

Microsoft Excel 2007 Programme for Effective Tertiary Institution Result Grading

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Abstract

Microsoft Excel 2007 Programme for effective Tertiary Institution result grading is an enhanced and interactive method of managing and processing key issues in Tertiary Institution, which are the problems of result grading. Grading of in course, exams and keeping track of grades in a grade book is one of the most laborious tasks a lecturer can undergo. Small errors can creep into your grade book when you add up scores, possibly resulting in your posting an incorrect student grade. Using Microsoft Excel 2007 to keep track of grades not only cuts down on the amount of work you have to do, but also cuts down or even eliminates mathematical errors. This study has addressed this key issue with a programme, from step one to step six.

Keywords: Microsoft Excel 2007, Result, Grading Computation, Tertiary Institution.

1 Introduction

A spreadsheet is the computer equivalent of a paper ledger sheet. It consists of a grid made of columns and rows. It is an environment that can make number manipulations easy and straightforward. Microsoft (MS) Excel is a spreadsheet application that is part of Microsoft Office. It enables the calculation and display of complex mathematical formulas (functions) with a facility for extensive formatting. Functions are predefined calculations that may be included in any given Excel cell to perform specific manipulation of data. Using MS Excel, data may be imported from a variety of sources. Analyzing data is a very important skill of any professional, especially those who work in the tertiary institutions where students' result computation and grading must be carried out immediately after examination. As a student and a professional, MS Excel can assist you in the analysis of data. This tutorial focuses on introducing the basic features of MS Excel 2007 to analyze and grade students' exams. It will also cover the basic steps of creating a spreadsheet, using formulas and basic formatting (Walid, 2012). Spreadsheet also eases the task of budgeting, financial analysis, accounting, cost estimation, business calculations, scientific and statistical analyses, creating of reports and charts etc. Other Spread Sheet application packages are:

- Supercalc
- Lotus 1-2-3,
- Plan perfect
- Vp planner
- Visicalc
- Multiplan
- QuattroPro, etc.

Excel does forte perform numerical calculations, and it also very useful for non-numerical applications. The uses of Excel can summarize as follows:

- **Number crunching:** Create budgets, grading of results, analyze survey results, perform just about any type of financial analysis you can think of.
- **Creating charts:** Create a wide variety of highly customizable charts.
- **Organizing lists:** Use the row-and-column layout to store lists efficiently.
- **Accessing other data:** Import data from a wide variety of sources.
- **Creating graphics and diagrams:** Use Shapes and the new SmartArt to create professional-looking diagrams.
- **Automating complex tasks:** Perform a tedious task with a single mouse click with Excel's macro capabilities.

Starting and Exiting Microsoft Excel 2007 Package

Microsoft Office Excel 2007 provides several methods for starting and exiting the program. You can open Excel

by using the Start menu or a desktop shortcut. When you want to exit Excel, you can do so by using the Office button, the Close button, or a keyboard shortcut (ALT + F4).

This study is aim at managing and processing key issues in Tertiary Institution, which are the problems of result grading and computations using MS-Excel 2007.

Method for Operation

Starting Excel 2007 from the Start menu

- Click start button usually located at the bottom of the screen, on the left corner (called task bar). Place the cursor and click on the button **START** and the menu will unfold; place the cursor on **ALL PROGRAMS**. The list of all the programs installed in your computer will be displayed. Place the mouse arrow on the folder with the name **MICROSOFT OFFICE** and click on **MICROSOFT OFFICE EXCEL 2007**. This will start the program



Fig 1: Start Menu Screen

- From the **EXCEL 2007 ICON** on the desk top, Double Click to Open or Click once and press **ENTER** on the Keyboard



Fig 2: Excel 2007 Icon

The Opening Screen

When you start, Excel will display an opening screen like the one below. Let us see what its fundamental components are, so you can learn the names of the different elements so that it becomes easier for you to understand the course. The screen displayed below (and all the screens in this course) may not exactly coincide with the one that you see in your computer, because every user can choose the elements he/she wants displayed at any given time.

