Design And Implementation Of Bowen University Cafeteria Evaluation Platform

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Abstract—**Food as it is known is health and health in turn is wealth; which depicts its basic necessity and always remaining in high demand because of this genre. There are different food service providers which includes the restaurants, fast foods, cafeterias catering operations, food carts etc. Also, a good sanitation environment and service in cafeterias are essential not only to minimize direct and cross- contamination of food but also to increase the morale and efficiency of workers and to bring satisfactions the customers from and aesthetic point of view of sanitation which is more than just cleanliness but includes all practises of hygiene such as protection food from the risk of contamination, harmful bacteria and poisons. Hence, University Cafeteria is one of the largest sectors of a foodservice provider, and the students and staff depends solely on them making the market to be growing rapidly. Thus, it is important that university cafeteria be monitored frequently or periodically, and also, improved comprehensively so as to retain the satisfactions of their customers on campus. The objectives of this study is to explore the importance and performance of the various cafeteria operators in the campus by designing and developing an evaluation platform system for the ratings of the cafeterias using c# language of Microsoft visual studio.Net framework 4.0 technologies, MS-Server 2006 and SQLite. Also, windows phone that uses XAML which stands for Extensible Application Markup Language and a declarative based language by Microsoft is used for initializing the structured values and objects was employed. The system evaluation is a user-friendly package that uses the following quality attributes of cafeteria services such as to the food price, quality, quantity, personnel, sanitation, services and environment to create an evaluation platform structure of the system in order to give a more detailed information of the happenings in the cafeterias so as to bring about more efficient and qualitative services to both staff and students who are the customers.**

Keywords—Bowen University Cafeteria; Foodservice; providers; Evaluations platform

I. INTRODUCTION

Cafeteria as the name implies is a type of food service location in which there is little or no waiting staff table service which can either be a restaurant or within an institution such as a large office building or on a standalone building which seem in many institutions of higher learning in Nigeria (13).

The demand for a quality university cafeteria service by students and staff on campuses is the norm found in most campuses globally which Bowen University is one of such. Cafeteria service needs is an important area that needs more research and should be monitored periodically and improved comprehensively since it represents a substantial portion of the students energy intake when academic activities is on. Hence, as important as offering quality education is paramount in many institutions so also should the provision of good and quality food services be more emphasised in order to retain the students[9]. Hence, the Administrators should put more attention on the quality of services provided by the various cafeterias in the campus [2].

Bowen University with the total population of about 5000 students and close to 1000 staff comprising of both the academic and non- academic is a residential private institution owned by the Nigeria Baptist convention and named after Reverend Thomas Jefferson Bowen who was the pioneered the Baptist work in Nigeria in 1850. The government approval was in 2001 but commenced its academic activities on the 4th of November, 2002 with the total population of students to be about 500 and is known as a centre of learning and research of distinction with academic excellence and love of humanity which is borne out of a God-fearing attitude. The guiding philosophy is excellence and Godliness which is in accordance with the ethical behavior, social responsibility and democratic ethos of the Baptist tradition. There are nine cafeterias that are used in the services of both staff and students in the campus also have an approval from the management of the institutions for the sustainability of the students who are not allowed to cook in their hall of residents [5].

The cafeterias are Sumptuous, Lonpus, Kemibee, Munchies, Buwa, Blessed, Y2K, Glory Canteen and Jubilee which is owned by the university authority where hygienically prepared meals of a wide variety of meals ranging from traditional dishes to

intercontinental dishes, the school cafeteria runs on a Pay-As-You-Eat basis, making eating habits of students to be as flexible as possible in order to suite their academic schedule within the university. Among these cafeterias, six (6) of them are located at the temporary site of the university and the three others are at the permanent site [5].

The university catering board which is under the student affairs units of the institution conducts the evaluation among the cafeterias; this is done on monthly basis headed by the chairman which is an academic staff appointed by the vice chancellor undertake the evaluation exercise with the other members in the board ranging from some selected academic, non-academic and the student representatives. In the evaluation analysis, there are laid down rules, expectations and processes to be followed such as the meals, environment, storage facilities of foods commodities, cooks, and medical records of the chauffeur and servers of the cafeterias and in all these, the personal, kitchen and food hygiene took the utmost proportion of the inspection by the board in order to help in the improvement of the performance and output of the various cafeterias. In the cafeteria services, the menu is fixed and displayed on large board or behind the counter and the customer will then indicate the choice of food he/she wants with their lunch credit card or cash as the case may be.

