
UTM
UNIVERSITI TEKNOLOGI MALAYSIA

SCHOOL OF COMPUTING
Faculty of Engineering

SEMESTER 1

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SECP3133 - HIGH PERFORMANCE DATA PROCESSING

# CASE STUDY 1: EXAMINATION RESULTS

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SECTION : 01

SUBMISSION DATE : 18/12/2021

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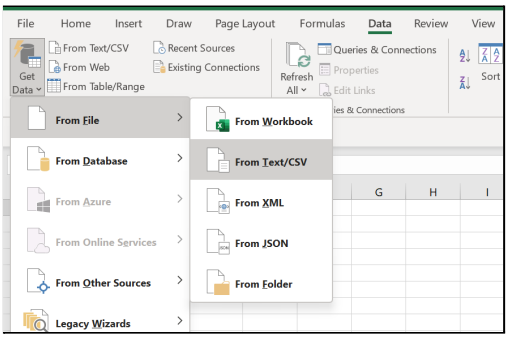
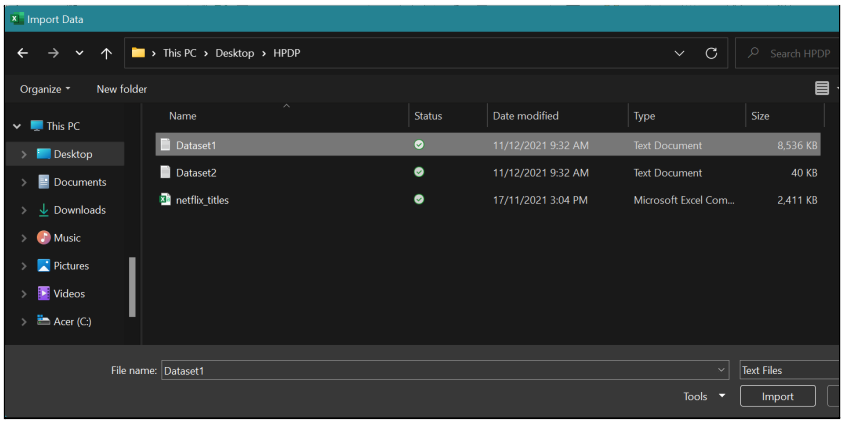
# Detailed Steps

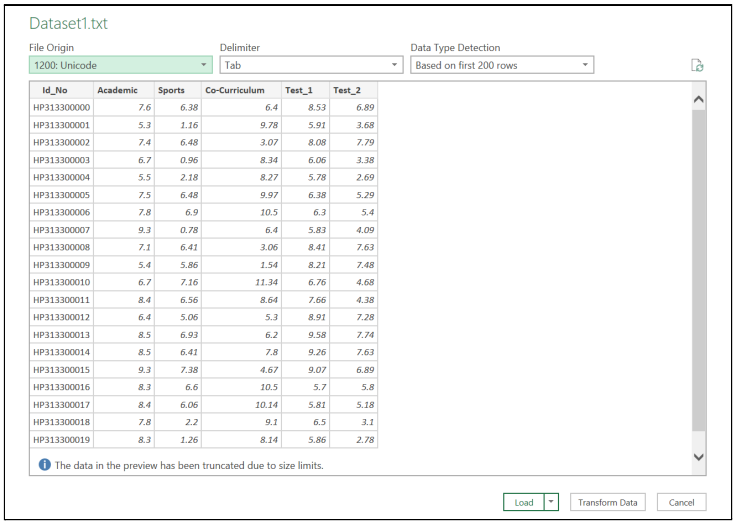
## Importing and Preprocessing Data

1. To import the dataset file which is in .txt format, go to the Data panel, then select Get Data From Text/CSV. Then, locate the dataset file in the file directory, and click Import to open it.



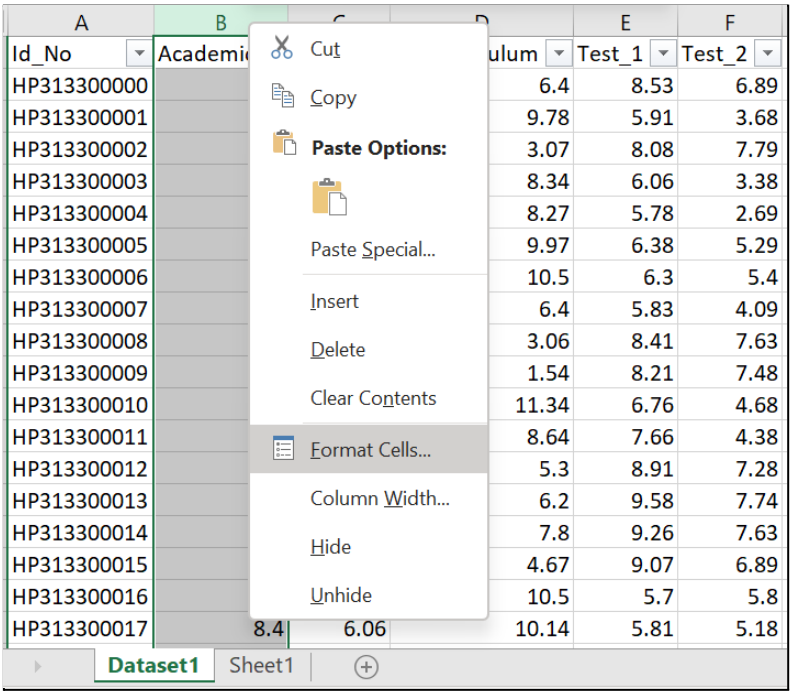

2. Once it opens, we can see the preview of the data in the file. Set the delimiter to Tab so that the data can be nicely tabulated into a table. Then, click Load.