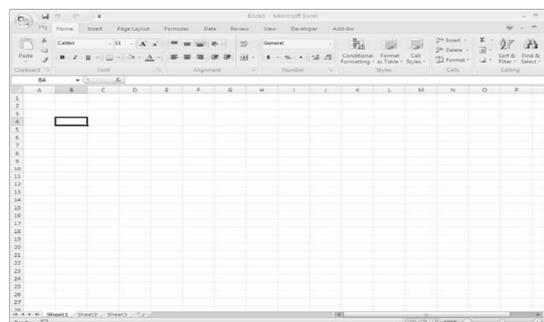


Fig 3: Microsoft Excel Environment

Exploring the Excel Environment

The **tabbed Ribbon menu system** is how you navigate through Excel and access the various Excel commands. If you have used previous versions of Excel, the Ribbon system replaces the traditional menus. Above the Ribbon in the upper-left corner is the **Microsoft Office Button**.



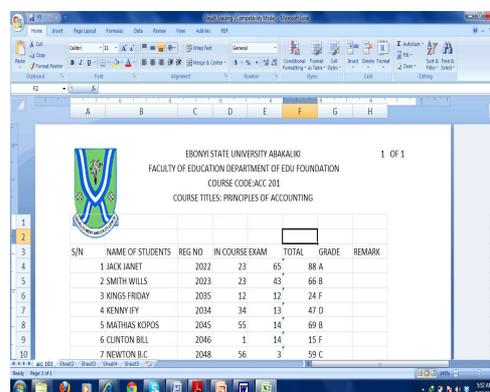
Fig 4: Exploring Microsoft Excel 2007 Environment

From here, one can access important options such as New, Save, Save As, and Print. By default the **Quick Access Toolbar** is pinned next to the Microsoft Office Button, and includes commands such as Undo and Redo. (John, 2007)

At the bottom, left area of the spreadsheet, you will find worksheet tabs. By default, **three worksheet tabs** appear each time you create a new workbook. On the bottom, right area of the spreadsheet you will find page view commands, the zoom tool, and the horizontal scrolling bar.

Result and Discussion

Computation and Grading using MS-EXCEL 2007

A screenshot of Microsoft Excel 2007 showing a worksheet with a header and a table of student results. The header includes the school logo and name, faculty, department, course code, and course title. The table has columns for S/N, Name of Students, Reg No, In Course Exam, Total, Grade, and Remark.

S/N	NAME OF STUDENTS	REG NO	IN COURSE EXAM	TOTAL	GRADE	REMARK
1	JACK JANET	2022	23	65	88 A	
2	SMITH WILLIS	2023	23	43	66 B	
3	KINGS FROYD	2035	12	12	24 F	
4	KENNY IY	2034	34	13	47 D	
5	MATHIAS KOPOS	2045	55	14	69 B	
6	CLINTON BILL	2046	1	14	15 F	
7	NEWTON B.C	2048	56	3	59 C	

Fig 5: Sample Screen of Result Grading using Microsoft Excel 2007

STEPS 1: CREATE A CUSTOM HEADER FOR YOUR EXCEL 2007 WORKSHEETS

Adding headers to Excel 2007 worksheets differs significantly from earlier releases. Instead of working with a separate Page Setup dialog, Excel 2007 lets you work with the header directly on the worksheet in Page Layout view. For example, to create a header with the title, “as shown in our sample screen” in the center, the school logo inserted at the left margin, and the date inserted at the right margin, follow these steps:

1. Click the View tab and then click Page Layout in the Workbook Views group.
2. Click the words Click to Add Header above row 1.
3. Type the header shown in our sample screen. (Note that you must enter the ampersand twice in order to enter it as a character, when using it in place of “AND”).
4. Click outside the box to the left of the title.

5. In Header & Footer Design Ribbon, click Picture in the Header & Footer Elements group.
6. Browse to the file containing your company's logo, and then click Insert.
7. Click any cell in the worksheet.
8. Click on the logo.
9. In Header & Footer Tools Design Ribbon, select Format Picture in the Header and Footer Elements group.
10. Click the Down arrow of the Height box until it reaches 50%, then click OK.
11. Click to the right of the worksheet title near the right margin.
12. Click Current Date in the Header & Footer Elements group of the Header & Footer Tools Design tab.
13. Click in any cell to exit the Header/Footer mode.

