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

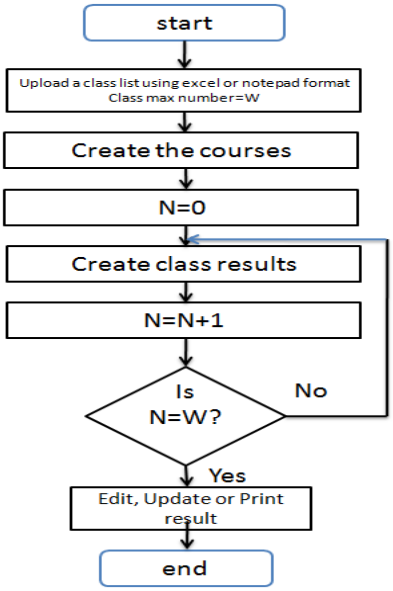


Fig.1: Loading, Creating and Manipulating single or class results

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 ORIENTED

PS NOT ZERO

IF COURSE IS NOT PRACTICAL ORIENTED

PS = ZERO

AS=Assignment Score

```
        EX=Exam score
PrivateSubAddition()
DimlgradeAsString = Nothing
Try
txtTotal.Text = Val(Val(txtPract.Text) + Val(txtAss.Text) +
Val(txtTest.Text) + Val(txtExam.Text))
If (txtTotal.Text> 100) Then
MsgBox("The Score is out of range...")
lgrade = Nothing
EndIf
If (txtTotal.Text>= 75 AndtxtTotal.Text<= 100) Then
lgrade = "A"
EndIf
If (txtTotal.Text>= 70 AndtxtTotal.Text<= 74) Then
lgrade = "AB"
EndIf
If (txtTotal.Text>= 65 AndtxtTotal.Text<= 69) Then
lgrade = "B"
EndIf
If (txtTotal.Text>= 60 AndtxtTotal.Text<= 64) Then
lgrade = "BC"
EndIf
If (txtTotal.Text>= 55 AndtxtTotal.Text<= 59) Then
lgrade = "C"
EndIf
If (txtTotal.Text>= 50 AndtxtTotal.Text<= 54) Then
lgrade = "CD"
EndIf
If (txtTotal.Text>= 45 AndtxtTotal.Text<= 49) Then
lgrade = "D"
EndIf
If (txtTotal.Text>= 40 AndtxtTotal.Text<= 44) Then
lgrade = "E"
EndIf
If (txtTotal.Text<= 39) Then
lgrade = "F"
EndIf
Me.lblGrade.Text = lgrade
Catch ex AsException

EndTry
EndSub
```

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.

```
PrivateSubRelFreq()
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)
        TextBox13.Text = Math.Round(Val(Val(txtB.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)
        TextBox19.Text = Math.Round(Val(Val(txtF.Text) /
Val(txtTotal.Text)), 2)
Catch ex AsException

EndTry
```

Fig.2: Code Fragment to Calculate the Relative Frequency

```
PublicSubTotalFrequency()
Try
txtTotal.Text = Val(Val(txtA.Text) + Val(txtAB.Text) +
Val(txtB.Text) + Val(txtBC.Text) + Val(txtC.Text) +
Val(txtCD.Text) + Val(txtD.Text) + Val(txtE.Text) +
Val(txtF.Text))
        TextBox20.Text = Val(Val(TextBox11.Text) +
Val(TextBox12.Text) + Val(TextBox13.Text) +
Val(TextBox14.Text) + Val(TextBox15.Text) +
Val(TextBox16.Text) + Val(TextBox17.Text) +
Val(TextBox18.Text) + Val(TextBox19.Text))

Catch ex AsException

EndTry
EndSub
```

Fig.3:Code Fragment to Calculate the Total Frequency

VII. RESULTS

MODULES

The key modules attended in this project are as stated below; RESULT EDITING MODULE, EMAIL MODULE, RESULT UPLOADING AND CREATING MODULE, SCHOOL'S LOGO UPLOADER, RESULT ANALYSIS MODULE and RESULT SHEET.