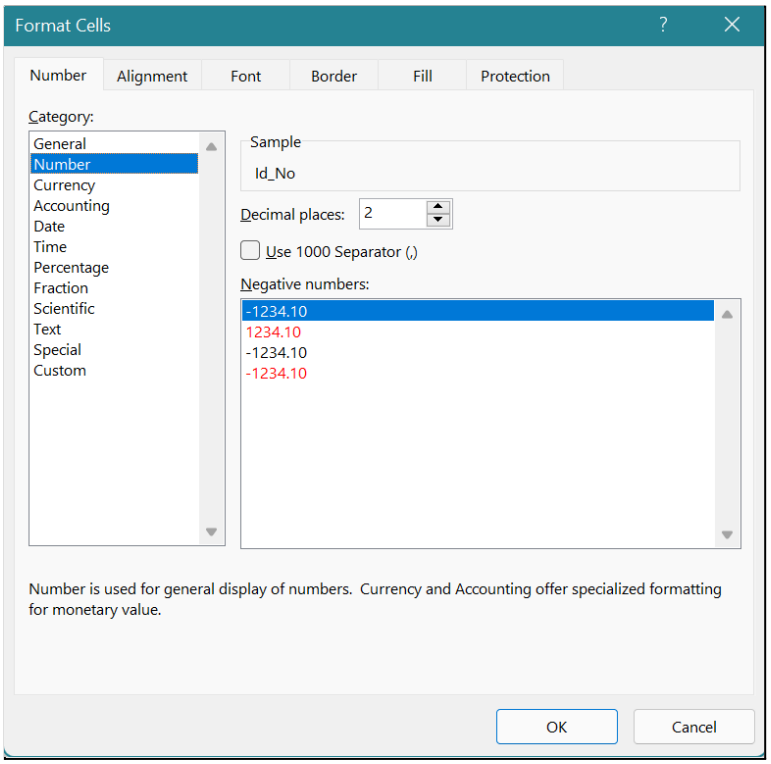
3. The data is now in a table, with six columns or attributes altogether.

| Id_No | Academic | Sports | Co-Curriculum | Test_1 | Test_2 |
|---|---|---|---|---|---|
| HP313300000 | 7.6 | 6.38 | 6.4 | 8.53 | 6.89 |
| HP313300001 | 5.3 | 1.16 | 9.78 | 5.91 | 3.68 |
| HP313300002 | 7.4 | 6.48 | 3.07 | 8.08 | 7.79 |
| HP313300003 | 6.7 | 0.96 | 8.34 | 6.06 | 3.38 |
| HP313300004 | 5.5 | 2.18 | 8.27 | 5.78 | 2.69 |
| HP313300005 | 7.5 | 6.48 | 9.97 | 6.38 | 5.29 |
| HP313300006 | 7.8 | 6.9 | 10.5 | 6.3 | 5.4 |
| HP313300007 | 9.3 | 0.78 | 6.4 | 5.83 | 4.09 |
| HP313300008 | 7.1 | 6.41 | 3.06 | 8.41 | 7.63 |
| HP313300009 | 5.4 | 5.86 | 1.54 | 8.21 | 7.48 |
| HP313300010 | 6.7 | 7.16 | 11.34 | 6.76 | 4.68 |
| HP313300011 | 8.4 | 6.56 | 8.64 | 7.66 | 4.38 |
| HP313300012 | 6.4 | 5.06 | 5.3 | 8.91 | 7.28 |
| HP313300013 | 8.5 | 6.93 | 6.2 | 9.58 | 7.74 |
| HP313300014 | 8.5 | 6.41 | 7.8 | 9.26 | 7.63 |
| HP313300015 | 9.3 | 7.38 | 4.67 | 9.07 | 6.89 |
| HP313300016 | 8.3 | 6.6 | 10.5 | 5.7 | 5.8 |

4. To convert data values of a column to 2 decimal places, click on the column header, then click Format Cells to format all the data in the column. First, we are going to convert the data values of column Academic.



5. In the Format Cells configuration, click on Number in the category panel, and set the decimal places to 2. Then click OK. Repeat steps 4 and 5 on column Sports, Co-Curriculum, Test_1 and Test_2.