You can perform similar operations to create footer for your worksheet. To access the footer area of your worksheet, click anywhere in the header, then click Go To Footer in the Navigation group of the Header & Footer Tools tab. (Harvey, Greg, 2007)

STEP 2: DATA ENTRY

Whatever you are doing on a cell, it is always important to know what cell you are working on. The minimum piece of information you need about a cell is to know which one you are using at a particular time. To make this recognition a little easier, each cell has an address also called a location. This address or location also serves as the cell's primary name.

To know the location of a cell, you refer to its column and its row. The combination of the column's name and the row's label provides the address or name of a cell. When you click a cell, its column header becomes highlighted in orange. In the same way, the row header of a selected cell is highlighted in orange. To know the name of a cell, you can refer to the Name Box, which is located at the intersection of columns and rows' headers:

1. First, place the cursor in the cell in which you want to start entering data. Start Typing your result headings S/N, STUDENTS NAME, REG. NO., INCOURSE, EXAM, TOTAL, GRADE as shown in the sample screen.
2. Next, fill your students' exam records as shown in our sample screen in fig. 5.

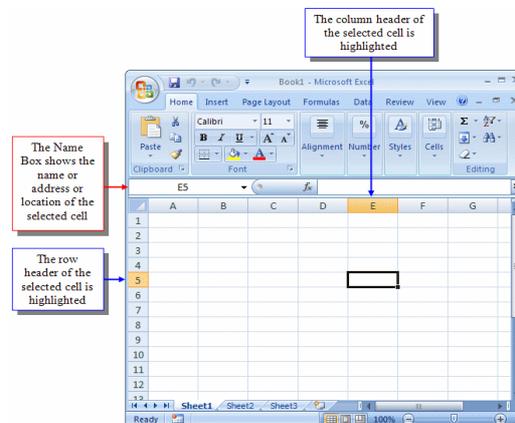


Fig 6: Microsoft Excel Environment Showing ActiveCell (E5)

STEPS 3: SUMMATION OF INCOURSE AND EXAM SCORE

A major strength of Excel 2007 is that you can perform mathematical calculations and format your data. In this step, you learn how to perform basic mathematical calculations using function, (such as +, -, *, or /) and formula to achieve the same purpose. When using a function, remember the following:

1. Use an equal sign to begin a formula.
 2. Specify the function name.
 3. Enclose arguments within parentheses. Arguments are values on which you want to perform the calculation.
- For example, arguments specify the numbers or cells you want to add. From our sample screen in fig. 5, to compute the total sum of the In-course and Exam of **JACK JANET**, Click on the cell F4, which is where you want the total score to appear and perform the following:

Using the Sum Function

1. Select cell F4.
2. Type " = sum(" in the cell.
3. Use the mouse point to drag select cells D4 to E4, which will appear as D4: E4 where D4 is the in-course and E4 is the Exam
4. Type the closing round bracket ") " to complete the function, which will appear as =SUM(D4:E4).
5. Press the ENTER key on the keyboard.

In this function:

The equal sign begins the function.

SUM is the name of the function.

D4:E4 are the arguments.

Open and Close Parentheses enclose the arguments.

Excel will complete the function name and enter the first parenthesis

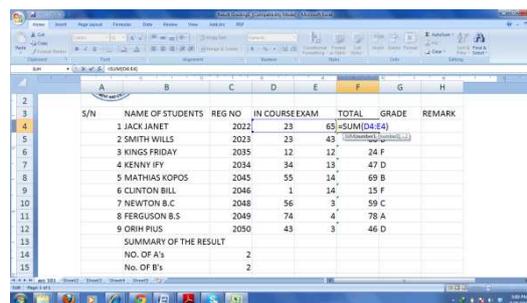


Fig. 7: SUM Function

Formula Basics

A formula is entered into a cell. It performs a calculation of some type and returns a result, which is displayed in the cell. Formulas use a variety of operators and worksheet functions to work with values and text. The values and text used in formulas can be located in other cells, which makes changing data easy and gives worksheets their dynamic nature. For example, you can still achieve the same by performing see multiple scenarios quickly by changing the data in a worksheet and letting your formulas do the work.

