

Education Management System for Schools in Africa

The Behind Story: Need For A Better System

“GUI components are easily understandable and easy to develop”

Many believe that poverty alleviation can be done through sustainable community development, and among them, education plays as one of the most important roles in helping children to learn, think and make a difference to their lives. However, even until today, Schools in Africa are lacking adequate management information systems to support their administration. There is no transparency of class attendance, student records, teachers' profiles, no standardized curriculum and the quality of education is generally low.

As part of the IT industry, what we can do at the least is to provide them with a better administration system and this is what this project is about. Developed by Abdullahi Egal leveraging the power of ZK and sponsored by HIRDA, this project aims to enhance the quality of education, standardize curricula, promote unity of educational organizations, give transparency to school activities, and provide educational opportunities for school children. HIRDA is a non-profit organization founded in 1998 to promote gender equality and education rights to school aged children in poverty stricken areas to create better perspective for their future.

HIRDA will deploy the system on schools and train teachers to use this ZK powered application while Egal has also created a manual and some training videos to assist teachers in Africa to get started on the system.

The screenshot shows the 'Ibrahim Egal giir Primary and Secondary School' interface. It features a navigation menu on the left with options like Home, School Settings, Add Teacher, Add Student, Manage Absents, and Manage Schedules. The main content area is divided into several functional sections:

- School Calendar:** Includes fields for School Opening Date (Sep 1, 2010), School Closing Date (Jun 1, 2011), School working days (Sun-Fri), Start time morning shift (7:30:00 AM), Morning period length (00:45), Start time afternoon shifts (12:30:00 PM), and Afternoon shift length (00:30).
- Assign subject to class:** Features dropdowns for 'Choose Class' and 'Choose Subject', and a 'Period / Week' field.
- Add Class:** A table with columns for Grade, Name, School Fee, and Shift, listing classes from 1.A to 4.A.
- Add Curriculum:** A table with columns for Name, Initials, Language, and a Save button, listing subjects like Arabic, History, English, Science, Biology, Chemistry, Physics, and Tambush.

About School Administration System (SAS)

This application developed with ZK is a school management and administration system allowing schools to store and maintain records of school locations, schedules, pupils, teachers, classes, curriculum, attendance, exams, results, fees and more. This management system is initially targeted for primary and secondary schools in Africa but can be further extended to higher education and universities and other developing countries worldwide.

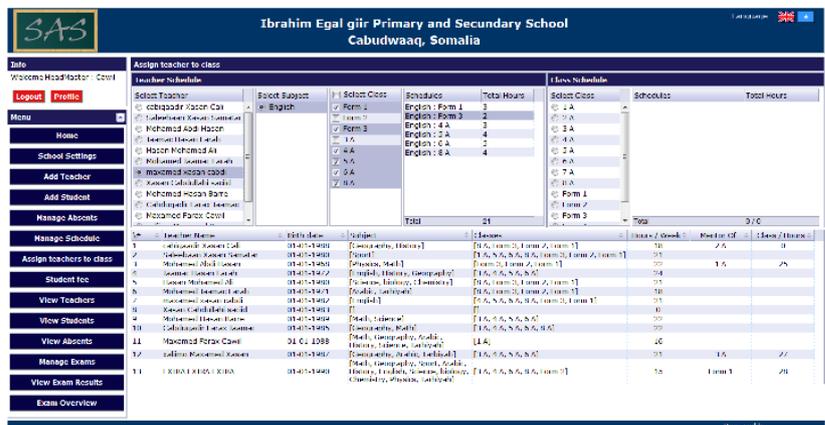
The SAS Project

There are a few limitations that must be considered when a system as such is developed for developing countries.

The first important limitation is the lack of a safe local storage and good computers. The schools in developing countries will have a hard time affording a good computer and it will be harder for them to store the data on a local storage. This education management system will centralize all school data on a safe place to bypass this limitation.

The second limitation is the lack of computer knowledge. Teachers in developing countries are generally not that familiar with computers, therefore, this education management system needs to have an easily understandable UI with a low learning curve yet containing all the essential functions which is exactly what ZK is able to provide.

*“ZK boosted my productivity, and made it possible to create a full school management system within a short period of time.
-A.Egal”*



The third limitation is the lack of internet. HIRDA and Egal are trying to provide internet for most of the schools but will also provide an offline version for the schools without internet so they can store their (encrypted) data on an external media and can upload it to the internet when internet is available to them.

The System Architecture

SAS uses ZK on a tomcat server. It also uses Spring and Hibernate for the data access whilst the system is linked to a MySQL database where the school data is stored.

Why ZK

The framework that was needed for this system had to fulfil the following criteria.

- The GUI components have to be easily understandable
- It has to be easy to develop

ZK has a rich set of components and an easy way to develop large applications. Also, ZK components are easy to customize and could be easily integrated with other frameworks like Hibernate and Spring. "ZK had really boosted my productivity, and made it possible to create a full school management system within a short period of time" says A.Egal.

The Result

The Education management system is currently in its research phase and is now used as a pilot in two schools for close monitoring. It is anticipated to support 100 schools before the end of 2012 and add an additional 150 schools every year.

If you are interested in contributing or to utilise this system, please contact Abdullahi Egal via abduegal@gmail.com

About ZK

Potix Corporation develops and supports ZK, the #1 Ajax solution on SourceForge.net, the world's largest open source host. ZK has more than 1,500,000 downloads since its first release in late 2005. ZK is deployed by a large number of Fortune Global 500 companies, including Deutsche Bank, Barclays, Sony, Sun Microsystems and Toyota, providing them with the ability to rapidly create rich Ajax enterprise level applications.

Contact us

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