6. The dataset will now look like the figure below.

| A | B | C | D | E | F |
|---|---|---|---|---|---|
| Id_No | Academic | Sports | Co-Curriculum | Test_1 | Test_2 |
| HP313300000 | 7.60 | 6.38 | 6.40 | 8.53 | 6.89 |
| HP313300001 | 5.30 | 1.16 | 9.78 | 5.91 | 3.68 |
| HP313300002 | 7.40 | 6.48 | 3.07 | 8.08 | 7.79 |
| HP313300003 | 6.70 | 0.96 | 8.34 | 6.06 | 3.38 |
| HP313300004 | 5.50 | 2.18 | 8.27 | 5.78 | 2.69 |
| HP313300005 | 7.50 | 6.48 | 9.97 | 6.38 | 5.29 |
| HP313300006 | 7.80 | 6.90 | 10.50 | 6.30 | 5.40 |
| HP313300007 | 9.30 | 0.78 | 6.40 | 5.83 | 4.09 |
| HP313300008 | 7.10 | 6.41 | 3.06 | 8.41 | 7.63 |
| HP313300009 | 5.40 | 5.86 | 1.54 | 8.21 | 7.48 |
| HP313300010 | 6.70 | 7.16 | 11.34 | 6.76 | 4.68 |
| HP313300011 | 8.40 | 6.56 | 8.64 | 7.66 | 4.38 |
| HP313300012 | 6.40 | 5.06 | 5.30 | 8.91 | 7.28 |
| HP313300013 | 8.50 | 6.93 | 6.20 | 9.58 | 7.74 |
| HP313300014 | 8.50 | 6.41 | 7.80 | 9.26 | 7.63 |
| HP313300015 | 9.30 | 7.38 | 4.67 | 9.07 | 6.89 |
| HP313300016 | 8.30 | 6.60 | 10.50 | 5.70 | 5.80 |
| HP313300017 | 8.40 | 6.06 | 10.14 | 5.81 | 5.18 |

Dataset1 Sheet1

## Obtaining Grade and Status

7. Next, highlight column B until F, then press on the CTRL button while clicking on the column labels (Academic, Sports, Co-Curriculum, Test_1, Test_2) to deselect them. Then, press on CTRL + C to copy the selected cells.

| A | B | C | D | E | F |
|---|---|---|---|---|---|
| Id_No | Academic | Sports | Co-Curriculum | Test_1 | Test_2 |
| HP313300000 | 7.60 | 6.38 | 6.40 | 8.53 | 6.89 |
| HP313300001 | 5.30 | 1.16 | 9.78 | 5.91 | 3.68 |
| HP313300002 | 7.40 | 6.48 | 3.07 | 8.08 | 7.79 |
| HP313300003 | 6.70 | 0.96 | 8.34 | 6.06 | 3.38 |
| HP313300004 | 5.50 | 2.18 | 8.27 | 5.78 | 2.69 |
| HP313300005 | 7.50 | 6.48 | 9.97 | 6.38 | 5.29 |
| HP313300006 | 7.80 | 6.90 | 10.50 | 6.30 | 5.40 |
| HP313300007 | 9.30 | 0.78 | 6.40 | 5.83 | 4.09 |
| HP313300008 | 7.10 | 6.41 | 3.06 | 8.41 | 7.63 |
| HP313300009 | 5.40 | 5.86 | 1.54 | 8.21 | 7.48 |
| HP313300010 | 6.70 | 7.16 | 11.34 | 6.76 | 4.68 |
| HP313300011 | 8.40 | 6.56 | 8.64 | 7.66 | 4.38 |
| HP313300012 | 6.40 | 5.06 | 5.30 | 8.91 | 7.28 |
| HP313300013 | 8.50 | 6.93 | 6.20 | 9.58 | 7.74 |
| HP313300014 | 8.50 | 6.41 | 7.80 | 9.26 | 7.63 |
| HP313300015 | 9.30 | 7.38 | 4.67 | 9.07 | 6.89 |
| HP313300016 | 8.30 | 6.60 | 10.50 | 5.70 | 5.80 |
| HP313300017 | 8.40 | 6.06 | 10.14 | 5.81 | 5.18 |

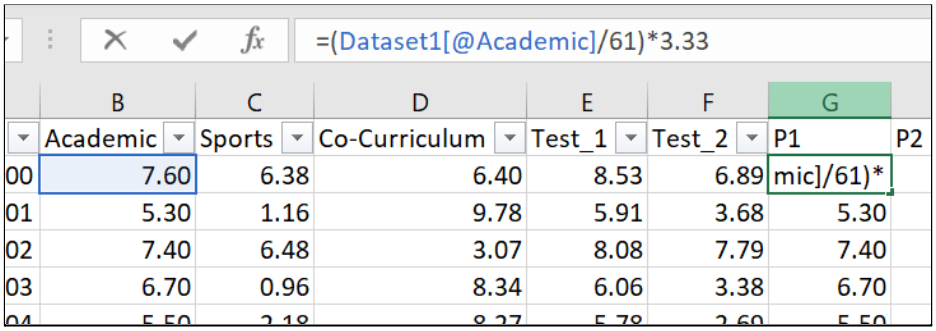
8. Click on the second cell in column G and press CTRL + V to paste the copied data.