Statement of the problem

Hygiene (which comes from the name of the Greek goddess of health, Hygiea), is a set of practices performed for the preservation of health. Whereas in popular culture and parlance it can often mean mere 'cleanliness', hygiene in its fullest and original meaning goes much beyond that to include all circumstances and practices, lifestyle issues, premises and commodities that engender a safe and healthy environment [1]. Hence as the issue of how to improve and enhance the performance of the cafeterias is considered where it is believe that what we eat intimately affects our environment as well as our personal health even provides a unique opportunity that connects us to our community, institutions and ecosystems. Thus, it was discovered that the catering board of Bowen university makes use of a manual method of documentation of data which lacks the facility of getting feedbacks from the students and staff who are the consumers; also data loss and errors after the final analysis of the evaluation for the monthly evaluation of the cafeterias in the institution can occur. Also there are existing limitations found in the manual process such as Evaluation of data can be cumbersome, Limited information about cafeteria handling, no automation and longer time to ascertain the hygienic state of the cafeterias. Hence this research seek to design and develop a platform that will serve as a tool for the evaluation of the performance of the various cafeterias operating in the institution in order to serve as a sustainable ladder for the lifestyles and happy, healthy living for both staff and students.

Purpose of the Research study

The objectives of the current study is to explore the importance and performance/satisfaction of cafeteria service consumers by designing and developing a performance evaluation platform form for the evaluation of the cafeterias using XAML, which stands for extensible Application Markup Language and C# to collect, manipulate and keying of the data received which will be sent to the database also aid in the further evaluation rating of the performance of the various cafeterias in the institution.

2. REVIEW OF RELATED LITERATURE AND STUDIES

Cleanliness and personal hygiene of food and their workers are extremely important in the cafeteria services and food establishments. This means that all employees shall maintain a high degree of personal cleanliness and shall conform to good hygiene practices during all working periods; also, several guidelines were enumerated in the paper of Alvarez, 2010. In addition Shahin 2001 in his work discover that the information on service quality gaps can be source of guide for the evaluators to use in analyzing where performance improvement can best be targeted thereby bringing about change in the customers perception and expectations. Batra and Ramapuram 2005 in their research had a hypothesis that was divided into 3 groups where a conclusion was drawn to consider which of the attributes is more significant for maximizing and satisfaction to the consumers and all is on the basis of restaurant the attributes such as atmosphere, convenience, service and food. Also the manners of employees and word of mouth dominate the respondents' perceptions with other aspects such as price, playing a surprising small role which serves as a determining factor for the expected quality service [7].

Furthermore, in Andaleeb and Conway 2006 research work, it was discovered that factor analysis was done to measure the customer satisfaction in restaurant industry which shows that empathy and assurance are not used to determine the service quality while finally in Munhurrun and Prabha 2012 describes in their research work the importance of cafeteria workers to pay more attention in providing friendly services which will make the customers to feel valued. In all this review, we discovered that most of the various existing systems were not analyzed with lay down formats where customers who are the end users are given opportunity to evaluate the services rendered to them.

3. Our Proposed System

The system was developed using C# language of Microsoft Visual Studio .NET framework 4.0 technologies, MS-Server 2006 and SQLite relational database management system that contains a C programming library (Wikipedia). It is not a client–server database engine but rather serves as an embedded system through the SQLite library into the program which becomes an integral part of the

application program. The system has two – tier architecture which comprises of the following: (i) the business-logic tier which serves as the middleware responsible for processing the user's requests. The MS-SQL would be employed for all business-logic processing and request. The language used in this tier is C# language. (ii) The database tier; this serves as the repository containing various tables of the systems details (names of staff or students cafeterias, levels, departments). It also stores the entire database as a single cross-platform file. The language employed here is the structured query language (SQL).

