Botswana Accountancy College

School of Computing and Information Systems

Simple Book Example

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Chapter 1

INTRODUCTION

1.1 BACKGROUND STUDY

Student admissions are an important part of any institution's operation because prospective students are what keep a university or a college running. Admission is one of the most important and crucial operations to be carried out in an institution because a university or college cannot exist without students. It is critical to understand that a poor admissions system means that only a small number of students are admitted to the university or college of their choice, or that this harbours an excessively slow response time. Admission processes are critical for both the institution and the candidate.

The admission rate in Botswana continues to increase as more student's progress from high school to tertiary institutions. By the academic year 2014/15, it was calculated that 25 825 learners were enrolled with colleges having a share of 39.2% and Universities having a share of 37.9%. With a slight decrease in the transition rate of the academic year 2017/18 compared to academic year 2016/17 of 9.5%. Enrolment in 2017/18 was standing at 59,243 with students admitted at public universities and 11 299 in private institutions. Studies have shown that there is an increase as the numbers continue to rise from 47,889 to 53 450 students admitted. Likewise, a lower transition rate indicates a low share of students progressing due to various reasons such as limited intake capacity of the tertiary education system.

Botswana has lost a lot of potential talent because of the strict selections caused by the availability of spaces in varsity. The situation is exacerbated further by the scarcity of available accommodations. Unfortunately, tertiary institutions cannot even admit a quarter of applicants due to insufficient facilities. Worse, the government's economic recession makes it difficult for students to even get sponsorship, even if they meet the university's set requirements. Statistics show that the year 2016/17 the government was able to give full sponsorship to 38 806 Batswana students. Based on the statistics

by year 2016/17, 30.19% of students managed to qualify and gain admissions into the university of their choice. The question that remains is what happens to the 69.81% remaining is anyone's guess. This project is directed towards that 69.81% that struggle to get admissions.

Currently, the admission process in Botswana requires prospectus students to fill out admissions forms online or even apply in person at schools. The issue is that if a student wants to apply to more than one school of choice, they must visit the schools to obtain admission letters and then submit them, which appears to be costly to them. The effectiveness of this method will be discussed as the project progresses.

1.2 PROJECT SIGNIFICANCE

The purpose of this project is to make tertiary admission application process a more conducive and easier one. With this project its aim is to design a system where our prospectus students can apply once to several institutions as well as have the privilege of applying for sponsorship.

1.2.1 PROBLEM STATEMENT

The COVID-19 pandemic has forced many education and training institutions around the globe to switch from traditional face-to-face applications to online methods. With pandemic still at hand it impacted the world at large we have seen many activities being halted and being stopped, and one great example is a career fair in Botswana. Many students are approaching educational consultants to get admission through Management quota. They take the admission recommended by friends or neighbours. They directly get the admission as they don't have enough time to enquire about different colleges. The transition continues to pose further challenges for developing countries such as Botswana in terms of the preparedness of training systems and the availability of digital technologies for online applications. Off current in Botswana usage of new technology in schools is very much limited. This has continued to pose as a major concern as young people continue to face high demands in a society which is characterized by a quick rate of change in the labor market due to the dormancy of globalization, use of technology in education system, increased dissemination of information, and numerous opportunities that continue to avail themselves. In today's world making a career choice is seen as a crucial phase in life and young people have a great responsibility for their own future career but at the same time the schools in general often lack strategies to increase young people's knowledge and to support them in their choices regarding their futures. Despite this challenge, students can apply to as many institutions as they want provided, they qualify. By this they must fill each form belonging to the tertiary institution, some

schools even require students to pay for admission fee even when they are not sure of being admitted. This is time consuming and costly. With this much information gathered we evaluate the impact of limited technology and poor admission system at hand.

1.2.2   PROPOSED SOLUTION

The key solution to avoiding all the problems mentioned is to find a unified way that solves the problem. The only unified way is by computerization. The intended solution brought forth by the system to the current system that involves filling forms manually for different institutions, is the use of a common application which will allow for students to fill admission forms once and apply to multiple institutions of choice.

1.2.3   AIMS AND OBJECTIVES

1.2.3.1   AIM

The aim of this project is to bring all tertiary institution applications in Botswana to a common interface. In addition to increasing the likelihood of prospective students being admitted to a tertiary institution.

1.2.3.2   OBJECTIVES

- To allow for filling of application letter and sponsorship letter

- Give users opportunity to submit applications to multiple institutions at once.