MAIN WINDOW OF THE APPLICATION

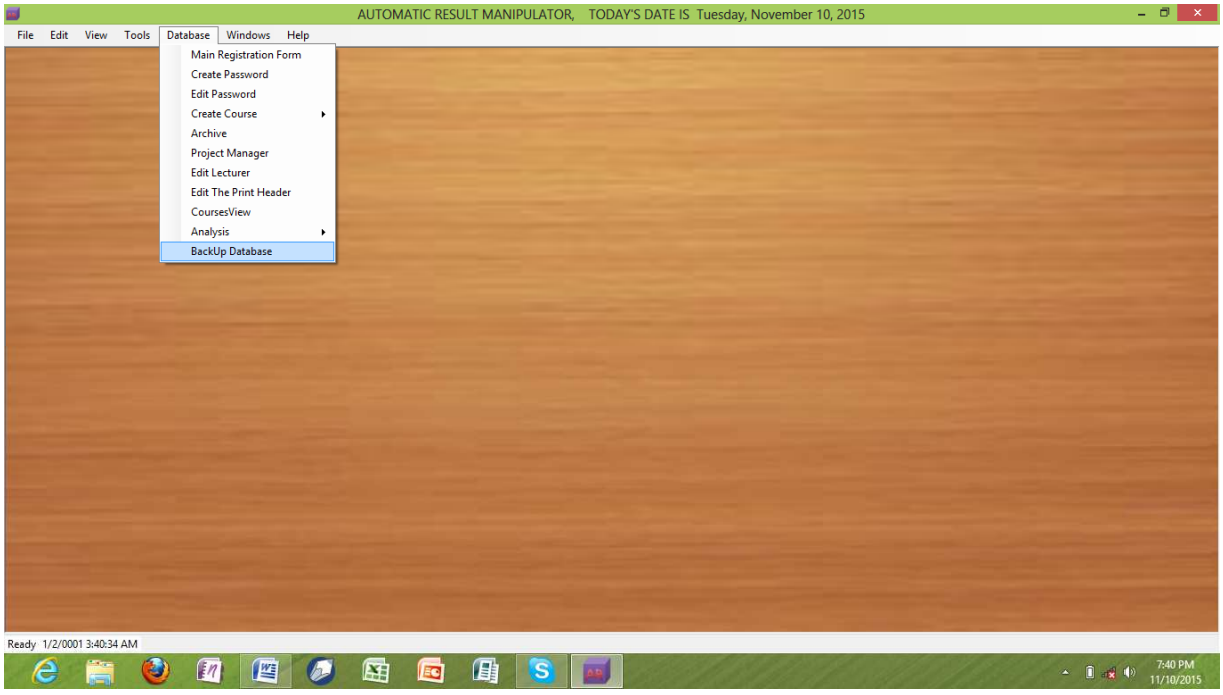


Fig.4: Main System Window

RESULT EDITING MODULE

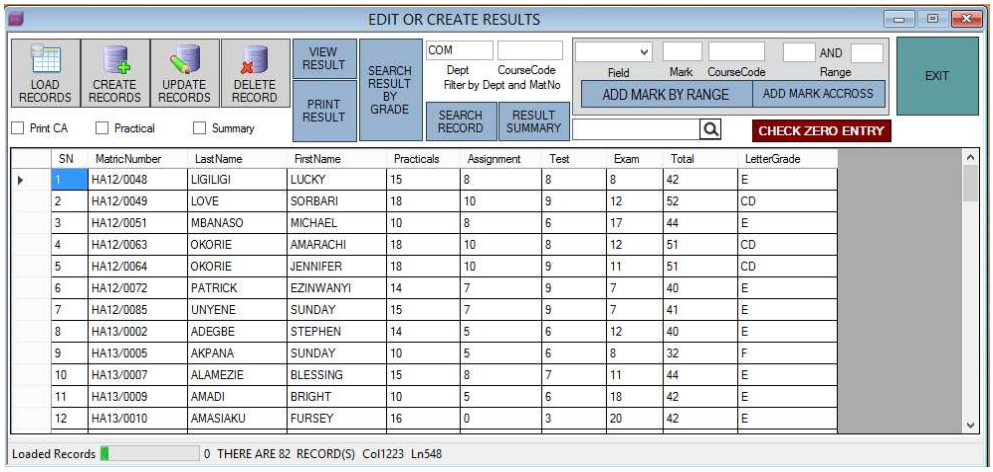


Fig.5:Result Editing and Printing Interface

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 singile 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 curren changes.

