

Open Access

Design and Implementation of Automated interface System for Junior High School Candidates in Ghana

Azizu S*

Wenchi Methodist Senior High school, Mathematics Department, Wenchi, Ghana

Abstract

This paper deals with an automated interface system of statement of academic record for Junior High School (JHS) candidates in Ghana. The objectives of this paper is to design and implement a transcript of pupils academic record, query each candidate's results from first to final year (JHS1 – JHS3) for each subject studied and use the queried results to counsel the candidates for the choice of courses to be offered at the Senior High School. The queried results indicated the strengths and weaknesses of each candidate's academic performance for a specific subject termly. The system was designed using Microsoft access 2010 and Structured Query Language (SQL) was applied for the query of results at any point within the nine (9) terms of the academic calendar.

Keywords: Microsoft; Interface system; Communications technology

Introduction

Information and Communications Technology (ICT) has become an integral and accepted part of everyday life, more especially in our educational institutions. ICT is an important tools to meet Millennium Development Goals of access to and quality improvements of educational programming for all children [1].

Technology is increasing in transforming people's lives at home, work places and it is expected that this trend will continue, to the extent that technological literacy will become a functional requirement for people's work, social, and personal lives. The role of technology [2] in teaching and learning is rapidly becoming one of the most important and widely discussed issues in contemporary education policy. Technology [3] can provide the necessary tools to enhance the teaching and learning process, opening new opportunities and avenues. For instance, it could enhance the customization of the educational process and implementation of student's record systems.

The creative use of Information and Communications Technology in education has the capacity to increase the quality of people's lives by enhancing teaching and learning. ICTs are making dynamic changes in society. They are influencing all aspects of life. The influences are felt more and more at schools. Because ICTs provide both students and teachers with more opportunities in adapting learning and teaching to individual needs, society is, forcing schools aptly respond to this technical innovation [4].

However, a well-designed student record system, whether using paper documents or automated interface systems, yields numerous benefits. The most important of these is the ability to report Information for decision making about individual students, schools and programs [5].

Hence, this paper aimed at designing an interface system which provide means to maintain accurate, up-to-date pupils statement of academic record, assess the performance of teachers for each particular subject and use the queried results to counsel the candidates for the choice of courses to be offered at the Senior High School.

Related Works

Automated interface systems using available computer technology offer tremendous advantages over traditional paper systems [5]. A well-designed automated student record system allows for the easy and efficient movement of student records among levels of the education system using standard formats. For instance, when a student moves from one school to another the information can be extracted, prepared, and transferred electronically [6]. In this "information age," production of accurate, relevant, and timely information is the key to good decision making [6]. Student records are used for many important educational purposes, including instruction and guidance decisions [6]. An education organization's ability to meet its standard is affected by the organization's access [5] to complete, accurate, and timely information about its students.

To understand what student's database [6] is, you must be equipped with the main difference between data and information and as indicated below:

I. Data constitutes the building blocks of information.

II. Information is produced by processing data.

III. Information is used to reveal the meaning of data.

IV. Accurate, relevant and timely information is the key to good decision making.

Concept of Database

A database [6] is a collection of tables, queries, forms, reports, program code, and the interrelations of these objects. Tables are the containers of data arranged into rows (records) and columns (fields). Queries are questions that are asked of our data. Forms are screens that are used to present or collect data in an organized manner (the data entry screen). Reports are the formatting of output for printing. Macro and Modules are user programs written to automate functions or create a complete database application. Microsoft Access databases are relational databases, which means they contain several tables that are linked together by special matching fields called primary keys.

*Corresponding author: Azizu S, Wenchi Methodist Senior High school, Mathematics Department, Wenchi, Ghana, Tel: +233 20 569 0982; E-mail: abdulaziz_seidu@rocketmail.com

Received December 14, 2015; Accepted Janaury 07, 2016; Published January 26, 2016

Citation: Azizu S (2016) Design and Implementation of Automated interface System for Junior High School Candidates in Ghana. J Inform Tech Softw Eng 6: 168. doi:10.4172/2165-7866.1000168

Copyright: © 2016 Azizu S. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Significance of Automated Interface System

I. Time and Cost Saving as compare to manual way of keeping records.

II. Quick Feedback of updated and the needed information.

III. Easy electronic transfer of information.

IV. Accurate and efficient pupils records are easily accessible.

Methodology

The automated interface system involved the following stages: Designing of tables, Forms, query for data entry and searching, programming, testing and debugging. The fields which were considered for the designing of tables includes: registration number of pupils, first name, last name, school programs (subjects), name of teacher for a particular subject, term in academic calendar which were codes as first year first term (1T1), first year second term (1T2), first year third term (1T3), third year second term (3T2) and mock examination respectively for the nine terms of the academic calendar.

The pupils registration numbers were generated using Microsoft excel 2010 and it serves as the primary key to search for the needed information within the SQL structure.