- determine whether is feasible to develop the new system

- identify the users of the system.

- Efficient and safe storage

- Quick retrieval of records and information

- Quick response to any enquires

- Assist in admission updating

1.3   PROJECT OVERVIEW

The project that will be developed is a mobile application system for all universities and colleges. In general, the prospective student will use the system to apply. A mobile application system is software that is beneficial to both students and tertiary institutions, because in the current system all process is done manually, and this necessitates a significant amount of time and manpower. All these issues will be addressed through the use of a mobile application system, which is designed to automate students' ability to navigate the system and find all relevant information about the course of their choice, as well as the ability to apply to their desired schools and receive sponsorship, thereby reducing paperwork. Almost all work is computerized in the system, and accuracy is easily maintained. All details and information about a student, tertiary institution, financial aid, and course catalogue can be handled by the system administrator. The details include tertiary details, course details, student personal details and to mention a few. It is the administrator's responsibility to insert, update, and monitor the entire process that will take place and all data is securely stored on a SQL Lite and Firebase database that ensures the highest level of security possible.

1.4   SCOPE AND LIMITATION

1.4.0.1   PROJECT SCOPE

This document presents a detailed description of the Moithuti Application system. It explains Features of the system, what the system will do. The project deals with various functionalities in application process, with an idea of implementing a proper system that can be used now and in the near future. Our system contains many operations such as opening account, applying for courses, applying for sponsorship. Within the system design/ model it deals with a student applying for a course from schools of their choice as well as sponsorship by filling in the forms and attaching relevant documents which are then stored in the database and display of student's details is retrieved from the database tables.

1.4.0.2   PROJECT LIMITATIONS

1.5   REQUIREMENT

The goal of this report is to analyze the functional and non-functional needs of users in order to develop and continuously improve the Moithuti Mobile App, which is absolutely essential. The information provided will be based on the functional requirement

specifications found on the Moithuti mobile application app. Our requirements were gathered by obtaining admission forms for Botswana's tertiary institutions as well as online applications. We know what common information tertiary institutions require when filling out forms based on these admissions.

1.5.0.1 REQUIREMENT SPECIFICATION

The system we decided to create is called Moithuti Mobile application. The goal of this project is to create a system that would act like an automated version of the manual student application system, with the goal of reducing human work while retaining accuracy. The system we are creating is designated to have four access mode or actors which is the User, Institution, Financial aid, and the system administrator. The administrator will be managing the system and be accountable for the whole process. To have access to the system, the application should be free to download from a mobile store provided there is access to the internet. The proposed system will provide users with relevant courses to register for along with the course catalogue. For the system to do so, it allows for the user to have an account, which means they must firstly log in if they already have an account or sign up if they do not.

To save time of the prospective users and to have information at the tip of their finger, the system will include a layer with various tertiary institutions along with respective courses offered categorised, which the user will navigate through at their own comfort time and get obtain information about the course that they desire and know where their course of interest is offered. The Moithuti mobile application will provide a rapid, dependable, and user-friendly mechanism for students to use when applying for a course of their choice and institution, with the system having a form that requires them to attach relevant documents such as their transcripts and a copy of their national identity card.

Once the institution has reviewed the application the approved prospective student will be sent admission via their email address that they would have provided when filling in the application form. The system is also convenient and effective in a way that it will allow approved students to apply for government sponsorship, but for self-sponsored students their process will end with them having received their admission letter. For those applying for government sponsorship the system will also have a layer that would allow them to fill in the application form and attach necessary documents.

The system will allow all applications forms filled in by the prospective students to be saved securely in a database and only the administrator will be able to access it. The database should also entail of the prospective student's full names, email addresses, cell number and passwords. The tertiary institution details and course details.

The system will be programmed in such a way that it can be used any day and at any time to prevent inconveniencing the users who will desire to use the system at their preferred time. This will also ensure that the Moithuti mobile application will attract more users thus helping a lot of prospective students to avoid the tedious process of manually applying for tertiary institution.

1.5.0.2 FUNCTIONAL REQUIREMENTS

The intended Moithuti mobile app has 4 core functionalities that will play the most impact of the system to the users. They are listed below:

- User must be able to download the Moithuti mobile application from Playstore.

- User can log in to the software or sign up.

- User must have a device that has the capacity to access internet.

- User should be able to change password.

- User should be able to use the application as a search directory to derive information about institutions.

