy tool for the students because it will enable them to apply for the bursary in time and criticize delays of any kind.

# **CHAPTER TWO**

## **LITERATURE REVIEW**

## **2.1 INTRODUCTION**

Traditionally, services have been conducted face to face in such a way that for one to get any service their physical appearance would be very important. However, the wide distribution of computers, mobile phones, and communication technologies has made the whole process much simpler. Since the arrival of mobile phones in the 1980s, they have been widely used by people of all ages all around the world. It could be said that the whole world is becoming mobile; mobile phones and personal computers are not only communication devices but also portable and private pieces of technological equipment. Nowadays, mobile technologies are becoming increasingly networked. Such technologies can be used creatively in different areas. Using mobile technologies in organizations like learning institutions is a clear example of such an innovation. Laptops, Personal Computers, and even mobile phones equipped with internet connections have created the need for digitizing services such as job applications, learning and even conducting businesses. Internet-enabled communication devices can help students to access resources and services anytime, anywhere as long as they have an internet connection.

## **2.2 THE SCOPE OF REVIEW**

At the university level, students need access to internet-available resources. This is very fundamental in not only the development of their skills and class performance but also aims to bring the university services right into their devices. Having the services accessible via internet-enabled devices such as phones and laptops is a good practice. In addition, for the students in the faculty of Computing and Informatics in any institution, they should be able to understand the advancement of technological trends and their effects and come up with solutions for the existing problems employing the best algorithms that address the issues at hand. Thus, having a website application that fetches resources, processes them, and generates the output to both the students and involved staff in a more efficient way is good to them.

## **2.3 CRITERIA USED**

This literature review will be based on research about systems previously done, and which are related to this proposed system. The major focus will be on web-based applications that assist students to develop and grow their skills. Three learning applications will be reviewed and investigated on how they have assisted students in both developing and growing their skills. All the data collected about the various web-based applications will be analyzed and based on the analysis, the proposed system will be proved feasible or infeasible.

With the above at hand, existing literature will be subjected to investigation on web-based learning applications, the key concepts of the applications outlined, major relationships or patterns noted, key strengths and weaknesses identified and the research gaps will be outlined. The paper ends with a summary of agreements and disagreements in the literature, areas for further research, and the overall perspective.

## **2.4 HISTORICAL BACKGROUND**

Many web-based applications have been developed for mobile platforms. Over the last few years, these applications have been the focus not only of technical interests, but also marketing and business campaigns.

Recently, many researchers have focused on mobile and web technologies. This literature review will be based on a research about the systems previously done, and which are related to this proposed system. The major focus on the same will be on E-System applications which are already in existence whereby each of their strengths and weaknesses will be determined. E-bursary is a web-based application that uses that can be accessed using mobile phones, laptops, desktop computers or generally and internet enabled device with the capabilities to surf through the web. The difference between E-bursary system and the current bursary application is that E-Bursary system can be accessed anywhere at any time as long as you have internet connection while the current one you have to take your applications physically.

## **2.5 APPROACHES**

Approaches towards this review will be based on the web development learning applications that assist students learn more development skills. Therefore the functionality of this website will be determined and its strength and weakness evaluated.

To achieve this, the Internet and the research methodology of interviewing the former vice chair lady (Maseno University SOMU) Miss Loveline Kaari were the main research methods used.

## **2.6 PREVIOUS STUDIES**

After doing a broad research, the following web development applications were found to assist students in different levels of study. Such applications include:

**W3schools**

It’s a freemium educational website for learning coding online that was created in 1998 and runs from 1999 till date. Its name was derived from World Wide Web but is not affiliated with w3consortium.its run by Refsnes Data in Norway.

By using the online editor, one can edit examples and execute computer code experimentally, to see what works and what does not, before implementing it.

The drawback of this website is:

* The information presented isn’t usually that deep and explanations of why things work the way they do is often lacking.
* Has a huge amount of tutorials on different front end languages as compared to the back end ones.
* You can’t access the awesome tutorials without internet.

**Visual Studio Code**

Is an integrated development environment whose features include support for debugging, syntax highlighting, intelligent code completion snippets, code refactoring and embedded git version control.

One can also install extensions for additional functionality

The drawback of visual studio code application:

* The vast range of features might be overwhelming for beginners.
* Most of the syntax errors will be bypassed.
* It’s a new code editor and since teachers in colleges and universities don’t often engage in software development they might not be familiar with latest softwares in the market. This may hinder their teaching process.

**Udemy**

Udemy was one of the first education websites to offer up the courses. It currently boasts over 50,000 courses in total that range from science and technology to cooking and foreign language. Some of the other topics include business, marketing, entrepreneurship, design, health and fitness, music, photography, and there are even courses to help you learn software. The courses range greatly in terms of quality of content. There are both free and paid courses as well. The website is pretty decent. Many instructors add supplemental resources to lectures as a means to enhance the learning experience of the course. These resources can quickly be accessed on the website as well as the Udemy’s Android app to be viewed.

Udemy has however some drawbacks namely:

* Courses on Udemy come at a cost to access with the cheapest costing about $10.99.
* There are lots of “low quality” courses (made by instructors trying to make a quick buck recording course videos). Strong internet is required to access these course materials.
* The some courses capture so little when it comes to software development skills.

## **2.2 GENERAL CONCLUSIONS**

After analysis of the review was done, the findings were that there is not yet any website that can assist students within Maseno University to apply for the bursary apart from the university website where they were getting the opening of the application.

There will be need for a website that will assist in an easier way of disbursing the bursaries.

## **2.3 CONCLUSIONS**

In conclusion, the above literature review shows that there are efforts to assist students apply for the SOMU bursary by making a website available on their mobile phones and personal computers.

Having such a platform would provide students with easy time and minimize the chances of causing a commotion in any office trying to submit their forms before the deadline. To have such a platform implemented, it would be less paperwork for both the students and the staff and ease of operations.

As a result this literature review permits and qualifies the implementation of a website that will handle all the manual work that was previously there in handing out of the bursary.