Design and Implementation of an Auto result Computation System
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Abstract— Different approaches to meeting with targets in the area of computing and compiling results where looked at, the most used approach is the use of spreadsheet where users will develop custom functions and formulas to actualize their targets. The essence of this work is to design a generic system that can be adopted by any institution of higher learning to making the computation of results a lot more easier and as it is also more of error free and presents more accurate results as the title suggested; “AUTORESULT COMPUTATIONSYSTEM”. An extensive research was carried out to study and ascertain the mode of computation across various institutions thereby presenting a system that can be adopted across the globe. Whilst the work is to be used by a professor or a lecturer singly, my plan is to do more research to have a central system where all results from all professors can be submitted and be computed accordingly.

Keywords— Autoresult, PS, AS, TT, EX, CA.

I. INTRODUCTION
Result computation and compilation among others is a critical aspect of any result officer in any citadel of learning. Its criticality can never be over emphasized as it is the last point of call when the student is graduating from an institution. The problem here is that, a careless handling of a particular result is capable of causing a big problem for the graduating student or between the student and the institution.

This work is designed to handle some critical aspect and creating interactivity between the student, the exam professor and the necessary authorities. The system is designed for course lecturers who haveadministered some Continuous Assessment components to the students and havecollated all then will combine same with exam scores at the end of the semester and presenting as a result. The lecturer is at liberty to change his/her user account any time he deemed it fit. The modules will explain more about what can be done with the system.

II. ALGORITHMS

![Algorithm Diagram]

III. OPERATIONS
The system is only limited to calculating some lower grade mathematical applications such as adding the various Continuous Assessment components to obtain the total score which will be related to the corresponding letter grade. For instance, to get the total score we have;

IV. TOTAL CALCULATION

\[
TS = PS + AS + TT + EX
\]

Where; TS=Total Score of the student
PS=Practical Score(Where the course is a practical oriented course)

IF COURSE IS PRACTICAL
PS NOT ZERO
IF COURSE IS NOT PRACTICAL
PS = ZERO

AS=Assignment Score
V. GRADE ASSIGNMENT
This is dependent on the standard adopted by the school as it differs from institution to institution.

VI. STATISTICAL CALCULATION
The statistical calculation is to carry out simple Sum, Average and frequencies to help in plotting visible graphs for comparison. For example, the user may want to compare the performance of students in a class offering a particular course in terms of the letter grades as obtained by the students.

```
Private Sub Add tion()
    Dim lgradeAsString = Nothing
    Try
        If (txtTotal.Text > 100) Then
            MsgBox("The Score is out of range...")
            lgrade = Nothing
        EndIf
        If (txtTotal.Text >= 75 And txtTotal.Text <= 100) Then
            lgrade = "A"
        EndIf
        If (txtTotal.Text >= 70 And txtTotal.Text <= 74) Then
            lgrade = "AB"
        EndIf
        If (txtTotal.Text >= 65 And txtTotal.Text <= 69) Then
            lgrade = "B"
        EndIf
        If (txtTotal.Text >= 60 And txtTotal.Text <= 64) Then
            lgrade = "BC"
        EndIf
        If (txtTotal.Text >= 55 And txtTotal.Text <= 59) Then
            lgrade = "C"
        EndIf
        If (txtTotal.Text >= 50 And txtTotal.Text <= 49) Then
            lgrade = "CD"
        EndIf
        Me.lblGrade.Text = lgrade
    Catch ex As Exception
    EndTry
End Sub

Private Sub RelFreq()
    Try
        TextBox11.Text = Math.Round(Val(Val(txtA.Text) / Val(txtTotal.Text)), 2)
        TextBox12.Text = Math.Round(Val(Val(txtAB.Text) / Val(txtTotal.Text)), 2)
        TextBox14.Text = Math.Round(Val(Val(txtBC.Text) / Val(txtTotal.Text)), 2)
        TextBox15.Text = Math.Round(Val(Val(txtC.Text) / Val(txtTotal.Text)), 2)
        TextBox16.Text = Math.Round(Val(Val(txtCD.Text) / Val(txtTotal.Text)), 2)
        TextBox17.Text = Math.Round(Val(Val(txtD.Text) / Val(txtTotal.Text)), 2)
        TextBox18.Text = Math.Round(Val(Val(txtE.Text) / Val(txtTotal.Text)), 2)
    Catch ex As Exception
    EndTry
End Sub

Private Sub TotalFrequency()
    Try
    Catch ex As Exception
    EndTry
End Sub
```
VII. RESULTS

MODULES
The key modules attended in this project are as stated below: RESULT EDITING MODULE, EMAIL MODULE,

MAIN WINDOW OF THE APPLICATION

RESULT EDITING MODULE
Result entries are edited in this module. Every result pre-entered either by bulk or by single can be given life editing here. The user only needed either to call a bulk or entire class result or a single result to be edited and updated or be deleted from the result sheet. As the user changes entries, the total and letter grade automatically will adjust to effect the current changes.

RESULT UPLOADING AND CREATING MODULE
Fig. 6: Result Creation Interface

With this interface or form, the user is able to upload the entire list of the class for which the result will be created singly. The class list is either prepared with a spreadsheet to be uploaded as a whole or list can be created using the a text editor like the notepad.

EMAIL MODULE

Fig. 7: Results are either sent to the result office in bulk or singly to the student

With this form, the user can email the results of entire class to the requesting officer or sending a single result to a student on request using any email server available.

SCHOOL’S LOGO UPLOADER

Fig. 8: This form is used to upload the logo image of the school
This module is used to upload the logo of the institution into the database that will be used subsequently as tagged “LOAD ONCE, USE THROUGHOUT”. The logo is meant to be appended or placed as a security mark on every result sent by every lecturer.

RESULT ANALYSIS MODULE

![Grades Distribution](image)

*Fig.9: Result Analysis Module*

It is a good idea that a lecturer analyses his/her results, see the performance of the class on a particular course to see if he/she will improve on himself/herself and also see reasons why the result should be revisited or amended. A lecturer can also use this module to plot a graph to see what is actually happening graphically.

![Result to be emailed](image)

*Fig.10: Result to be emailed to a student on request*
Fig. 11: Class Result sent to the Departmental Head or anyone in charge

Fig. 12: Class Result attached as attachment to be sent to the Departmental Head or anyone in charge
The above figure shows a sample printout of the final computed result for a class. This is printed directly from the result editing module where its either you print directly to the printer or using XPS viewer in the computer as a softcopy.

The three different options in sending out results are: either to send a student’s result via email to the student or sending an attached result to the HOD or a Microsoft excel converted sheet to the HOD or the ICT for further result computation.
FUTURE SYSTEM OVERVIEW

Fig.16: Conceptual future design of the system
The figure above is a network design that connects the various users to a common server where all users are able to connect to the server and send results to a common folder for easy retrieval by the concerned officers. This will be possible when there is an existing network connecting offices to the grid.

**VIII. CONCLUSION**

This system was conceived in 2004, since then it has gone through various stages from using ms-access to combining vb.net. The essence of this project is to reduce the work load on lecturers/professors and also reduce the use of paper in moving results from one point to another. The most desired end is not this very stage but as recommended below;

1. The application can interface with a central database of the school where lecturers can logon with a particular logon ID to access class list where the list can be downloaded to the app’s database for result computation.
2. That a lecturer can use it on his/her phone, or any handheld device. It can be converted to either android, iOS phone application that can be installed.

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