3.1. Methodology

The system is a user-friendly package that uses the created evaluation platform structure by the system to give a comprehensive information, and also, analyze them thereby showing the ratings of each of them which serves as a means to quantify their performance efficiency with to respect to their services to both staff and students. It made use of a social interaction mechanism. Windows phone that uses XAML which stands for Extensible Application Markup Language and a declarative based language by Microsoft is used for initializing the structured values and objects. Also, is a variant of XML in describing the GUI which is used as the user interface (UI) where the system mandates the user to go through the evaluation questions provided and requires that the questions should be answered correctly in order to for them to have access to the system. The answers obtained through the windows mobile phones, however, would be entered into the database by the administrator as part of the cafeterias' assessment in the university. Figure1 below shows the Use Case diagram illustrating the flow structure of the proposed system Bowen University Cafeteria Evaluation Platform:
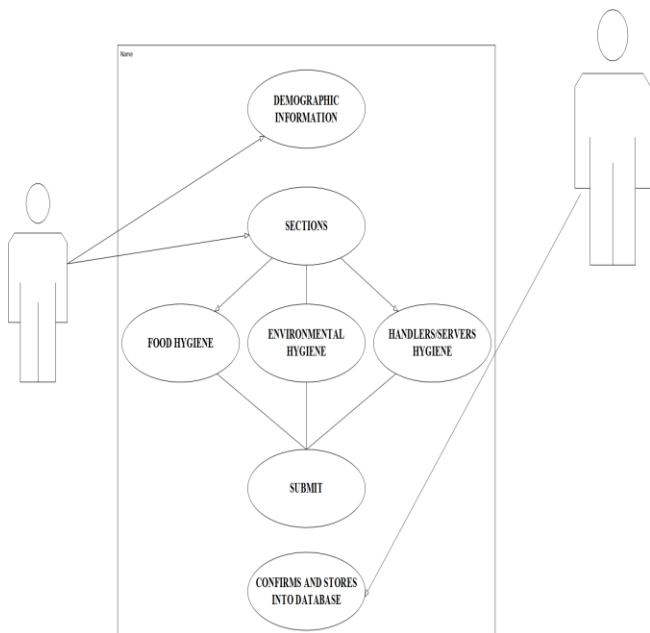

Figure1: Use case diagram of the proposed Bowen university cafeteria evaluation platform

4. Results

The illustrations and the following screen shots below shows the evaluation platform created for analyzing the cafeterias in the university: Figure (2) shows the bio data for collecting information about the person answering the questioner/ using the application, the gender of the user, the age group of the user, the nationality, the religion of my user. All this is needed to understand the user's point of view and ethical cultures which based on the questions before the user, Figure 3 shows the bio data the users marital status whether single, engaged or Married faculty and the department of the user such as Social and Management Sciences (SMS), Science and Science Education (SSE), Humanities (HUM), Agricultural Sciences (AGRIC), College of Health Sciences(CHS) and Laws, Figure 4 shows level of the users which would show a better enhancement in the rating cafeterias, Figure 5 shows the evaluation platform chart 1 of the various Cafeterias which is mainly directed at meals served in the Bowen university cafeteria, the user filling or using the designed application form question to find out which of the cafeterias have the best enjoyed meal in terms of how much he has enjoyed the meal served in the different cafeterias, and also, will rate the cafeterias on a scale of 0-5, question. This is directed in finding the cafeterias with the best quality and quantity meal. Figure 6 shows the evaluation platform Chart 2 of the various Cafeterias to indicate the cafeteria that has the best meal presentation, with respect to the well-presented meal as relating to the hygienically status, appealing to the consumer that is the user. Also, rates the cafeterias with their meal presentation on a scale of 0-5. Figure7 presents the evaluation platform Chart 3 of the various Cafeterias which directed at finding out the cafeteria that students' get the largest quantity of food for consumption, this is not a new fact that students go after quantity and only very few go after the quality food. Figure 8 shows the evaluation platform Chart of the hygienically environment of the various

Cafeterias such as the one that has a dedicated hand washing sink with soap and clean water that can be used before and after eating meals in the cafeteria and the one that houses pest, rodents and flies on meals in order to identify the cafeteria with this hygienically problem, thereby helping to control any diseases or infectious that would come up as a result of the unhealthy environment prone to problems. Also, help in knowing the corrective measures to be imposed on such defaulters. Figure 9 shows the evaluation platform chart 2 of the hygienically environment of the various cafeterias with respect to the cafeteria that is clean and tidy, and without dirty or left over plates on the table after. Figure 10 shows the evaluation platform chart1 for servers and staff of the various Cafeterias which deals with the servers/staff in the cafeterias helping to identifies the cafeteria that has the best set of meal servers and cooking staff and has meal servers and cooks that