- User should be able to manage their applications.

- Administrator should have a real time update on the system.

These functional requirements will define how the Moithuti mobile app will function.

1. User Login Home page entails of the: Search button

2. Courses category content

3. Institution's content

4. Email content

5. Campus information

6. About the institution

7. Sponsorship application content

8. Contact details of each institution

9. Terms and conditions

10. Moithuti Application privacy agreement

11. User Logout

1.5.0.3 NON FUNCTIONAL REQUIREMENTS

- The system should be readily available for download.

- The system performance and response time must be fast for instant information.

- The system should have a layer of robustness which means that the stored documents and login credentials will always be available and accessible.

- Application should be able to satisfy all user requirements mobility functions.

1.5.0.4 REQUIREMENTS MASTER LIST

ID NO.	FUNCTIONAL REQUIREMENTS	NON FUNCTIONAL REQUIREMENTS
Req1	Student must download the Moithuti mobile application to their device.	Application shall be readily available to download from Android Google Playstore.
Req2	Student can install the system into a phone.	System should be available for download.
Req3	the user must have a phone that is connected to the internet enable the user to access the online application database.	The system should be fast and responsive.
Req4	Student must sign up to create account and get access to the app.	Account creation should be easy and straightforward to execute.
Req5	Student clicks the sign-Up button.	Button redirects user to the sign-up form.
Req 6	Student should fill the sign in form.	Form should be clear to understand and easy to use.
Req 7	Student clicks the register button	The button redirects student to home page.
Req 8	Student must login to the system.	The login process should be fast.
Req 9	The system then validates the login details.	The application should save credentials of the accounts.
Req10	The student receives a login successful message.	A quick pop up message appears to the user appears which is easy and clear to read
Req11	Student should be able to reset password.	The system should allow students to change passwords.
Req12	User who already have accounts can click forgot password button.	System should provide the user with the forgot password button to enable them to retrieve their account.
Req13	After successful login, Student must be able to navigate through the software.	Navigation should be easy.
Req14	User should be able to deactivate account	System should allow user to deactivate account
Req15	Student must be able to view the home page.	System should provide on-the-go information.
Req16	Student must be able to view the course catalogue.	System should be user friendly.
Req17	Student must be able to view course catalogue in real-time.	The system shall update the course catalogue.

ID NO.	FUNCTIONAL REQUIREMENTS	NON FUNCTIONAL REQUIREMENTS
Req18	Student can click institution button.	Button redirects to the institutions page.
Req19	Student should be able to click course button for more information.	System button should respond in time for instant information should be at the fingertips of users.
Req20	Student should have access to the About page of each institution.	Application should satisfy mobility.
Req21	Student should have access to the contacts of institutions in cases of clarity.	Application should satisfy versatility.
Req22	Student can click the apply here button to register for their desired course.	The button redirects the user to the institution Application form.
Req23	The student should fill in application form.	The form should be convenient and easy to fill.
Req24	Student should be able to attach necessary documents.	System should allow attachment of files and documents.
Req25	Student should be able to click send the submit button to send their application.	The submit button should be responsive and fast.
Req26	User can click cancel button to cancel the application.	System should provide the user with an option to navigate back.
Req27	The student should receive the 'Application successful' message.	A quick pop-up message appears to the user.
Req28	Student must be able to retrieve their application from the system.	System should provide security backup incase the data gets lost or damaged.
Req29	Student should be able to go back to a certain step in cases where the device shuts down.	System should save all the progress of the user before abnormal happening.
Req30	Student should be able retrieve and submit course application to administrator's email.	System should give access to the administrator to receive application emails.
Req31	Student shall have an option button to apply for sponsorship.	The button will redirect the student to the application form.
Req32	The student shall fill the application form.	System should allow the form to be edited.
Req33	Student should be able to attach required files on the application form.	The system must provide a paperclip link to indicate that files can be added.
Req34	System can be accessed by the student and administrator only.	System should provide Security and Privacy Policy.
Req35	Student should be able to access the application anytime, any day.	System should be reliable and constantly available.
Req36	Administrator information should have real time update.	The system should be able to backup data.
Req37	The system allows user to log out	System must have a log out button.

