Automatic Attendance Taker
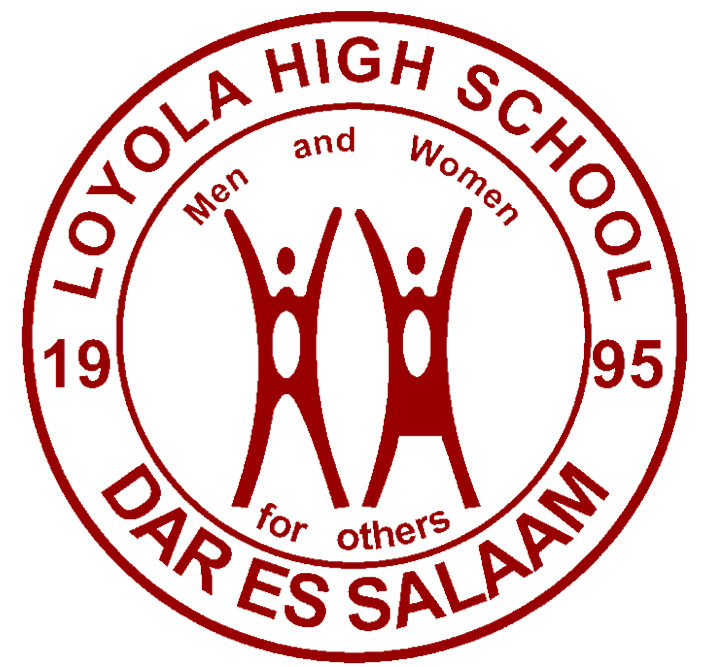
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Introduction:

This project of Automatic Attendance Taker was developed by Moses Minja and Baye Manga. The main reason or purpose for developing this project was to promote technology in urban and rural areas. This device also, saves the teacher's time when he/she takes attendance in class. When we observed that lessons start late due to attendance taking in class which take about more than fifteen minutes. These made us ambitious and eager to know how to develop a device that could make us start our lessons early.

Method:

Automatic Attendance Taker is a very simple and easy project which helps the teacher and the School Administration to take attendance easily. The color can be detected from the cheap material like cloth or a piece of paper where students can be assigned one color. The color is detected at main entrance as they enter and the attendance is indicated in the office laptop or desktop which is in school Administration

