

Intelligent Academic Assistant

Tabora Boys Secondary School

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Introduction

The project was about creating an automated web-based system that serves as a computerized academic expert, it automatically sorts and interprets the input scores based on averages, divisions, grades, rankings and performance trends. The project was divided into two parts in such a way that the first part sends the results summary to parents via SMS, and the second part system will deal with entire process of fully and deeply analysing all the input information.

The idea of the project came-by as a result of challenges that face

Academic sector and the challenges include; no proper academic connection between parents and students, lack of proper encouragement to improving students, and extensive usage of papers when going for holidays. And when these problems will be solved will help our school and even the entire nation to utilize the academic sector to the maximum.

Method

Methodology that was used was experimental which was done using the following requirements.

- A computer with windows 8.1 installed. The windows 8.1 allows us to use the latest stable version of Python 3 which can't run on the previous windows 7.
- Python 3.9 interpreter. This is used to translate the python code we write into commands that can be well understood by the computer.
- Django module. This is a special package for creating a web framework that can accept web requests from the internet users.
- JavaScript (Templating language) This language was mainly used to show dynamic information in our system, and also draw the graphs such that they can change without having to reload the page.
- Pycharm Community Edition. This is an environment in which the codes are written in so that they don't affect other programs in the PC.
- Pyairmore. This deals with sending SMS requests from the system to the host Smart phone that will send the results to the parents and guardians.

The following explains how we did our project to this stage;

i. Installation of the required packages.

We installed all the required python modules which were Django and pyairmore through the terminal (Command Prompt) Specifically, the code used was ``pip install django`` which installed the Django module, and it was the same for the rest of the modules.

ii. The main project directory was created using the code ``Django-admin start project AcademicAssistant``

iii. The superuser was created for our system.

The superuser helps with administrative management of the system, that is, we created a user that could do anything in regards to system management.

The used code to create the superuser was ``python manage.py createsuperuser``

Results

This project had two objectives, the first was to create an automated web based system and the second was to assess the working mechanism of the system and so far we've seen and proven that it is very possible to create such a system, one that can do as per the stated objectives.

By using Tabora boys secondary school as a case study we've been able to use the results of form 5 PCB on assessing the working mechanism of the system where by the system created has been able to automatically sorts and interprets the input scores based on averages, total marks, divisions, grades, rankings and performance trends.

The performance trending will actually give some very crucial insight to the student, teachers or anyone observing them to actually get more detailed information about the performance of the student.

Taking the student's side of view, going through his/her trends will actually help him/her to understand if he/she is heading in the wrong direction or if his/her academic progress is actually good.

A good example of these kinds of scenario include a situation whereby a student actually sees that his/her trend in Mathematics is dropping day by day, but perhaps he/she is actually putting much effort in the subject. So what the system will be telling him is; perhaps he/she needs to study using different study techniques or something else entirely.

From a teachers perspective, it can be a reason prompting the teacher to try out a new teaching style on the student.

Also the system created has been able to send the results summary to targeted phone numbers. And the screenshot below shows that the messages were successfully sent

Conclusions

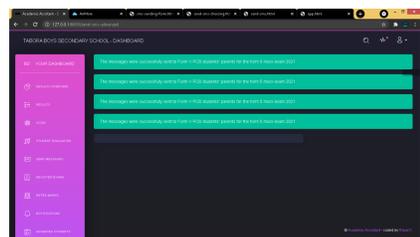
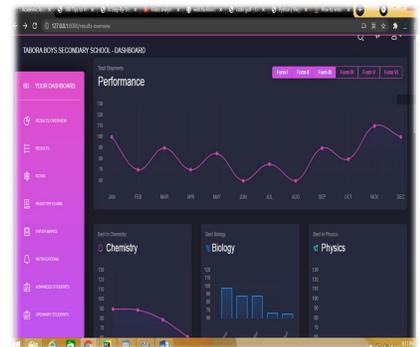
Yes, it is possible to make this system, that is, a system that arranges results in form of average, position, performance trends, divisions and be able to visually display the examination results data in a way that is compelling and easy to understand by the observer.

It was also possible to create this system that would send the results summary to parents despite the type of phone that they own, thus truly breaking the gap that was caused by technological advancement and economic situations. Thus we levelled the playing field for all of them.

Acknowledgments

We give thanks to almighty GOD for helping us in our project. We also thank our supervisor Sir. George Kazi for his constructive advice and guidance. Also we thank the administration of Tabora Boys secondary school, all teachers and students for their endless help.

We'd also like to show our heart most gratitude to the Stack Overflow community for helping us with solving the problems that we had with some codes that were tricky to manage.



The following is the screenshot of a message as seen in the recipient's mobile phone!