| A | B | C | D | E | F | G | H | I | J | K |
|---|---|---|---|---|---|---|---|---|---|---|
| Id_No | Academic | Sports | Co-Curriculum | Test_1 | Test_2 | | | | | |
| HP313300000 | 7.60 | 6.38 | 6.40 | 8.53 | 6.89 | 7.60 | 6.38 | 6.40 | 8.53 | 6.89 |
| HP313300001 | 5.30 | 1.16 | 9.78 | 5.91 | 3.68 | 5.30 | 1.16 | 9.78 | 5.91 | 3.68 |
| HP313300002 | 7.40 | 6.48 | 3.07 | 8.08 | 7.79 | 7.40 | 6.48 | 3.07 | 8.08 | 7.79 |
| HP313300003 | 6.70 | 0.96 | 8.34 | 6.06 | 3.38 | 6.70 | 0.96 | 8.34 | 6.06 | 3.38 |
| HP313300004 | 5.50 | 2.18 | 8.27 | 5.78 | 2.69 | 5.50 | 2.18 | 8.27 | 5.78 | 2.69 |
| HP313300005 | 7.50 | 6.48 | 9.97 | 6.38 | 5.29 | 7.50 | 6.48 | 9.97 | 6.38 | 5.29 |
| HP313300006 | 7.80 | 6.90 | 10.50 | 6.30 | 5.40 | 7.80 | 6.90 | 10.50 | 6.30 | 5.40 |
| HP313300007 | 9.30 | 0.78 | 6.40 | 5.83 | 4.09 | 9.30 | 0.78 | 6.40 | 5.83 | 4.09 |
| HP313300008 | 7.10 | 6.41 | 3.06 | 8.41 | 7.63 | 7.10 | 6.41 | 3.06 | 8.41 | 7.63 |
| HP313300009 | 5.40 | 5.86 | 1.54 | 8.21 | 7.48 | 5.40 | 5.86 | 1.54 | 8.21 | 7.48 |
| HP313300010 | 6.70 | 7.16 | 11.34 | 6.76 | 4.68 | 6.70 | 7.16 | 11.34 | 6.76 | 4.68 |
| HP313300011 | 8.40 | 6.56 | 8.64 | 7.66 | 4.38 | 8.40 | 6.56 | 8.64 | 7.66 | 4.38 |
| HP313300012 | 6.40 | 5.06 | 5.30 | 8.91 | 7.28 | 6.40 | 5.06 | 5.30 | 8.91 | 7.28 |
| HP313300013 | 8.50 | 6.93 | 6.20 | 9.58 | 7.74 | 8.50 | 6.93 | 6.20 | 9.58 | 7.74 |
| HP313300014 | 8.50 | 6.41 | 7.80 | 9.26 | 7.63 | 8.50 | 6.41 | 7.80 | 9.26 | 7.63 |
| HP313300015 | 9.30 | 7.38 | 4.67 | 9.07 | 6.89 | 9.30 | 7.38 | 4.67 | 9.07 | 6.89 |
| HP313300016 | 8.30 | 6.60 | 10.50 | 5.70 | 5.80 | 8.30 | 6.60 | 10.50 | 5.70 | 5.80 |
| HP313300017 | 8.40 | 6.06 | 10.14 | 5.81 | 5.18 | 8.40 | 6.06 | 10.14 | 5.81 | 5.18 |

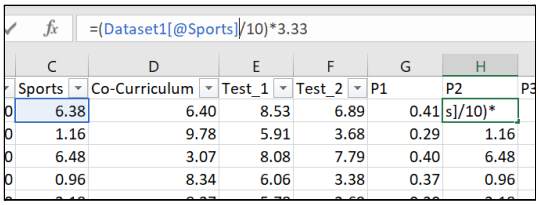
9. Label the Column G to K as P1, P2, P3, P4 and P5 respectively. The worksheet should now look like the figure below.