A formula can consist of any of these elements:

- Mathematical operators, such as + (for addition) and * (for multiplication)

- Cell references (including named cells and ranges)

- Values or text

- Worksheet functions (such as SUM or AVERAGE)

After you enter a formula, the cell displays the calculated result of the formula. The formula itself appears in the Formula bar when you select the cell, however. Following our sample screen in fig. 5, total score can be achieving using formulas as shown below:

=D4+E4, Adds the values in cells D4 and E4 and press Enter on the keyboard.

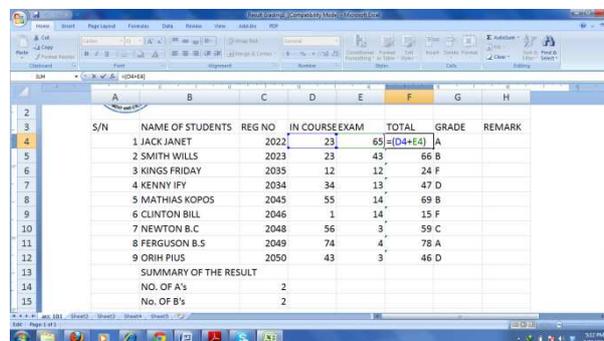


Fig. 8: Formula Basics

STEP 4: AUTOFILL OTHER STUDENT RECORDS

We have 88 as the total score for Jack Janet from our sample screen in cell F4, but nothing else. We'll now use the AutoFill feature of Excel to quickly enter the total score for other students. Off we go, then.

Excel AutoFill

Click inside cell F4 of your spreadsheet, where we have 88 as the total as shown below:

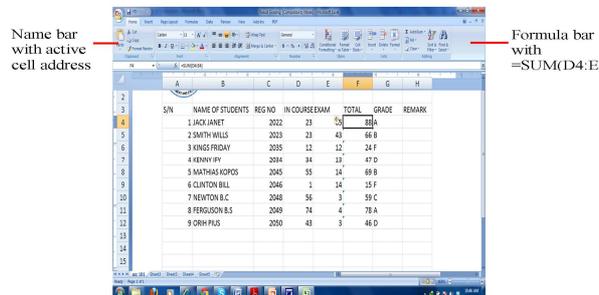


Fig 9 (i): AutoFill Operation

Next, we want the total score to be entered on the other Rows of our spreadsheet, from cell F4 to cell F12. Fortunately, you don't have to type them all out, once we have the first cell F4 entered. You can use something call AutoFill to compute the total for other students. In other words, Excel will do it all for us.

- Position your mouse pointer to the bottom right of the F4 cell
- The mouse pointer will change to a black cross, as in the images below. the image on the right, the black cross, tells you AutoFill is available:

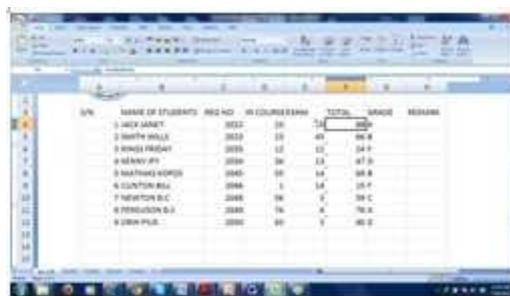


Fig 9 (ii): Autofill Operation

- When you can see the AutoFill cursor, hold down your left mouse button and drag downward
- Drag your mouse all the way to cell F12, as in the following image:

N/B: F12 is the last record in our sample screen.

Fig 9 (iii): Autofill Operation

- When your cursor is in the F12 cell, let go of the left mouse button
- Excel will now complete the total scores for you as shown above

STEP 5: GRADING OF RESULTS

This can be done using IF FUNCTION in Excel 2007. The IF function can be quite useful in a spreadsheet. It is used when you want to test for more than one value. Here, we will see how to use the IF Function to grade student exam scores. If the student has above 70 (i.e., 70 - 100), award an A grade; if the student scores between 0 - 39, award a fail grade. First, here's what an IF Function looks like:

IF(logical_test, value_if_true, value_if_false,)

The thing to note here is the three items between the round brackets of the word IF. These are the arguments that the IF function needs. Here's what they mean:

logical_test

The first argument is what you want to test for. Is the number in the cell greater than 80, for example?