RESULT UPLOADING AND CREATING MODULE

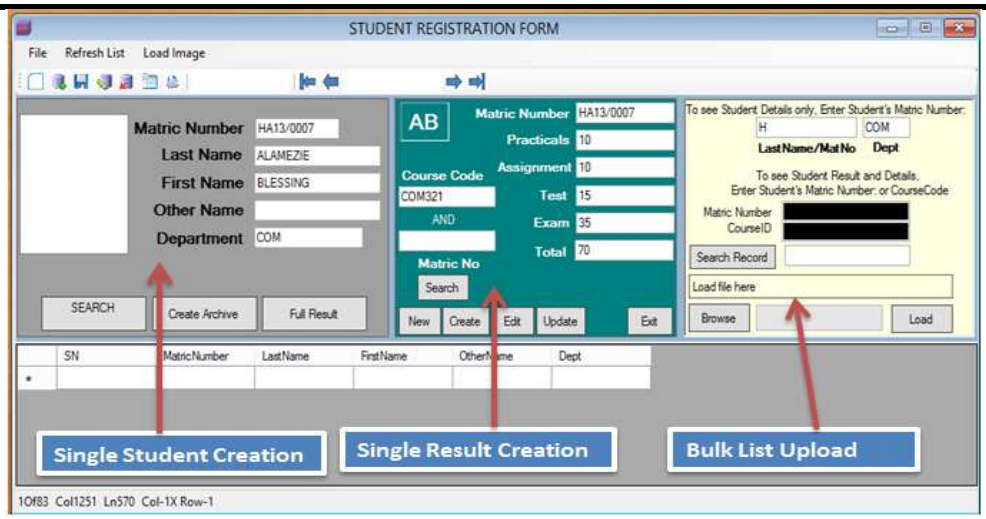


Fig.6: Result Creation Interface

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

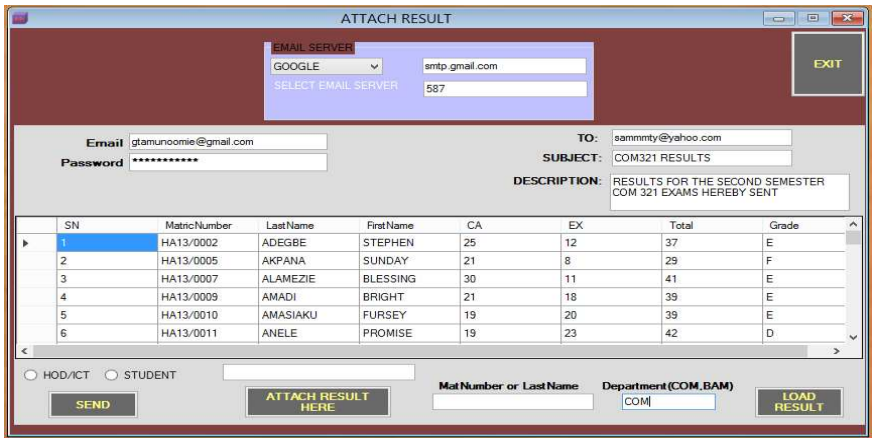


Fig.7: Results are either sent to the result office in bulk or singly to the student

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 avaible.