The device contains a color sensor. When someone shows his/her ID containing a certain color, the sensor would flash light to the color then it would measure the amount of reflected light. Darker colors would reflect less amount of light than the lighter colors. The sensor would send the data to the Arduino board which is the processing unit. The color code obtained would then be sent from the Arduino to the computer which contains an excel sheet. Then the color code obtained would be cross referenced with the name list store in the school database to get the associated person. Then person's arrival information like whether he/she is present or absent, arrival time will then be updated.
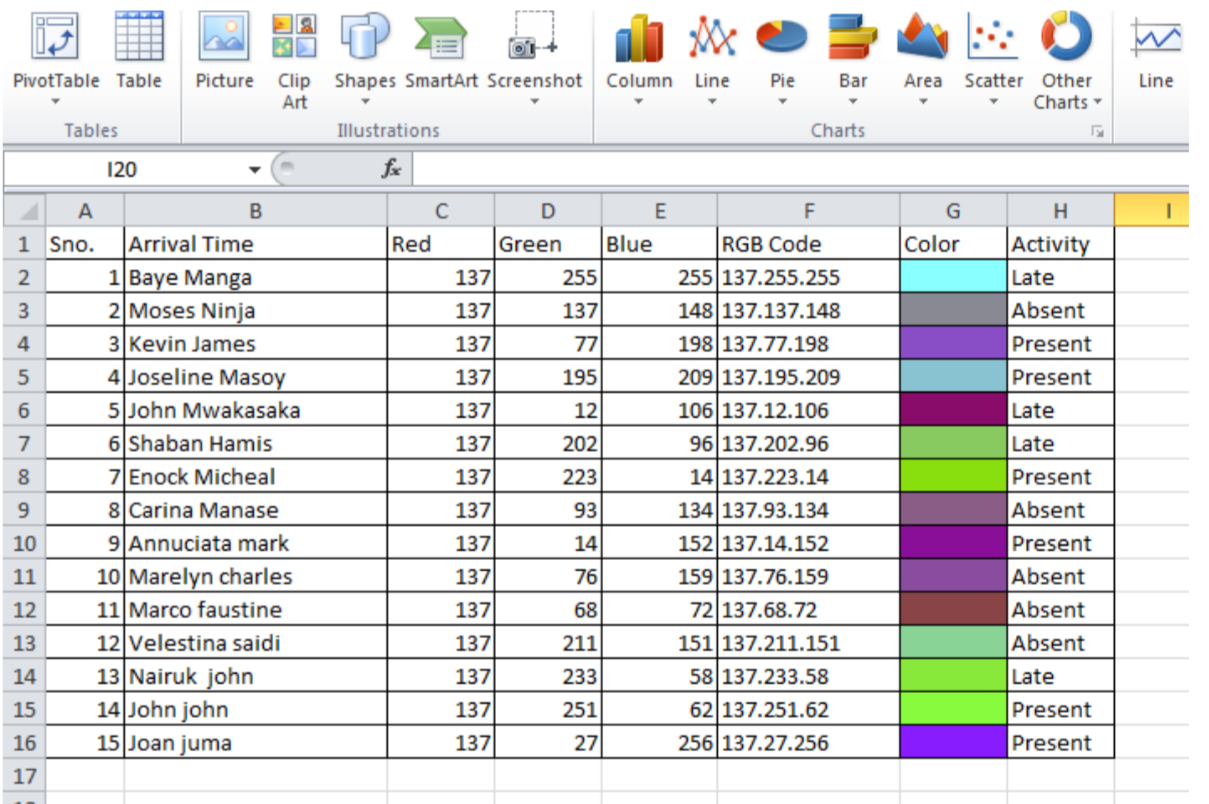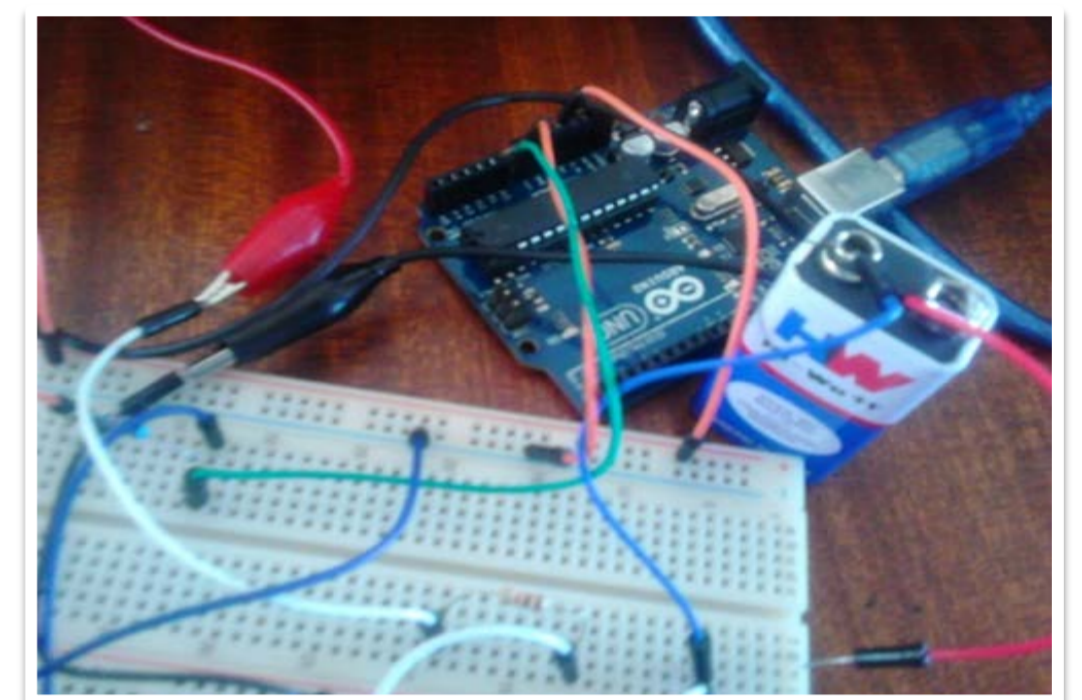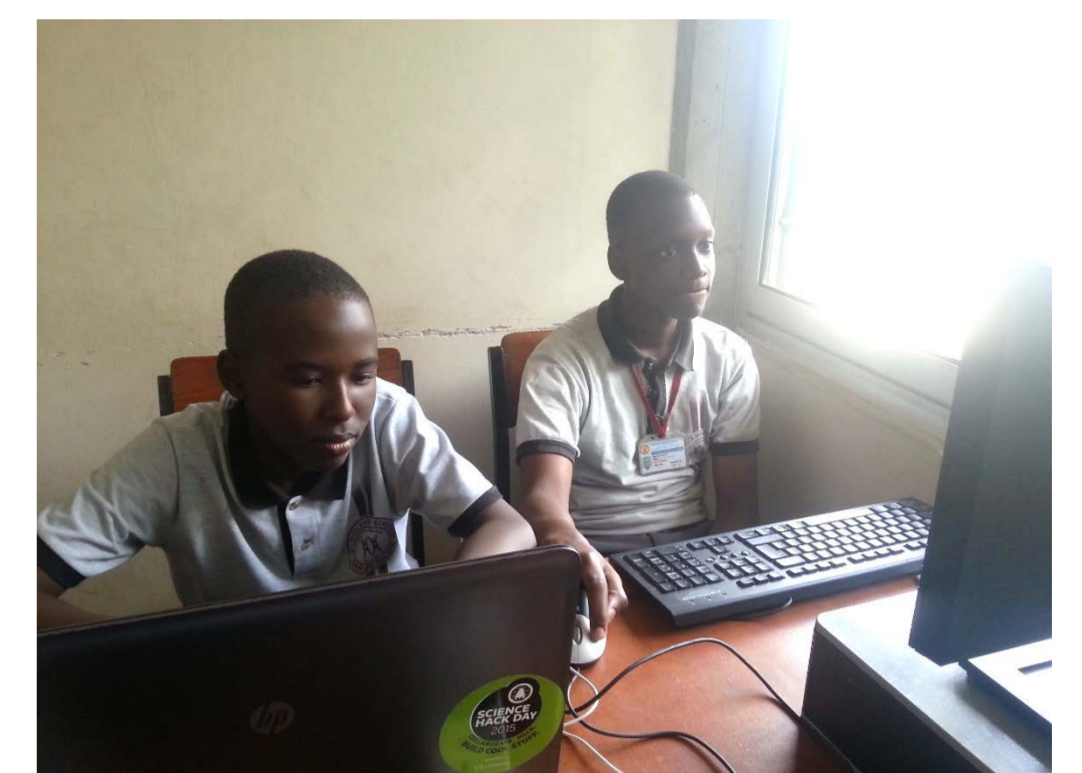
Results:

A TCS34725 color sensor: This sensor has the function of detecting the color in the ID card. This sensor works by flashing a white beam of light to the color then it measures the amount of red, green, and blue values from the reflected light. The sensor outputs a square frequency with a 50% duty cycle. The output of the sensor is directly proportional to the light intensity that hits its surface.

An Arduino Uno board: this is a microcontroller which processes the data from the sensor according to the written codes. It then sends the information to the computer. Every component in the device is connected to the board. This is a component which controls everything and acts as a brain of the device.

Usually upon the registration of the students, they are each assigned unique RGB color codes and that would make, each student having his/her own color.

When the color assigned in the student's ID is scanned by the color sensor, the RGB filters in the sensor determine the values of red, green and blue values from the color as to have the Arduino obtain the color code. The color code is then cross referenced with the students list in the system in order to get the student information matching the color code and his/her arrival information are updated.

Most of the time that was taken by the teachers is when they are calling attendance in the class. When we use the Automatic Attendance taker the attendance taken by the device is fast and easy and efficient. As you can see in the illustration below:

Conclusions

Our conclusion from the results is that using special coded colors to take attendance is efficient and effective. This is because our device uses simple technology which makes it cheap and operational because it touches the lives of both rural and urban schools. From the results that we got it would be convenient for the school's administration to keep track of the attendance and thus improve its efficiency. Comparing with other registering devices such as biometrics our device registers using the colors which makes it easy to apply/implement although its data might not be as accurate as the one collected by those registers which use high technology.

References

www.arduino.cc.com
 http://forum.arduino.cc/

Acknowledgments