# Using Lotus 1-2-3 to Compute Grades

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Evidences have shown that many teachers and principals of schools are using Lotus for budgeting, keeping inventory, computing marks, storing students' profile and other administrative purposes. As the teachers in the schools begin to use Lotus, they will find it more and more useful. For example, with the use of the look-up table, teachers in the secondary schools will save a lot of time computing grades. The following itlustrates an example of using Lotus 1-2-3 in the school.

Let's take a look at an example.

| | A | 8 | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| 1 | Name | Project | Assign | Exam | Total | Grade | | |
| 2 | | (20%) | (40%) | (40%) | (100%) | | | |
| 3 | | | | | | | | |
| 4 | Abdul Ghani | 15 | 34 | 29 | | | 0 | F9 |
| 5 | Ho Lan Fong | 12 | 28 | 34 | | | 39.499 | E8 |
| 6 | Chua Sao Soon | 18 | 35 | 33 | | | 44.499 | D7 |
| 7 | Goh Fang Har | 12 | 29 | 36 | | | 49.499 | C6 |
| 8 | Wee Chun Seng | 11 | 37 | 30 | | | 54.499 | C5 |
| 9 | | | | | | | 59.499 | 84 |
| 10 | | | | | | | 64.499 | 83 |
| 11 | | | | | | | 69.499 | A2 |
| 12 | | | | | | | 74.499 | A1 |

To find the total at cell E4, position the pointer at E4 and enter this formula @sum(b4..d4).

To find the total at column E, copy the formula from E4.

```
                        TYPE      : /
                        TYPE      : C      (for Copy)
        Enter range to copy FROM        : E4
                        PRESS    : [ENTER]
        Enter range to copy TO          : E5..E8
                        PRESS    : [ENTER]
```

## The @VLOOKUP Formula

To find the grade at cell F4. position pointer at cell F4 and enter this lookup formula @VLOOKUP (E4, $G$4..H$12, 1).

The function of the @VLOOKUP formula is to retrieve data from lists and tables. As its name implies, this function "look-up" a value from the cell located at its immediate left and compares this value with a table.

In the above example, E4 is the cell reference.
$G$4 is the begining of range.
H$12 is the end of range.
1 is the column offset.

Note also that @VLOOKUP, V stands for vertical (columns) and that @HLOOKUP, H stands for horizontal (rows).

To find the grades at column F, copy the formula from F4.

```
                              TYPE    : /
                              TYPE    : C   (for Copy)
        Enter range to copy FROM           : F4
                              PRESS : [ENTER]
        Enter range to copy TO             : F5..F8
                              PRESS : [ENTER]
```

## The Look-up table

Study columns G and H. Column G gives you a range of marks and column H gives you a range of grades. For example, grade F9 in column H is between 0 and 39.499 marks. Grade E8 is 39.5 to 44.499 and grade 07 is between 44.5 to 49.499. In all these cases, the figures after the decimal fractions are necessary as the totals in column E do have decimal fractions. Test the table to see whether it is similar to what your school uses. Change the table if necessary. Some of you may have to use F9 to be between 0 and 39.499999!

The table above can be squeezed to accomodate more columns and all the data will appear in a page, Let's study one example:

|    | A | BCDEF | GHIJK | LMNOP | QRSTU | VU | etc. |
|----|---|-------|-------|-------|-------|-----|------|
| 1  | | | | | | | |
| 2  | XYZ Secondary School | | | | | | |
| 3  | Secondary Four B | | | | | | |
| 4  | Mid-Year Exam Result (1988) | | | | | | |
| 5  | | | | | | | |
| 6  | | | | | | | |
| 7  | | English | Sec. Lang | Lit | Maths | A. Maths | Chem |
| 8  | | | | | | | |
| 9  | Name | PIAIEITIGI | IPIAIEITIGI | IPIAIEITIGI | IPIAIEITIGI | IPIAIEITIG | IPIAIEITI( |
| 10 | | | | | | | |
| 11 | Ghazli | | | | | | |
| 12 | Lan Fang | | | | | | |
| 13 | Sao Soon | | | | | | |
| 14 | Fang Har | | | | | | |
| 15 | Chun Sin | | | | | | |
| etc. | | | | | | | |

P=PROJECT    A=ASSIGNMENT    E=EXAM    T=TOTAL    G=GRADE

To reduce column width to two spaces,

| TYPE | / |
|------|---|
| TYPE | : . W (for Worksheet) |
| TYPE | C (for Column) |
| TYPE | S (for Set-width) |
| TYPE | 2 (for 2 spaces) |
| PRESS | [ENTER] |

Please note that lookup table may be placed at the extreme right of the spreadsheet and it may not appear in the screen of the computer as it should not be included in the print range.

In some schools, this is not the end of the computation. Teachers sometimes would have to count the frequency of scores and make a final adjustment to the scores if the distribution is skewed. Do not worry, Lotus can do that for you.

## To find the frequency of scores

Let's find the distribution of scores for the subject English in the previous example.

|  |  |
|---|---|
| | TYPE  : / |
| | TYPE  : O  (for Data) |
| | TYPE  : O  (for Distribution) |
| Enter Values range | : E11..E15 |
| | PRESS : **[ENTER]** |
| Enter Bin range | : AF12..AF22 |
| | PRESS : **[ENTER]** |

|  |  | AF | AG | AH | AI | AJ |
|---|---|---|---|---|---|---|
| 10 | | | | | | |
| 11 | | | | | | |
| 12 | | 0 | | | | |
| 13 | | 39.499 | | F9 | | |
| 14 | | 44.499 | | E8 | | |
| 15 | | 49.499 | | 07 | | |
| 16 | | 54.499 | | C6 | | |
| 17 | Bin Range => | 59.499 | | C5 | | < Frequency |
| 18 | | 64.499 | | B4 | | Values |
| 19 | | 69.499 | | B3 | | |
| 20 | | 74.499 | | A2 | | |
| 21 | | | | A1 | | |
| 22 | | | | | | |
| 23 | | | | | | |

**|** distribution of scores

Please note that F9 grade should be found in AH13 and not AH12. Column AG should be left empty for the distribution of scores.

Soon, school administrations would like to see the graph of the distribution of scores. Well, Lotus can do that too.

To view the graph of the distribution of scores,

|        |        |        |
|--------|--------|--------|
| TYPE   | : /    |        |
| TYPE   | : G    | (for Graph) |
| TYPE   | : T    | (for Type) |
| TYPE   | : B    | (for Bar) |
| TYPE   | : X    | (for X-axis) |

Enter X-axis range          AH13..AH23

|        |        |        |
|--------|--------|--------|
| PRESS  | : **[ENTER]** |        |
| TYPE   | : A    | (for first data range) |

Enter first data range       AG13..AG23

|        |        |        |
|--------|--------|--------|
| PRESS  | : **[ENTER]** |        |
| TYPE   | : V    | (for View) |

From the distribution of scores, further adjustment of the scores can be made if necessary. This is the advantage of using the computer. You simply change the raw score and the total and grade would be altered without much effort.

## Printing the spreadsheet

|        |        |        |
|--------|--------|--------|
| TYPE   | *: /*  |        |
| TYPE   | : P    | (for print) |
| TYPE   | : P    | (for printer) |

Enter Print Range : TYPE    :A1..F43

|        |        |        |
|--------|--------|--------|
| PRESS  | : **[ENTER]** |        |
| TYPE   | : A    | (please align your paper and switch on the printer) |
| TYPE   | : G    | (for go) |

After printing,    TYPE    : Q    (for quit)

Use it very often and you will find Lotus 1-2-3 a fantastic educational tool!