SCHOOL'S LOGO UPLOADER

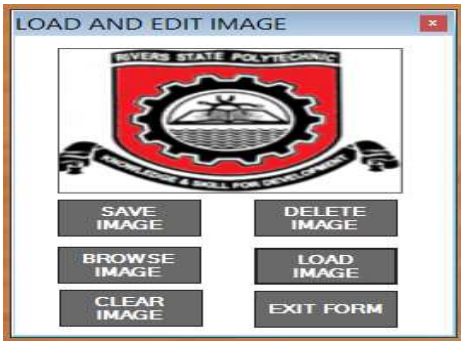


Fig.8: This form is used to upload the logo image of the school

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

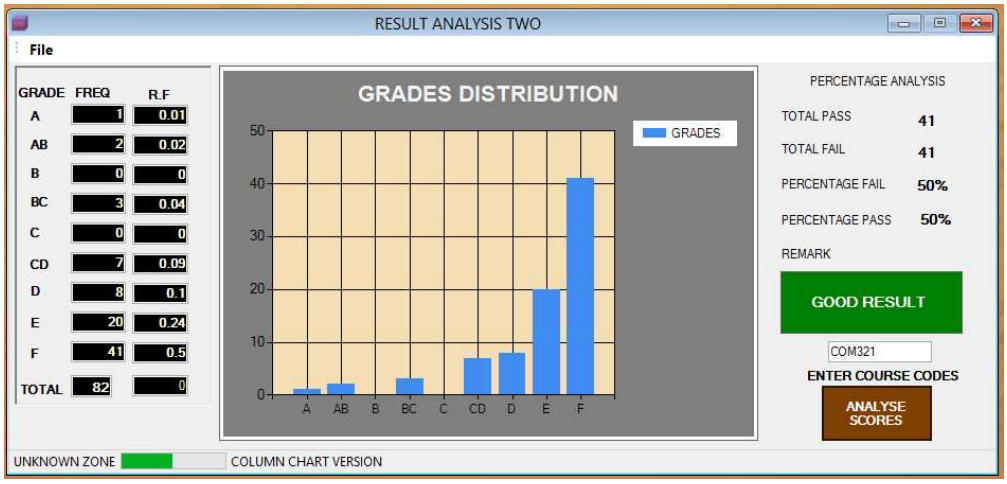


Fig.9: Result Analysis Module

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.