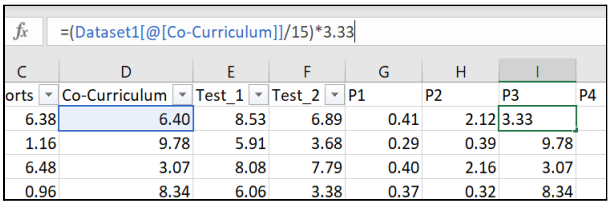
| A | B | C | D | E | F | G | H | I | J | K |
|---|---|---|---|---|---|---|---|---|---|---|
| Id_No | Academic | Sports | Co-Curriculum | Test_1 | Test_2 | P1 | P2 | P3 | P4 | P5 |
| HP313300000 | 7.60 | 6.38 | 6.40 | 8.53 | 6.89 | 0.41 | 2.12 | 1.42 | 2.84 | 2.29 |
| HP313300001 | 5.30 | 1.16 | 9.78 | 5.91 | 3.68 | 0.29 | 0.39 | 2.17 | 1.97 | 1.23 |
| HP313300002 | 7.40 | 6.48 | 3.07 | 8.08 | 7.79 | 0.40 | 2.16 | 0.68 | 2.69 | 2.59 |
| HP313300003 | 6.70 | 0.96 | 8.34 | 6.06 | 3.38 | 0.37 | 0.32 | 1.85 | 2.02 | 1.13 |
| HP313300004 | 5.50 | 2.18 | 8.27 | 5.78 | 2.69 | 0.30 | 0.73 | 1.84 | 1.92 | 0.90 |
| HP313300005 | 7.50 | 6.48 | 9.97 | 6.38 | 5.29 | 0.41 | 2.16 | 2.21 | 2.12 | 1.76 |
| HP313300006 | 7.80 | 6.90 | 10.50 | 6.30 | 5.40 | 0.43 | 2.30 | 2.33 | 2.10 | 1.80 |
| HP313300007 | 9.30 | 0.78 | 6.40 | 5.83 | 4.09 | 0.51 | 0.26 | 1.42 | 1.94 | 1.36 |
| HP313300008 | 7.10 | 6.41 | 3.06 | 8.41 | 7.63 | 0.39 | 2.13 | 0.68 | 2.80 | 2.54 |
| HP313300009 | 5.40 | 5.86 | 1.54 | 8.21 | 7.48 | 0.29 | 1.95 | 0.34 | 2.73 | 2.49 |
| HP313300010 | 6.70 | 7.16 | 11.34 | 6.76 | 4.68 | 0.37 | 2.38 | 2.52 | 2.25 | 1.56 |
| HP313300011 | 8.40 | 6.56 | 8.64 | 7.66 | 4.38 | 0.46 | 2.18 | 1.92 | 2.55 | 1.46 |
| HP313300012 | 6.40 | 5.06 | 5.30 | 8.91 | 7.28 | 0.35 | 1.68 | 1.18 | 2.97 | 2.42 |
| HP313300013 | 8.50 | 6.93 | 6.20 | 9.58 | 7.74 | 0.46 | 2.31 | 1.38 | 3.19 | 2.58 |
| HP313300014 | 8.50 | 6.41 | 7.80 | 9.26 | 7.63 | 0.46 | 2.13 | 1.73 | 3.08 | 2.54 |
| HP313300015 | 9.30 | 7.38 | 4.67 | 9.07 | 6.89 | 0.51 | 2.46 | 1.04 | 3.02 | 2.29 |
| HP313300016 | 8.30 | 6.60 | 10.50 | 5.70 | 5.80 | 0.45 | 2.20 | 2.33 | 1.90 | 1.93 |
| HP313300017 | 8.40 | 6.06 | 10.14 | 5.81 | 5.18 | 0.46 | 2.02 | 2.25 | 1.93 | 1.72 |

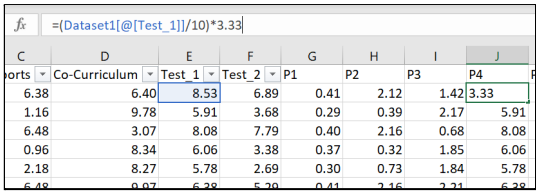
10. To convert the data in P1 so that the maximum value is 3.33, in the second cell under column P1, enter the function =(Dataset1[@Academic]/61)*3.33, where 61 refers to the total mark for Academic and the referenced cell is the second cell under column Academic, which is the original value. Then, place the cursor on the bottom right corner of the second cell in column G, then double click on it so that the same function will be applied on the entire column.

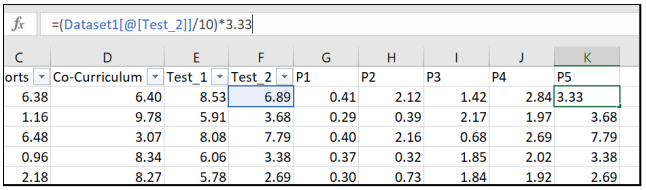



11. Repeat step 10 for column P2, P3, P4 and P5 with functions as in figures below. The denominator of the function should be the full mark for each category, which is 10, 15, 10 and 10 respectively.