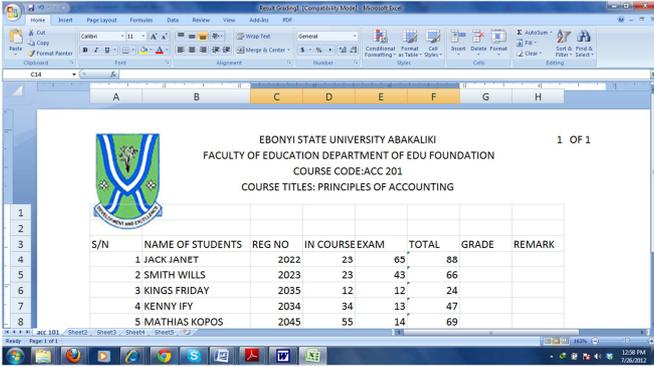
value_if_true

This is what you want to do if the answer to the first argument is YES. (Award an A grade, for example)

value_if_false

This is what you want to do if the answer to the first argument is NO. (Award a FAIL grade.)

Consider our Student Exam sample screen in fig. 5. The spreadsheet we created to track our students' looks like this, after computing the total scores:



S/N	NAME OF STUDENTS	REG NO	IN COURSE EXAM	TOTAL	GRADE	REMARK
1	JACK JANET	2022	23	65	88	
2	SMITH WILLS	2023	23	43	66	
3	KINGS FRIDAY	2035	12	12	24	
4	KENNY IFY	2034	34	13	47	
5	MATHIAS KOPOS	2045	55	14	69	

Fig 10: Student Exam Sample Screen

However, we want to display the following grades as well:

A If the student scores 70 or above

B If the student scores 60 to 69%

C If the student scores 50 to 59%

D If the student scores 45 to 49%

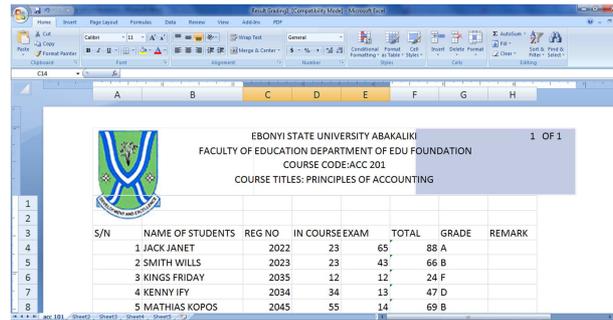
E if the student scores 40 to 44%

FAIL If the student scores 0 to 39%

With such a lot to check for, what will the IF Function look like? Here's one that works:

=IF(F4>=70,"A",IF(F4>=60,"B",IF(F4>=50,"C",IF(F4>=45,"D",IF(F4>=40,"E","F"))))

Quite long, isn't it? Look at the colours of the round brackets above, and see if you can match them up. What we're doing here is adding more IF Functions if the answer to the first question is NO. If it's YES, it will just display an "A" But take a look at our Student Exam spreadsheet now:



S/N	NAME OF STUDENTS	REG NO	IN COURSE EXAM	TOTAL	GRADE	REMARK
1	JACK JANET	2022	23	65	88 A	
2	SMITH WILLS	2023	23	43	66 B	
3	KINGS FRIDAY	2035	12	12	24 F	
4	KENNY IFY	2034	34	13	47 D	
5	MATHIAS KOPOS	2045	55	14	69 B	

Fig 11: Student Result Sheet

After the correct answer is displayed in cell G4 on the spreadsheet above, we used AutoFill for the rest!