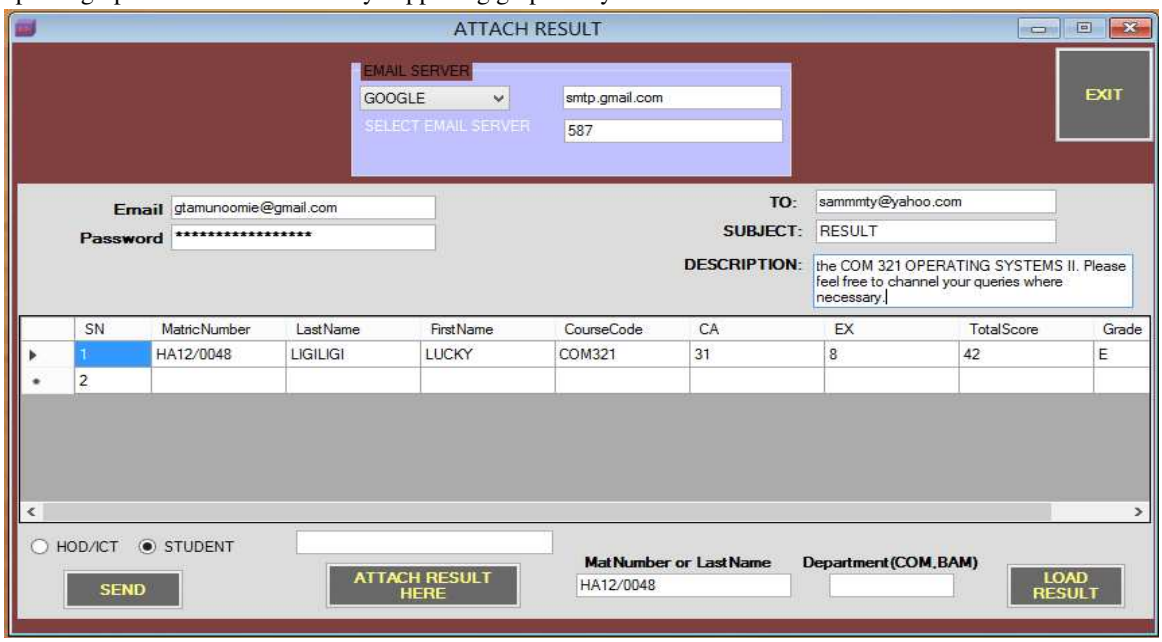


Fig.10: Result to be emailed to a student on request

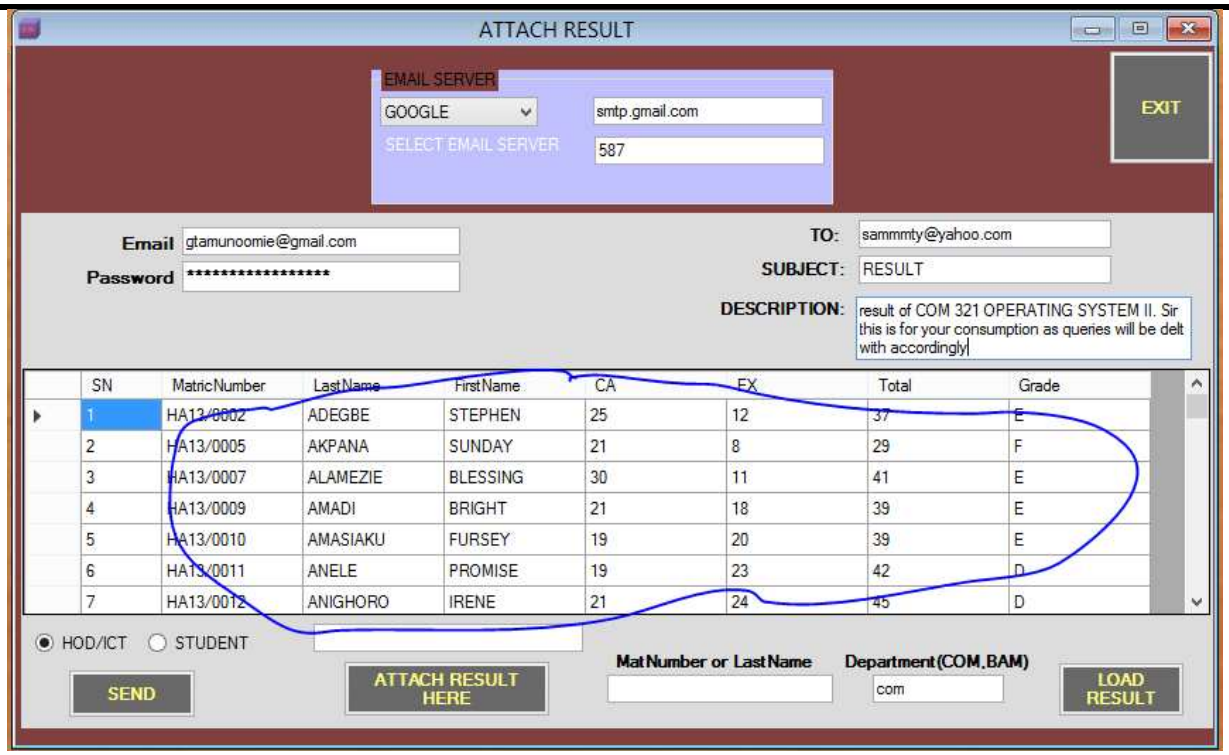


Fig.11: Class Result sent to the Departmental Head or anyone in charge

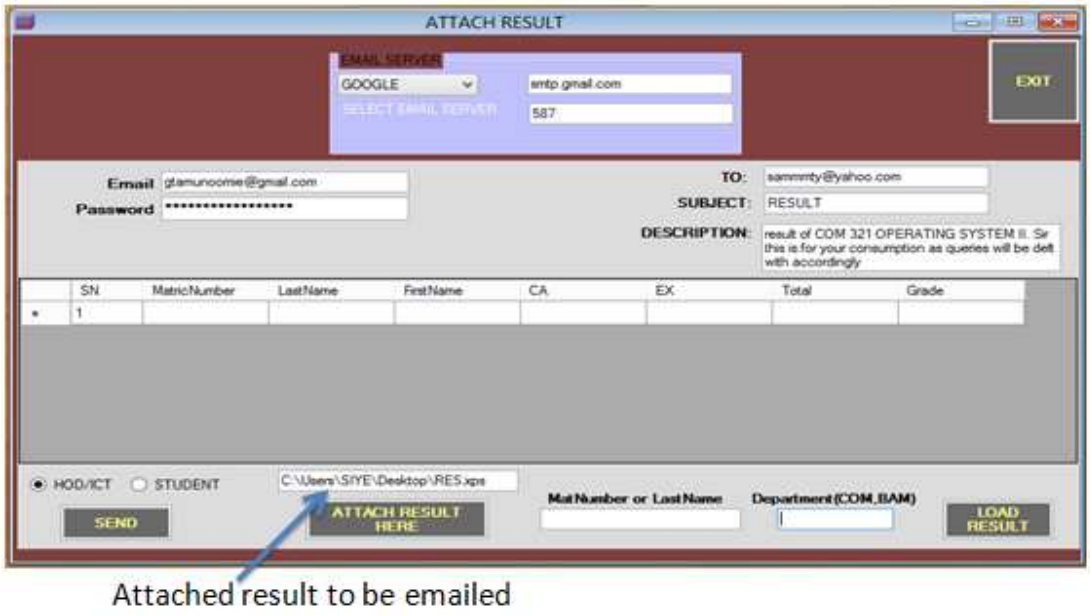