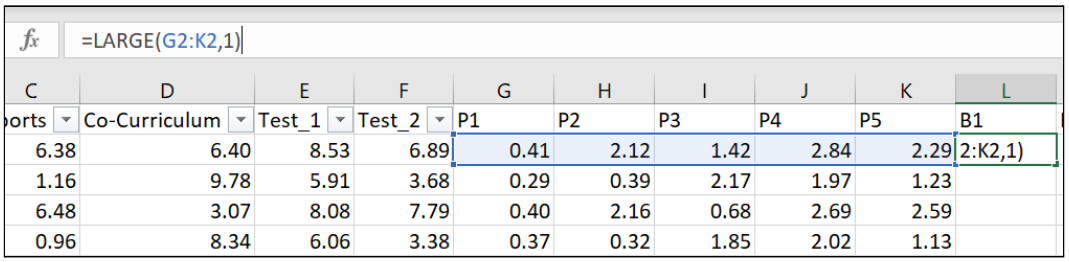


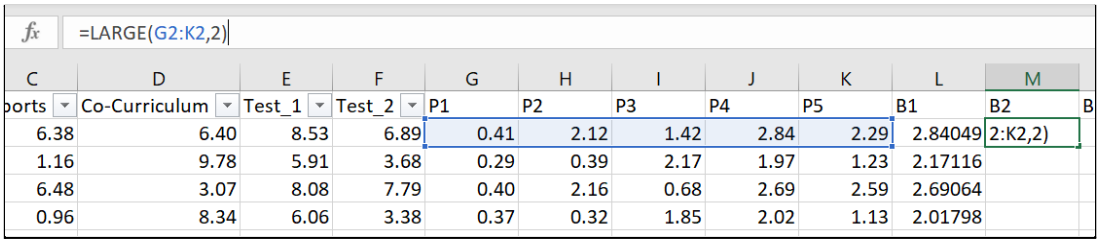

12. The data table should now look like this:

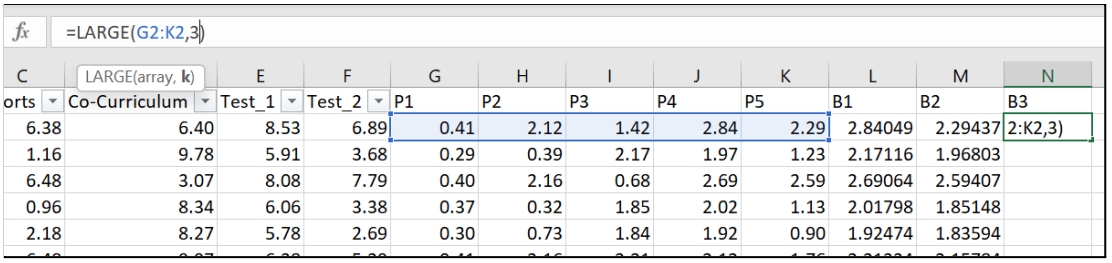
| Id_No | Academic | Sports | Co-Curriculum | Test_1 | Test_2 | P1 | P2 | P3 | P4 | P5 |
|---|---|---|---|---|---|---|---|---|---|---|
| HP313300000 | 7.60 | 6.38 | 6.40 | 8.53 | 6.89 | 0.41 | 2.12 | 1.42 | 2.84 | 2.29 |
| HP313300001 | 5.30 | 1.16 | 9.78 | 5.91 | 3.68 | 0.29 | 0.39 | 2.17 | 1.97 | 1.23 |
| HP313300002 | 7.40 | 6.48 | 3.07 | 8.08 | 7.79 | 0.40 | 2.16 | 0.68 | 2.69 | 2.59 |
| HP313300003 | 6.70 | 0.96 | 8.34 | 6.06 | 3.38 | 0.37 | 0.32 | 1.85 | 2.02 | 1.13 |
| HP313300004 | 5.50 | 2.18 | 8.27 | 5.78 | 2.69 | 0.30 | 0.73 | 1.84 | 1.92 | 0.90 |
| HP313300005 | 7.50 | 6.48 | 9.97 | 6.38 | 5.29 | 0.41 | 2.16 | 2.21 | 2.12 | 1.76 |
| HP313300006 | 7.80 | 6.90 | 10.50 | 6.30 | 5.40 | 0.43 | 2.30 | 2.33 | 2.10 | 1.80 |
| HP313300007 | 9.30 | 0.78 | 6.40 | 5.83 | 4.09 | 0.51 | 0.26 | 1.42 | 1.94 | 1.36 |
| HP313300008 | 7.10 | 6.41 | 3.06 | 8.41 | 7.63 | 0.39 | 2.13 | 0.68 | 2.80 | 2.54 |
| HP313300009 | 5.40 | 5.86 | 1.54 | 8.21 | 7.48 | 0.29 | 1.95 | 0.34 | 2.73 | 2.49 |
| HP313300010 | 6.70 | 7.16 | 11.34 | 6.76 | 4.68 | 0.37 | 2.38 | 2.52 | 2.25 | 1.56 |
| HP313300011 | 8.40 | 6.56 | 8.64 | 7.66 | 4.38 | 0.46 | 2.18 | 1.92 | 2.55 | 1.46 |
| HP313300012 | 6.40 | 5.06 | 5.30 | 8.91 | 7.28 | 0.35 | 1.68 | 1.18 | 2.97 | 2.42 |
| HP313300013 | 8.50 | 6.93 | 6.20 | 9.58 | 7.74 | 0.46 | 2.31 | 1.38 | 3.19 | 2.58 |
| HP313300014 | 8.50 | 6.41 | 7.80 | 9.26 | 7.63 | 0.46 | 2.13 | 1.73 | 3.08 | 2.54 |
| HP313300015 | 9.30 | 7.38 | 4.67 | 9.07 | 6.89 | 0.51 | 2.46 | 1.04 | 3.02 | 2.29 |
| HP313300016 | 8.30 | 6.60 | 10.50 | 5.70 | 5.80 | 0.45 | 2.20 | 2.33 | 1.90 | 1.93 |
| HP313300017 | 8.40 | 6.06 | 10.14 | 5.81 | 5.18 | 0.46 | 2.02 | 2.25 | 1.93 | 1.72 |

13. Next, in column L, label it as B1. This column will get the first highest value from column P1 until P5 for each row. To do this, use the formula =LARGE(G2:K2,1), where G2:K2 is the range to find the highest value from, and 1 refers to the first highest value. Then, double click on the bottom right corner of the cell to apply the same function in all rows in that column.