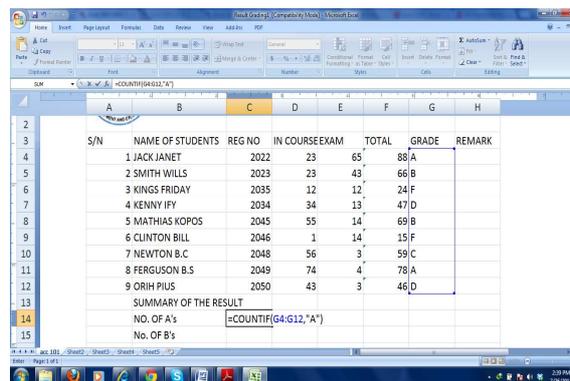
STEP 6: SUMMARY OF THE GRADE USING COUNTIF CONDITION

This one is fairly straightforward. As its name suggests, it counts things! But it counts things IF a condition is met. For example, keep a count of how many students have an A Grade.

To get you started with this function, we'll use our Student Grade spreadsheet shown in fig. 11 and count how many students have a score of 70 or above, that is "A". First, add the summary label (SUMMARY OF THE RESULT) to your spreadsheet:

As you can see, we have put our new label at the bottom of the B column. We can now use the CountIF function to see how many of the students scored A.

The CountIF function looks like this: **COUNTIF(range, criteria)**



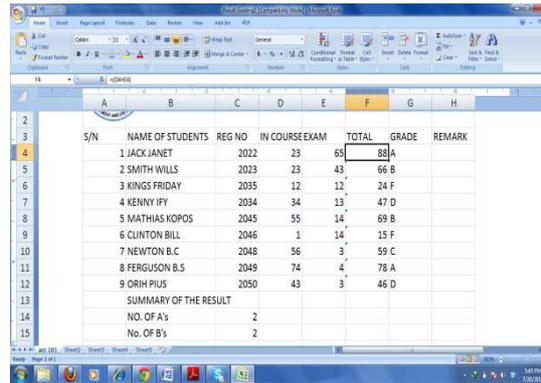
S/N	NAME OF STUDENTS	REG NO	IN COURSE EXAM	TOTAL	GRADE	REMARK
1	JACK JANET	2022	23	65	88 A	
2	SMITH WILLS	2023	23	43	66 B	
3	KINGS FRIDAY	2035	12	12	24 F	
4	KENNY IFY	2034	34	13	47 D	
5	MATHIAS KOPOS	2045	55	14	69 B	
6	CLINTON BILL	2046	1	14	15 F	
7	NEWTON B.C	2048	56	3	59 C	
8	FERGUSON B.S	2049	74	4	78 A	
9	ORIH PIUS	2050	43	3	46 D	
SUMMARY OF THE RESULT						
NO. OF A's		=COUNTIF(G4:G12,"A")				
No. OF B's						

Fig 12: CountIF Function

The function takes two arguments (the words in the round brackets). The first argument is range, and this means the range of cells you want Excel to count. Criteria means, "What do you want Excel to look for when it's counting?".

So click inside cell C14, and then click inside the formula bar at the top. Enter the following formula: **=CountIf(G4:G12, "A")**

The cells G4 to G12 contain the Grade for all 9 students will be highlighted as shown in fig. 12 above. It is these scores we want to count. Press the enter key on your keyboard. Excel should give you an answer of 2:



S/N	NAME OF STUDENTS	REG NO	IN COURSE EXAM	TOTAL	GRADE	REMARK
1	JACK JANET	2022	23	69	88A	
2	SMITH WILLIS	2023	23	43	66 B	
3	KINGS FRIDAY	2035	12	12	24 F	
4	KENNY IFE	2034	34	13	47 D	
5	MATHIAS KOPOS	2045	55	14	69 B	
6	CLINTON BILL	2046	1	14	15 F	
7	NEWTON B.C	2048	56	3	59 C	
8	FERGUSON B.S	2049	74	4	78 A	
9	ORIH PIUS	2050	43	3	46 D	
SUMMARY OF THE RESULT						
NO. OF A'S			2			
NO. OF B'S			2			

Fig 13: Summary of grade result

Conclusion

Microsoft (MS) Excel is a spreadsheet application that is part of Microsoft Office. It enables the calculation and display of complex mathematical formulas (functions) with a facility for extensive formatting.

Grading of in course, exams and keeping track of grades in a grade book is one of the most laborious tasks a lecturer can undergo. The managing and processing of key issues in Tertiary Institution, which are the problems of result grading and computations has been addressed in this study using MS-Excel 2007. These was addressed with step one to step six programme.

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