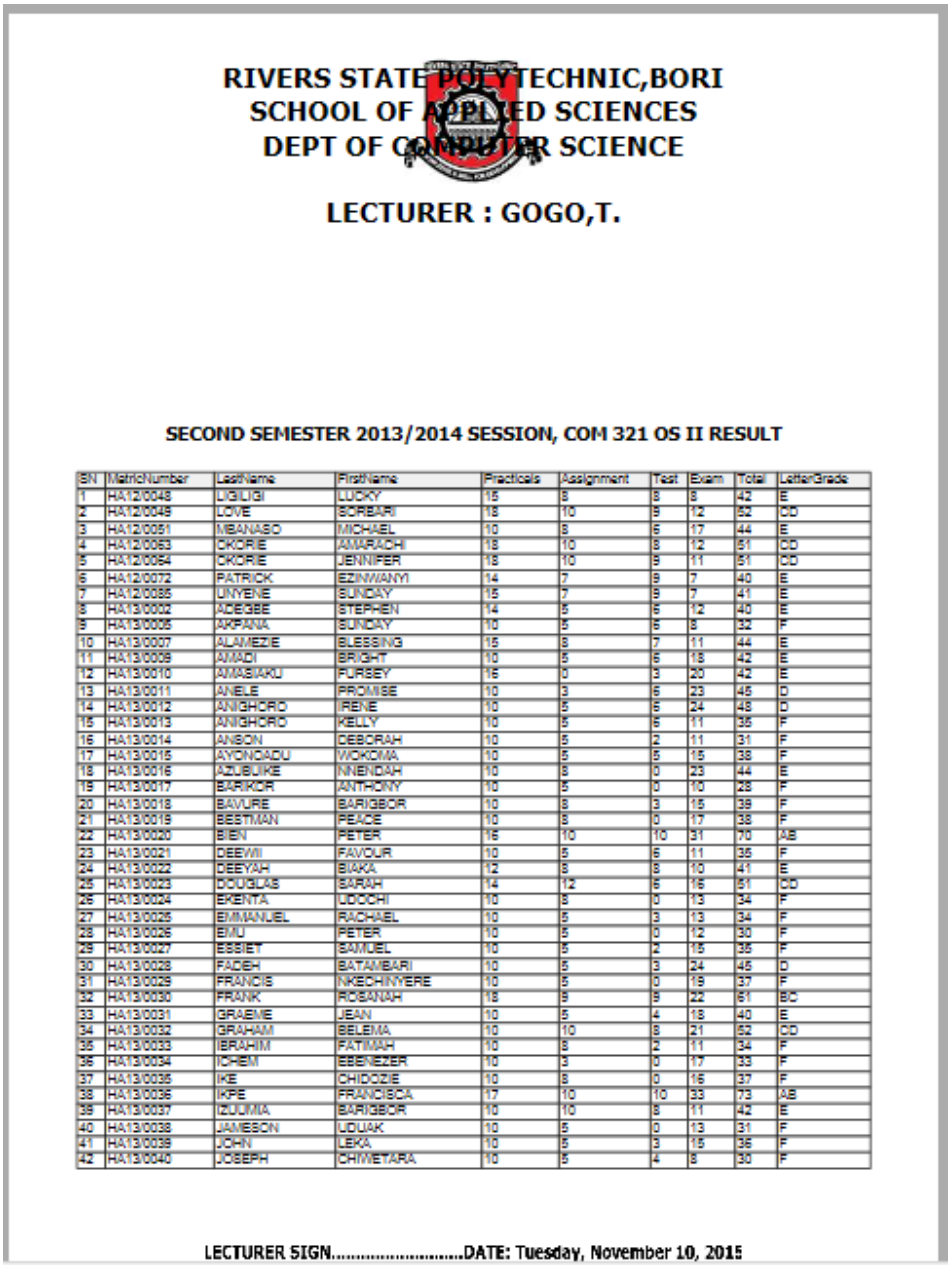


Fig.12: Class Result attached as attachment to be sent to the Departmental Head or anyone in charge

RESULT SHEET



RIVERS STATE POLYTECHNIC,BORI
SCHOOL OF APPLIED SCIENCES
DEPT OF COMPUTER SCIENCE

LECTURER : GOGO,T.