14. Repeat step 13 for column M and N. Label them as B2 and B3 respectively. Column B2 is to find the second highest value from the range of P1 until P5, while B3 is to find the third highest value from the same range. The formula to be used are as follows:

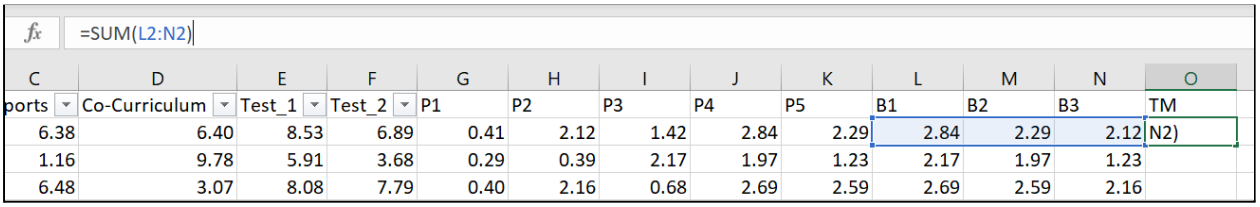




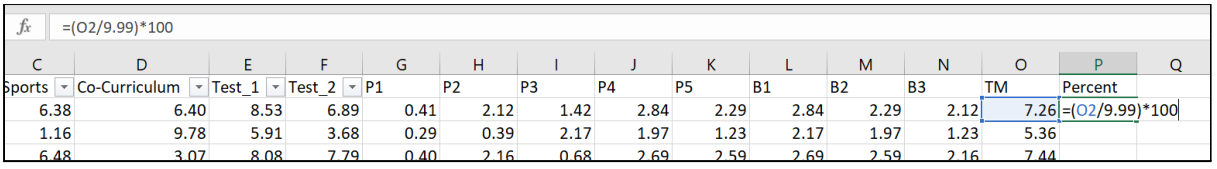

15. The worksheet now should look like this:

| Id_No | Academic | Sports | Co-Curriculum | Test_1 | Test_2 | P1 | P2 | P3 | P4 | P5 | B1 | B2 | B3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HP313300000 | 7.60 | 6.38 | 6.40 | 8.53 | 6.89 | 0.41 | 2.12 | 1.42 | 2.84 | 2.29 | 2.84 | 2.29 | 2.12 |
| HP313300001 | 5.30 | 1.16 | 9.78 | 5.91 | 3.68 | 0.29 | 0.39 | 2.17 | 1.97 | 1.23 | 2.17 | 1.97 | 1.23 |
| HP313300002 | 7.40 | 6.48 | 3.07 | 8.08 | 7.79 | 0.40 | 2.16 | 0.68 | 2.69 | 2.59 | 2.69 | 2.59 | 2.16 |
| HP313300003 | 6.70 | 0.96 | 8.34 | 6.06 | 3.38 | 0.37 | 0.32 | 1.85 | 2.02 | 1.13 | 2.02 | 1.85 | 1.13 |
| HP313300004 | 5.50 | 2.18 | 8.27 | 5.78 | 2.69 | 0.30 | 0.73 | 1.84 | 1.92 | 0.90 | 1.92 | 1.84 | 0.90 |
| HP313300005 | 7.50 | 6.48 | 9.97 | 6.38 | 5.29 | 0.41 | 2.16 | 2.21 | 2.12 | 1.76 | 2.21 | 2.16 | 2.12 |
| HP313300006 | 7.80 | 6.90 | 10.50 | 6.30 | 5.40 | 0.43 | 2.30 | 2.33 | 2.10 | 1.80 | 2.33 | 2.30 | 2.10 |
| HP313300007 | 9.30 | 0.78 | 6.40 | 5.83 | 4.09 | 0.51 | 0.26 | 1.42 | 1.94 | 1.36 | 1.94 | 1.42 | 1.36 |
| HP313300008 | 7.10 | 6.41 | 3.06 | 8.41 | 7.63 | 0.39 | 2.13 | 0.68 | 2.80 | 2.54 | 2.80 | 2.54 | 2.13 |
| HP313300009 | 5.40 | 5.86 | 1.54 | 8.21 | 7.48 | 0.29 | 1.95 | 0.34 | 2.73 | 2.49 | 2.73 | 2.49 | 1.95 |
| HP313300010 | 6.70 | 7.16 | 11.34 | 6.76 | 4.68 | 0.37 | 2.38 | 2.52 | 2.25 | 1.56 | 2.52 | 2.38 | 2.25 |
| HP313300011 | 8.40 | 6.56 | 8.64 | 7.66 | 4.38 | 0.46 | 2.18 | 1.92 | 2.55 | 1.46 | 2.55 | 2.18 | 1.92 |
| HP313300012 | 6.40 | 5.06 | 5.30 | 8.91 | 7.28 | 0.35 | 1.68 | 1.18 | 2.97 | 2.42 | 2.97 | 2.42 | 1.68 |
| HP313300013 | 8.50 | 6.93 | 6.20 | 9.58 | 7.74 | 0.46 | 2.31 | 1.38 | 3.19 | 2.58 | 3.19 | 2.58 | 2.31 |
| HP313300014 | 8.50 | 6.41 | 7.80 | 9.26 | 7.63 | 0.46 | 2.13 | 1.73 | 3.08 | 2.54 | 3.08 | 2.54 | 2.13 |
| HP313300015 | 9.30 | 7.38 | 4.67 | 9.07 | 6.89 | 0.51 | 2.46 | 1.04 | 3.02 | 2.29 | 3.02 | 2.46 | 2.29 |
| HP313300016 | 8.30 | 6.60 | 10.50 | 5.70 | 5.80 | 0.45 | 2.20 | 2.33 | 1.90 | 1.93 | 2.33 | 2.20 | 1.93 |
| HP313300017 | 8.40 | 6.06 | 10.14 | 5.81 | 5.18 | 0.46 | 2.02 | 2.25 | 1.93 | 1.72 | 2.25 | 2.02 | 1.93 |