adheres to the rules of the use of hair cover and apron when serving and preparing meals in order to avoid to prevent hair from getting into the meals being served and prepared. Figure 11 shows the evaluation platform chart 2 for servers and staff of the cafeterias that maintains clean short nails and are not in the habit of keeping long nails which can inhabits germs easily. Also, they do not have habit of biting and spitting out chewed nails in the cafeterias and dresses according to the mode of the catering standard. While figure 12 shows the evaluation platform chart 3 for servers and staff of the various cafeterias that uses hand gloves as a means of protection in order to reduce direct contact with the meals that is meant for consumption in the cafeterias; and finally, figure13 shows the submission Page. This is mostly when all the responds to the questions have been answered by the various respondents then submit button function is entered which shows that the processes are completed. This in turn saves and stores all the rating done on the cafeterias in university and also closes the evaluation platform application for further analysis to be done by the evaluators.
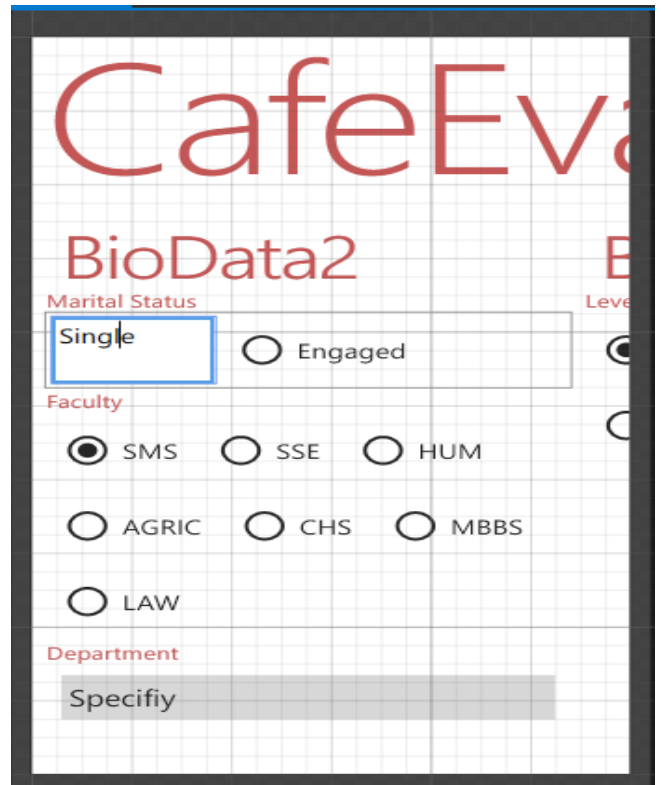
Figure 3: Bio data showing the Martial status, Level and Department of the user.
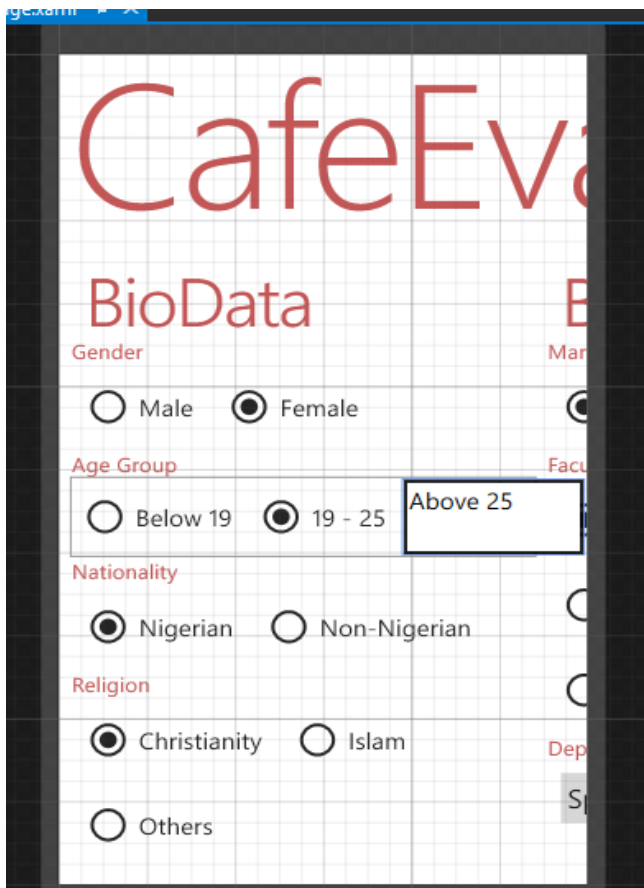
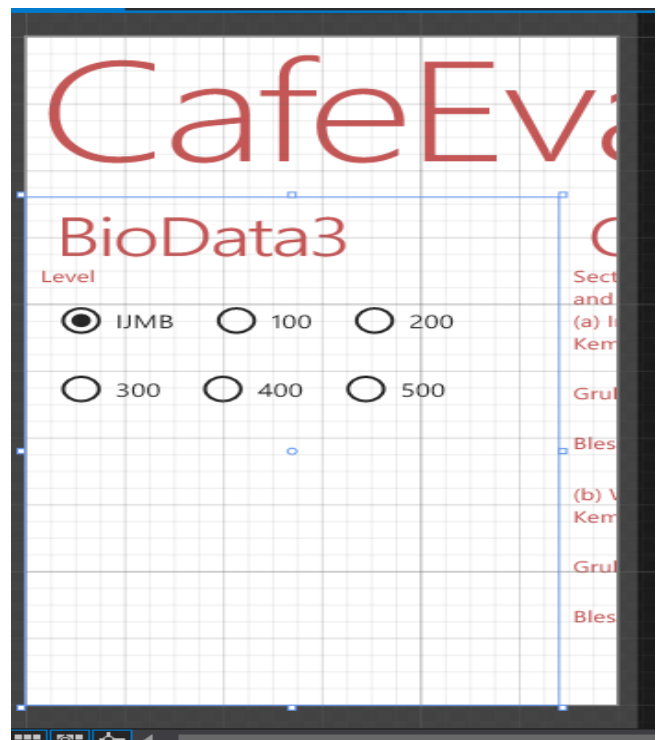Figure 2: Bio data showing the gender, age group, nationality and religion of the user