SECOND SEMESTER 2013/2014 SESSION, COM 321 OS II RESULT

SN	MatricNumber	LastName	FirstName	Practicals	Assignment	Test	Exam	Total	LetterGrade
1	HA12/0048	LIGILIGI	LUCKY	15	8	8	8	42	E
2	HA12/0049	LOVE	SORBARI	18	10	9	12	52	CD
3	HA12/0051	MBANASO	MICHAEL	10	8	6	17	44	E
4	HA12/0063	OKORIE	AMARACHI	18	10	8	12	51	CD
5	HA12/0064	OKORIE	JENNIFER	18	10	9	11	51	CD
6	HA12/0072	PATRICK	EZINWANYI	14	7	9	7	40	E
7	HA12/0085	UNYENE	SUNDAY	15	7	9	7	41	E
8	HA13/0002	ADEGBE	STEPHEN	14	5	6	12	40	E
9	HA13/0005	AKPANA	SUNDAY	10	5	5	8	32	F
10	HA13/0007	ALAMEZIE	BLESSING	15	8	7	11	44	E
11	HA13/0009	AMADI	BRIGHT	10	5	6	18	42	E
12	HA13/0010	AMASIAKU	FURSEY	15	0	3	20	42	E
13	HA13/0011	ANELE	PROMISE	10	3	6	23	45	D
14	HA13/0012	ANIGHORO	IRENE	10	5	6	24	48	D
15	HA13/0013	ANIGHORO	KELLY	10	5	6	11	36	F
16	HA13/0014	ANSON	DEBORAH	10	5	2	11	31	F
17	HA13/0015	AYONDADU	WOKOMA	10	5	5	15	38	F
18	HA13/0016	AZUBUIKE	NNENDAH	10	8	0	23	44	E
19	HA13/0017	BARIKOR	ANTHONY	10	5	0	10	28	F
20	HA13/0018	BAVURE	BARIGBOR	10	8	3	15	39	F
21	HA13/0019	BESTMAN	PEACE	10	8	0	17	38	F
22	HA13/0020	BIEN	PETER	15	10	10	31	70	AB
23	HA13/0021	DEEWII	FAVOUR	10	5	6	11	35	F
24	HA13/0022	DEEYAH	BIAKA	12	8	8	10	41	E
25	HA13/0023	DOUGLAS	SARAH	14	12	6	16	51	CD
26	HA13/0024	EKENTA	UDOCHI	10	8	0	13	34	F
27	HA13/0025	EMMANUEL	RACHAEL	10	5	3	13	34	F
28	HA13/0026	EMU	PETER	10	5	0	12	30	F
29	HA13/0027	ESSIET	SAMUEL	10	5	2	15	35	F
30	HA13/0028	FADEH	BATAMBARI	10	5	3	24	45	D
31	HA13/0029	FRANCIS	NKECHINYERE	10	5	0	19	37	F
32	HA13/0030	FRANK	ROSANAH	18	9	9	22	61	BC
33	HA13/0031	GRAEME	JEAN	10	5	4	18	40	E
34	HA13/0032	GRAHAM	BELEMA	10	10	8	21	52	CD
35	HA13/0033	IBRAHIM	FATIMAH	10	8	2	11	34	F
36	HA13/0034	ICHEM	EBENEZER	10	3	0	17	33	F
37	HA13/0035	IKE	CHIDOZIE	10	8	0	16	37	F
38	HA13/0036	IKPE	FRANCISCA	17	10	10	33	73	AB
39	HA13/0037	IZUMIA	BARIGBOR	10	10	8	11	42	E
40	HA13/0038	JAMESON	UDUAK	10	5	0	13	31	F
41	HA13/0039	JOHN	LEKA	10	5	3	15	36	F
42	HA13/0040	JOSEPH	CHIMETARA	10	5	4	8	30	F

LECTURER SIGN.....DATE: Tuesday, November 10, 2015

Fig.13: Final Printable Result Sheet

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 aMicrosoftexcel converted sheet to the HOD or the ICT for further result computation.