Chapter 2

BACKGROUND LITERATURE

2.1 LITERATURE REVIEW

In the last decade we have seen tremendous growth in the use of mobile phones by not only the public but by students in the higher sector, with students being able to navigate through the device and use them to their advantage. The immense availability of mobile devices offers an opportunity for the students to integrate into the educational sector by looking up different varsity constituted. In one application system that gives them an opportunity to apply for courses and sponsorship at once. To come up with a solidified proof that indeed the poor admission system is a challenge, a Questionnaire was conducted and response from intended audience. According to (CITE)'In the absence of a 'unified' or 'Cluster system' of admission test, students must buy forms of different universities. Not being certain of getting admissions to the university they want to study in.' when we compare the above statement to what is currently happening with the application process of tertiary institutions, the same problem is faced. It is not by doubt that a unified system which is being brought forth will save the students the worry and time of filling multiple forms manually. Infact, an opportunity of having to submit their applications to more than one institution will increase their chances of being accepted. Although some institutions have their own websites it is very important to acknowledge that most of the websites are not student friendly based on the fast that they are difficult to navigate, and the only solution is a unified student application system.

Online-Registration Systems Several registration systems are in use in Botswana's universities and colleges, some of which support online registration and others do not. The THITO of BAC and UB is one example. Some of these systems are developed internally by software development teams in each university or college's computer center (IT). This registration system differs from others in that it is an ALL-IN-ONE Registration System. First and foremost, the system is explicitly used to assist students in applying

to multiple schools through a single system, as well as applying for sponsorship.(CITE)

COMMON ONLINE APPLICATION SYSTEM The Online applications system are intended to accord anyone seeking admission into University of Botswana and BAC study programmes to apply online provided they have an email account. Prospective applicants may use any Internet facility available to them to apply. It is important for each and every prospective applicant to carefully read all admission requirements and other related documents enclosed as A Guide to Prospective Applicants under "STUDY" before s/he applies for admission. With the BAC application system prospective applicants get to click the browse Catalogue button.(CITE) The use of this system makes the chances of applicant admission to a college higher as there is a presented opportunity to apply to multiple universities at a time. The use of an online system where forms are filled and that same forms being sent to all selected universities in just a single click save students the time of having to fill multiple forms manually and submitting physically.In Botswana students or prospective applicants do not have the privilege and opportunity of searching for schools based on their major in the common application. The students applying for the university admission will have a particular course they would want to study. So, if they are given the chance to search for universities of their choice based on the course they would like to offer, it automatically cancels the risk of applying to a university that does not take an intended course of study. There should also be a comprehensive information about each member institution such as a link to an institution official website. This will help students with a fair idea of the institution they are applying to. As a result, if they are given the opportunity to search for universities of their choice based on the course they wish to offer, the risk of applying to a university that does not offer the desired course of study is eliminated. There should also be detailed information about each member institution, such as a link to the official website of the institution. This will give students a good idea of the institution to which they are applying.

THE NEED FOR A UNIFIED STUDENT APPLICATION MANAGEMENT SYSTEM In a fast-growing, global country, an effective and efficient educational system is essential. Students can perform better when educational institutions are prepared to meet global and international standards. Establishing a student application management system is the first step toward reaching this goal.(CITE) When universities and colleges in Botswana and around the world adopt student application management systems, a lot more can be archived and executed with less effort. One major advantage of student applications is that admissions processes become simpler and faster. Universities receive hundreds of thousands of applications from aspiring students almost every year or at the start of the academic year. Unfortunately, not every student is able to make the cut. Administering a rigorous legal vetting of documents and evaluating process can be time consuming and difficult to apply consistently since most colleges and universities

do not have online application systems and are forced to do things manually. With ever-increasing competition, new tools and technologies are developed almost daily to help universities raise their visibility and increase applicant conversion.

ADVANTAGES OF STUDENT APLLICATION MANAGEMENT SYSTEM The use of a student application management system aids in cost reduction. Previously, students had to spend more money on making copies of their transcripts as well as traveling to prestigious schools to collect the forms. With the implementation of the student application management system, evaluations will be computerized and faster. This eliminates the need to spend money on printing materials or files that would then be used to transfer data from one unit to another. Electronic storage is also more efficient and environmentally friendly. This, in turn, has a positive implication for financing. Using an application management system saves management money that would otherwise be spent on mishandling and incorrect processing. Another advantage of a student application management system is its accuracy. Errors with names and numbers, as well as mishandling of documents, may occur during manual document collation. Using a student application management system reduces errors because an AI tool verifies authenticity and consistency. When a mistake occurs because of incorrect information or unverifiable details, students are given feedback. (cite)