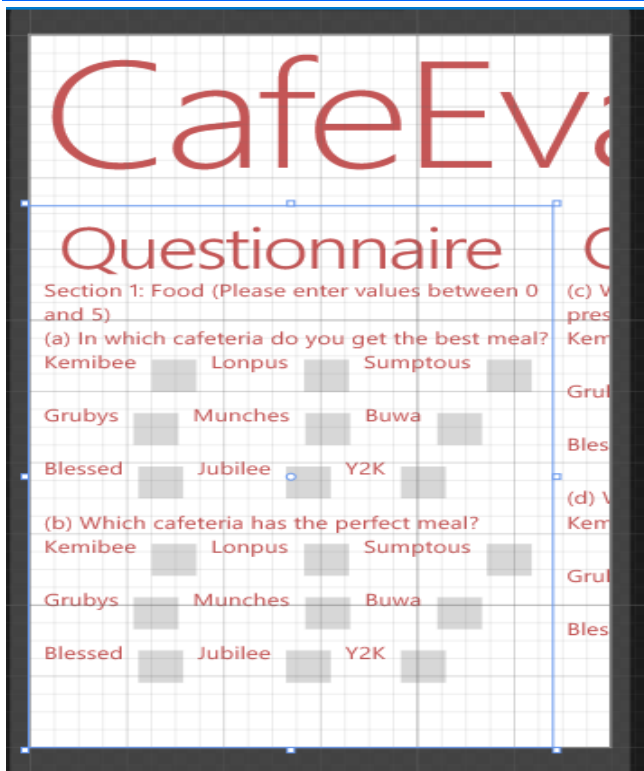Figure 4: Bio data showing the level of the user (Students)

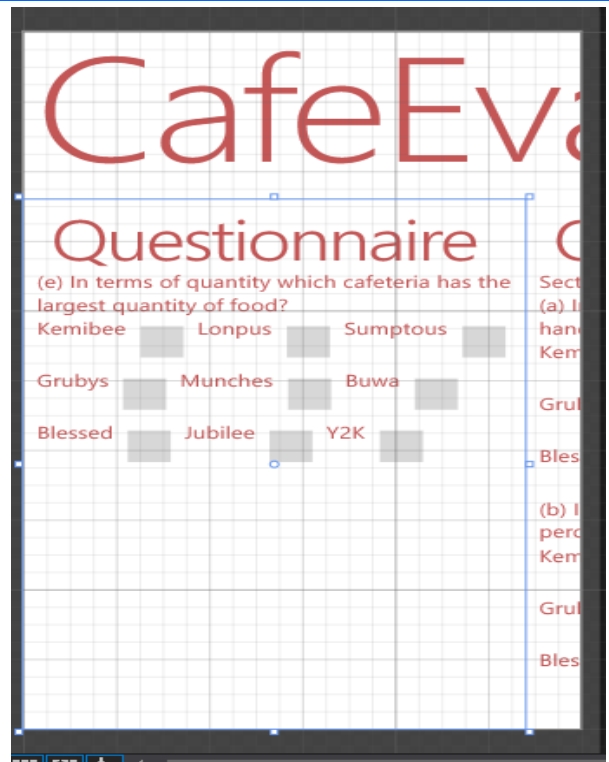Figure 5: Evaluation platform chart 1 of the various Cafeterias.