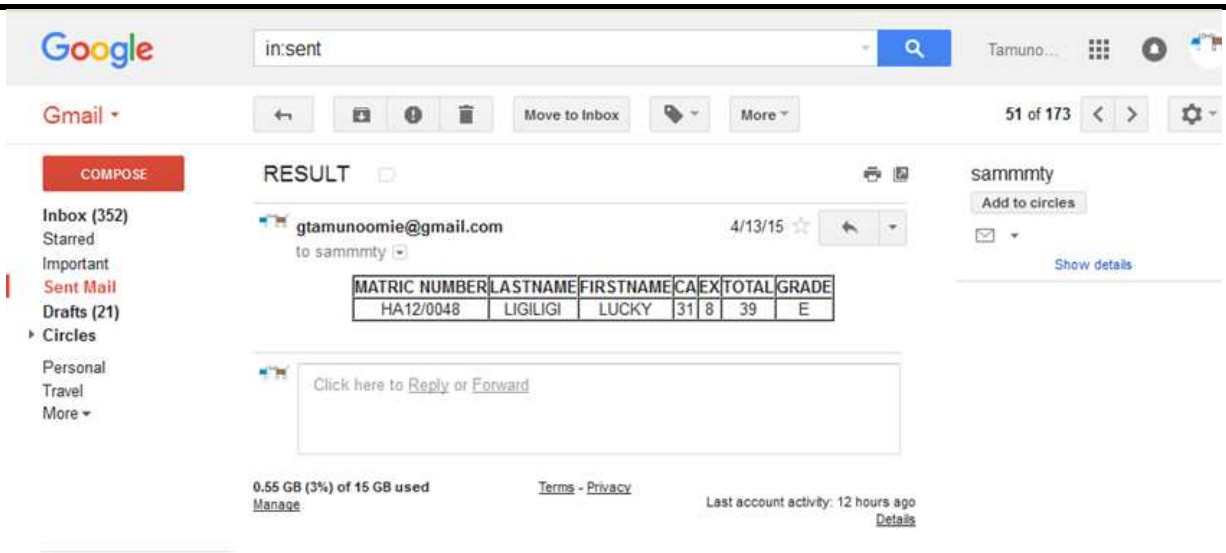


Fig.14: Emailed result to Student.

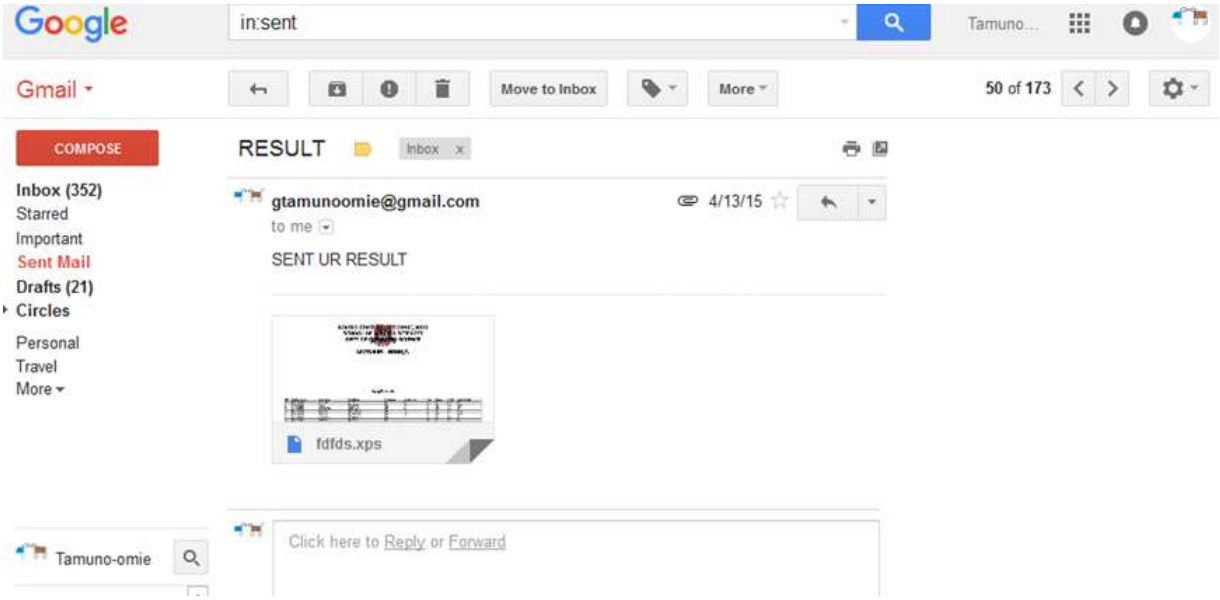


Fig.15: Emailed result to HOD/ICT.

FUTURE SYSTEM OVERVIEW

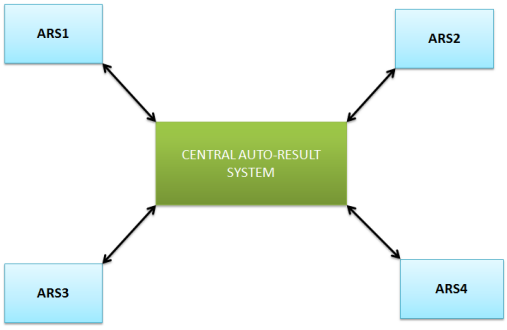


Fig.16: Conceptual future design of the system

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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