A student application management system provides educational institutions with a global reach and outlook. In addition to processing and verifying applicant information, systems are programmed to assist educational institutions in monitoring market growth and development. Every entry into the registration portal can be tracked and quantified in order to account for where and how applicants learn about the HEI. As a result, data such as the number of applicants can be tracked.(cite)More than anything, making the admission process more accessible to prospective students helps an institution to have more applicants and, ultimately, more enrolments. As globalization shrinks the distance between places and people, now is the time for HEIs to focus on growing. The strongest tool to ensure this growth is a robust student application management system. INFORMATION SECURITY Most campus management system tools developed for higher education management are intended to provide complete security of students' information. When applying for a course of study and a tertiary institution, students must provide personal information, financial information, and other vital information. However, before sharing this information, students must ensure that it is secure.

When it comes to higher education management, it is critical to understand that they are dealing with young adults who are cautious about the information they are sharing. If the institution requires students to share their financial credit scores, they must provide adequate support and persuade them that the information is secure. As a result, one of the most significant benefits of a college management system is that the information of the students is safe and secure. (cite) INFORMATION UPDATE There is no need to worry about updating information while using a college management system. This

is something that can be done automatically and even in real time. There is no need to keep separate hard copies of all information because it can be stored in a centralized database. Once these are updated, all that is required is to enter the information into the centralized system, and the system will automatically be updated with the most recent information. If there are concerns about software updates, they are also performed automatically. Usually, a software-based college management system is a service provided by a third-party.

As a result, the company providing Software-as-a-Service, or SaaS, will update the software automatically. There is no need to worry about updating information or software. As a result, college management software can be extremely beneficial in higher education. It assists the college administration in gaining a thorough understanding of the institute's operations and assists students with their studies through the use of e-learning tools. Using a software-based college management system will also help to alleviate the administrative burden on your college's administrative staff and simplify the entire college management process.(cite)

THE NEED TO APPLY TO MORE THAN ONE COLLEGE/UNIVERSITIES
After applicants have visited colleges and narrowed down the list of schools to which they are interested, it is time to decide where they will apply. There is no right or wrong number of applications to submit, whether two or seven, but applying to multiple colleges is strongly advised for a variety of reasons. With little knowledge of what is available, students tend to apply to the one or two tertiary institutions that they believe they can get into, feel can afford, or simply feel comfortable attending for reasons such as knowing someone else who is already enrolled and attends the same tertiary institution. The less they know about admissions and affordability, the more benefit there is in applying to a more diverse list of colleges so that they can get a clearer picture of their true options as they progress through the application, admissions, and financial aid processes. That doesn't mean they should throw a ball of colleges and apply to the ones they land on. Community colleges, universities, technical colleges offering two-year degree programs or6 months programs, private colleges, colleges that are close to home, and colleges out of the village can all be on an applicant list. Take note that not applying, means no admission into institution of choice. (cite) Applying for college has become much more competitive in the past two decades. Just because an applicant meets an institutions minimum entrance criteria does not guarantee you an acceptance letter. Applying to multiple schools increases your chances of acceptance. Apply to the colleges an applicant wants to attend as well as at least one safety school. Most experts recommend applying to a couple of reach institutions, several tertiary institutions that a prospective applicant believe are a good academic and social fit and a couple of safety schools. What happens if an applicant applies to one dream school and one safety school that they are not thrilled about, and they are not accepted into their first-choice college? Attend the safety school that was only a backup plan in your mind? If they are unsure of where

they stand academically, perhaps because they earned good grades but attend a large high school where it is difficult to determine where you truly rank, applying to six or seven colleges with varying entrance criteria and different student body numbers may provide you with multiple options to determine best fit, which may even surprise them. However, keep in mind that most college applications require a fee. A good example is the University of Botswana and the Institute of Health Science. Applying to schools where you know you won't meet the basic entrance requirements can cost you money. It is best to save that money and put it toward college costs if you are accepted. Chances are that an applicant has specific need that only few colleges meet If only a few colleges fit an applicant specific need, then they do not have to apply to a ton of colleges. If they want to be in a very specific location or pursue a major that only a few schools have, then you may only need to apply to 2 or 3 colleges. What they need to do is look up the course catalogue to see which school is best when it comes to offering the course of choice

Chapter 3

DESIGN AND ANALYSIS

Figure 3.1: A sample figure.

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