Some Interface Systems

Details of interface system are shown in Figures 1-3.

Conclusion and Future Work

An automated interfaces system has been designed and implemented to query statement of academic records for Junior High School candidates in Ghana. The paper focused on querying the results



in the case	T Liberandeng	Advanced +	There a .	Ta *		111 夜夜 14		
- Jim	at Painter Splitenove Sort W	leggicfilter an- X Delete	- 🔜 Mare - 👘 🔓 Se	et. B X U	▲ · · · · · · · · · · =			
	G Sot & Fitter							
Lines J. Q.	any1							
Expr1000 -	REGNUMBER - ENAME	 SUBJECT 	MARKS - TERM					
1020001	3020001 ABOUL-MAJEID	ENGLISH	78 171					
1020001	SEDRODS AROUL-MAJEED	ENGLISH	75 172					
1020001	ST20001 ABDUL-MAJEID	INGLISH	87 173					
1020001	ST29921 ABOUL-MAJEID	ENGLISH	65 2T1					
1030001	GIBLAM-JUGRA 200003	ENGLISH	78 272					
1020001	SE20001 ABOUL-MAJEID	INGLISH	92 273					
1020001	100001 ABOUL-MAJEID	INGLISH	78 171					
1030001	ST20001 ABOUL-MAJEID	ENGLISH	75 172					
1020001	100001 ARD-L-MAIEID	ENGLISH	55 MOCK					
1020001	1000001 ABOUL-MAJEID	MATHEMATICS	78 171					
1020001	SE20001 ARD/JL-MA/EED	MATHEMATICS	65 172					
1030001	SEDDODS ARDUK-MAJEED	MATHEMATICS	67 173					
1020001	1020001 ABOUL-MAJEID	MATHEMATICS	75 271					
1020001	BE20001 ABDUL-MAJEED	MATHEMATICS	85 272					
1030001	SE20001 ABOUL-MAJEED	MATHEMATICS	76 273					
1020001	1029001 ABOUL-MAJEID	MATHEMATICS	67 171					
1020001	SC20001 ABDUL-MAJEED	MATHEMATICS	87 372					
1020001	3020001 ABOUL-MAJEED	MATHEMATICS	75 MOCK					
1020001	1020001 ABOUL-MAJEID	INTEGRATED SCIENCE	75 171					
1020001	SC20001 ABOUL-MAJEID	INTEGRATED SCIENCE	67 172					
1030001	SCOOOL ABOUL-MAJEID	INTEGRATED SCIENCE	77 [13					
1020001	100001 ABOUL-MADELD	INTEGRATED SCIENCE	88 211					
102000	SEGRAL ABOUL-MADELD	INTEGRATED SCIENCE	17 212					
1020001	ALL AND A BOUL MAJED	INTEGRATED SCIENCE	65 273					
102000	ALLOW A REAL MARKED	INTEGRATED SCIENCE	67 111					
102000	NUMBER AND A MARKED	INTEGRATION CONCE	77 312 AT MOVY					
10,000	NUMBER AND A MARKED	SOCIAL SUCHS	45 111					
10,000	ACCOUNT AND A MARKED	ACCIAL RECEIPT	10 111					
10 2000	ACCOUNT AND A MAINT	NOCIMI RECEIPT	87.171					
10,000	NUMBER AND A MARKED	SOCIAL SUCHS	45 213					
10,000	1020001 AND IL MARIED	SOCIAL SUCHS	67.212					
100 - 4.6 of 5	A R R R R R R R R R R R R R R R R R R R							
t View							Cago	lock Runtock 🕅 ik i



Page 2 of 2

of each candidate so that the performance of such pupil can be assessed in order to offer academic guidance towards the choice of program to pursue at the Senior High School and at the same time analyzing the performance of each subject teacher.

Finally, due to time constrain, the future work will include webbased automated interface system where each school can input its results online. In this future work, the back-end database would be MySQL and Front end interface would be ASP.net in Visual Basic 2010.

References

- Tolani-Brown N, McCormac M, Zimmermann R (2009) An Analysis of the Research and Impact of ICT in Education in Developing Country Contexts. Journal of Education for International Development 4:12.
- 2. Aduwa-Ogiegbaen SE,IyamuEOS (2005) Using Information andCommunication Technology in Secondary Schools in Nigeria: Problems and Prospects. Educational Technology and Society 8: 104-112.
- Scheuermann F,PedróF(2009)Assessing the effects of ICT in . ISBN 978-92-79-13112-7.
- Fisseha M (2011) The Roles of Information Communication Technologies in Education:Review Article with Emphasis to the Computer and Internet. Ethiop J Educ and Sc 6.
- Patti H (2000) Building an Automated Student Record System. A Step-by-Step Guide for Local and State Education Agencies. NCES 2000-324.
- Carlos C, Steven M, Peter Rob (2013) Design, Implementation, and Management. ISBN-13: 978-1-111-96960-8.