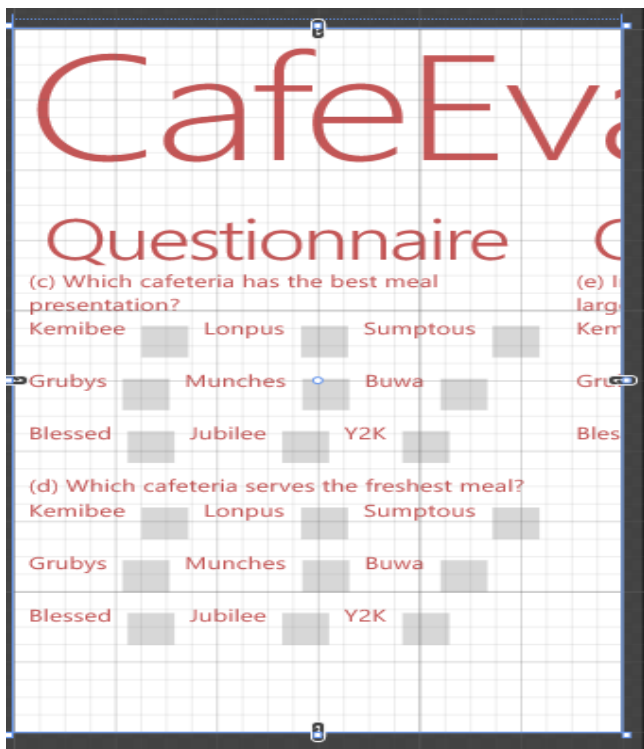Figure7: Evaluation platform Chart 3 of the various Cafeterias.

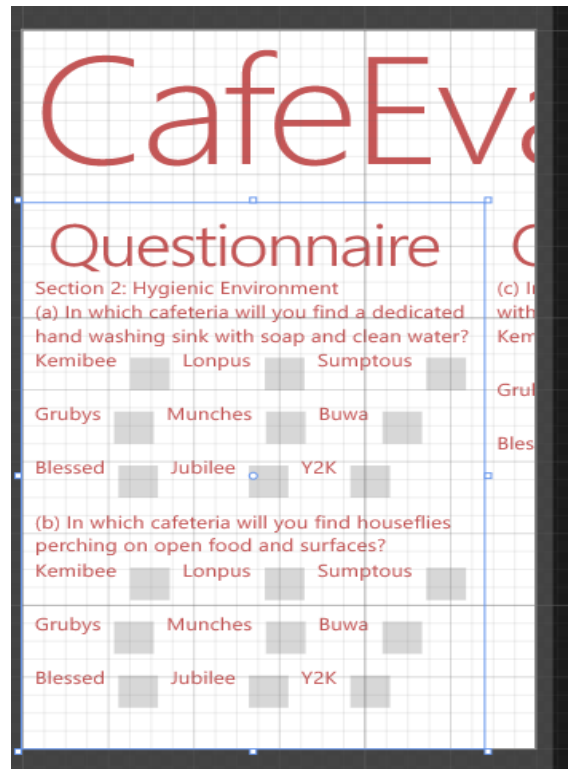Figure 6: Evaluation platform chart 2 of the various Cafeterias

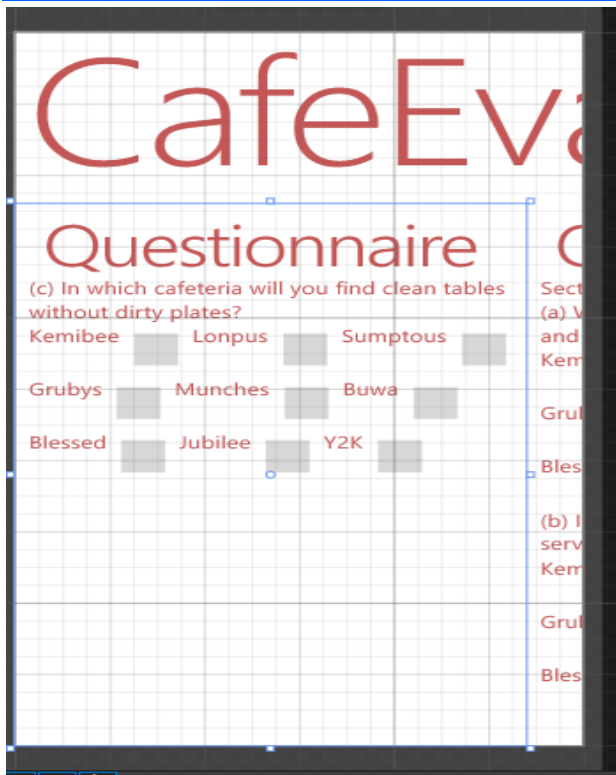Figure 8: Evaluation platform chart of the hygienically environment of the various Cafeterias

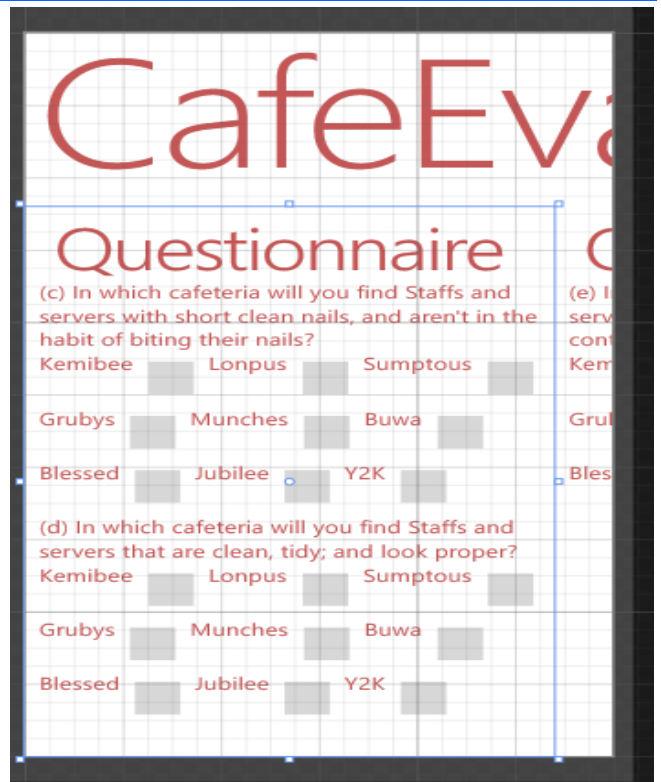Figure 9: Evaluation platform chart 2 of the Hygienically environment

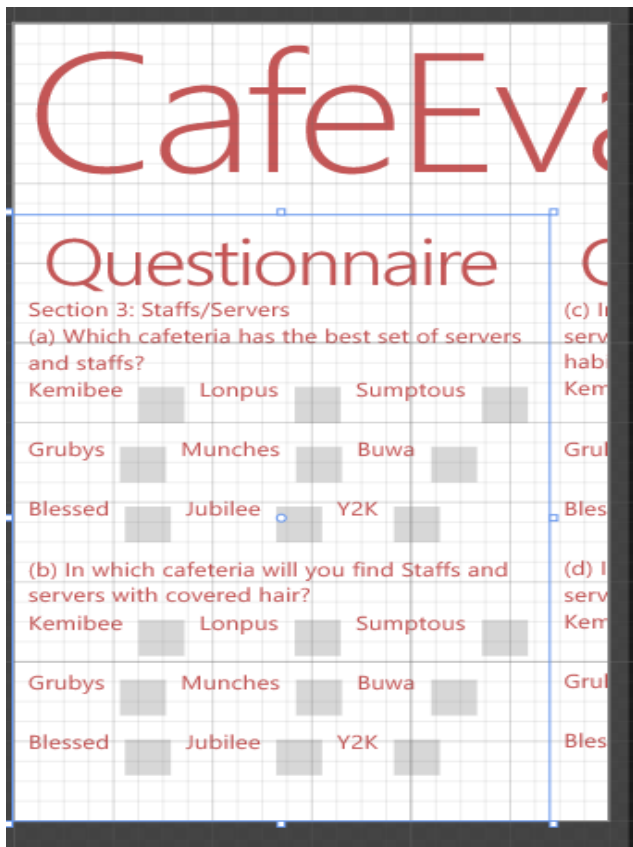Figure 11: Evaluation platform chart 2 for servers and staff of the various Cafeterias

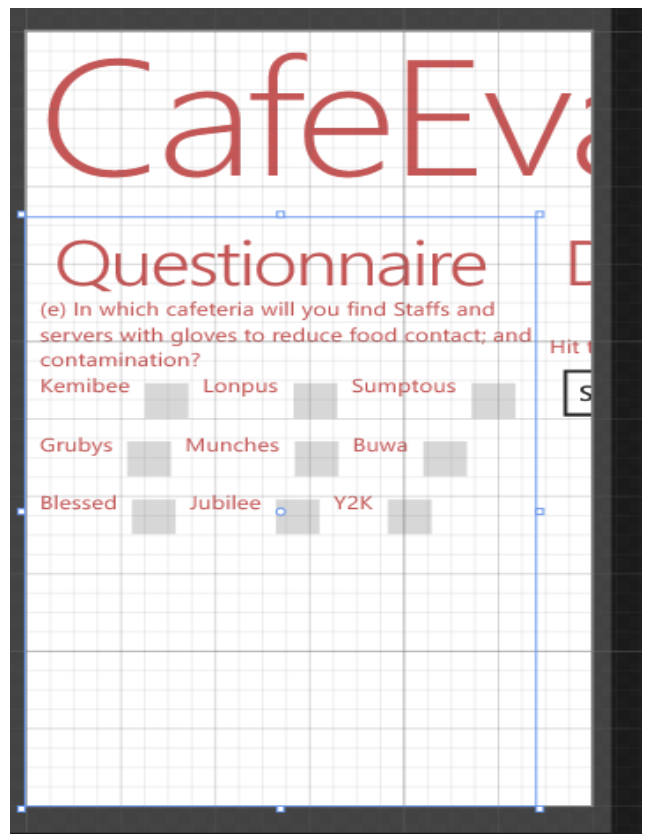Figure 10: Evaluation platform chart1 for servers and staff of the various Cafeterias

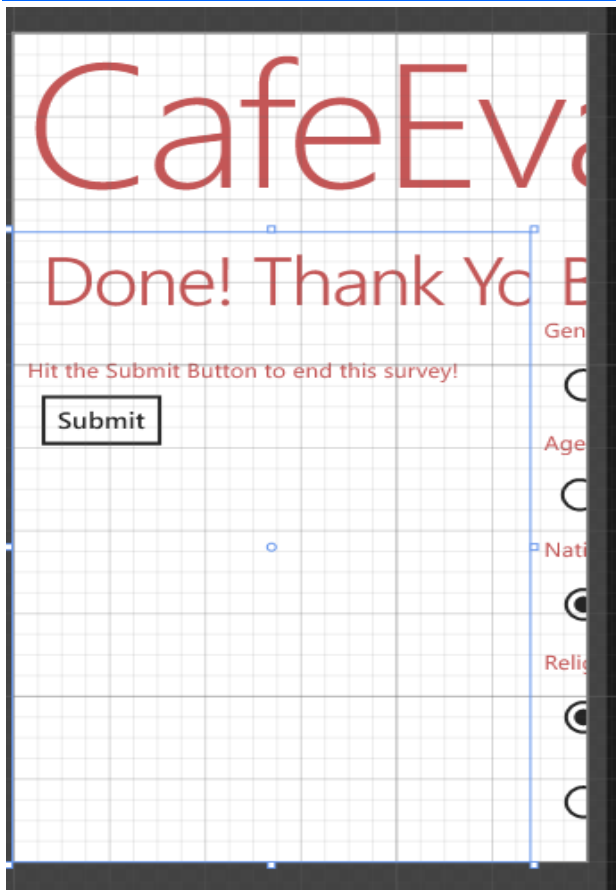Figure 12: Evaluation platform chart3 for servers and staff of the various Cafeterias

Figure13: Submission page of the Bowen university cafeteria evaluation platform system

5. Conclusion and Recommendation

The system evaluation is a user-friendly package that uses the following quality attributes of cafeteria services such as to the food price, quality, quantity, personnel, sanitation, services and environment to create an evaluation platform structure of the system in order to give a detailed information of the happenings in the university cafeterias so as to bring about more efficiency and qualitative services to both staff and students The study then created a performance platform for the ratings of the various cafeterias in the university by designing and developing the platform using C# language of Microsoft Visual Studio .NET framework 4.0 technologies, MS-Server 2006 and SQLite relational database management system that contains a C programming library. In a nutshell, the evaluation performance platform system has designed and implemented some quality attributes into the evaluation performance system. Once the cafeterias are evaluated clearly with the following attributes, and also, the evaluators clearly identify and understood the lapses incurred in the various cafeterias. Bowen university cafeteria service operators will more likely to do a better job and provide better service to their end users. Furthermore, knowing how the end users perceive the quality attributes in the cafeterias' service, it can result to a means of achieving a competitive advantage and shows a differentiation among the cafeterias. The major drawback of this study is the inability to deploy the created system platform into the university catering board for future enhancement of the evaluation performance rating platform. Hence, the system could be further enhanced by developing and building more attributes, also, incorporating it into the management board of the university.

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