16. Next, label column O as TM. This column will sum the total mark of the three highest marks obtained by the student, which refers to the column B1, B2 and B3. To do this, click on the second cell of column TM then enter the function =SUM(L2:N2) where L2:N2 is the range of data values in column B1 until B3. Apply the same formula to the entire column by double-clicking on the bottom right corner of the cell.




17. After that, to obtain the percentage of total mark for each student, label the column P as Percent, then enter the formula =(O2/9.99)*100 in the second cell of the column, where O2 is the referenced cell obtained from the total mark in column TM. As always, apply the function for the entire data in column Percent.

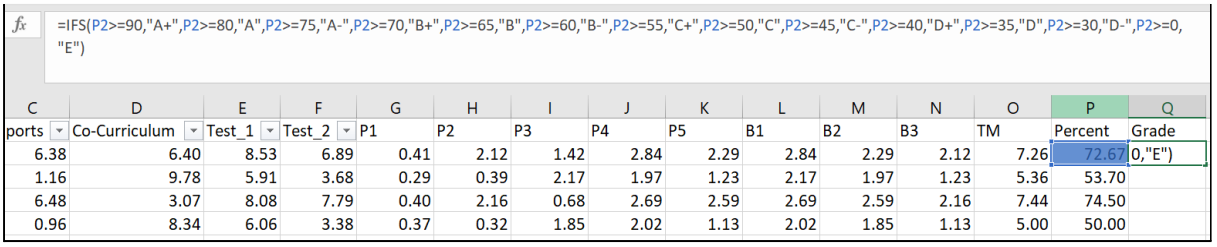


18. The data now looks like the figure below

| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Id_No | Academic | Sports | Co-Curriculum | Test_1 | Test_2 | P1 | P2 | P3 | P4 | P5 | B1 | B2 | B3 | TM | Percent |
| HP313300000 | 7.60 | 6.38 | 6.40 | 8.53 | 6.89 | 0.41 | 2.12 | 1.42 | 2.84 | 2.29 | 2.84 | 2.29 | 2.12 | 7.26 | 72.67 |
| HP313300001 | 5.30 | 1.16 | 9.78 | 5.91 | 3.68 | 0.29 | 0.39 | 2.17 | 1.97 | 1.23 | 2.17 | 1.97 | 1.23 | 5.36 | 53.70 |
| HP313300002 | 7.40 | 6.48 | 3.07 | 8.08 | 7.79 | 0.40 | 2.16 | 0.68 | 2.69 | 2.59 | 2.69 | 2.59 | 2.16 | 7.44 | 74.50 |
| HP313300003 | 6.70 | 0.96 | 8.34 | 6.06 | 3.38 | 0.37 | 0.32 | 1.85 | 2.02 | 1.13 | 2.02 | 1.85 | 1.13 | 5.00 | 50.00 |
| HP313300004 | 5.50 | 2.18 | 8.27 | 5.78 | 2.69 | 0.30 | 0.73 | 1.84 | 1.92 | 0.90 | 1.92 | 1.84 | 0.90 | 4.66 | 46.61 |
| HP313300005 | 7.50 | 6.48 | 9.97 | 6.38 | 5.29 | 0.41 | 2.16 | 2.21 | 2.12 | 1.76 | 2.21 | 2.16 | 2.12 | 6.50 | 65.02 |
| HP313300006 | 7.80 | 6.90 | 10.50 | 6.30 | 5.40 | 0.43 | 2.30 | 2.33 | 2.10 | 1.80 | 2.33 | 2.30 | 2.10 | 6.73 | 67.33 |
| HP313300007 | 9.30 | 0.78 | 6.40 | 5.83 | 4.09 | 0.51 | 0.26 | 1.42 | 1.94 | 1.36 | 1.94 | 1.42 | 1.36 | 4.72 | 47.29 |
| HP313300008 | 7.10 | 6.41 | 3.06 | 8.41 | 7.63 | 0.39 | 2.13 | 0.68 | 2.80 | 2.54 | 2.80 | 2.54 | 2.13 | 7.48 | 74.83 |
| HP313300009 | 5.40 | 5.86 | 1.54 | 8.21 | 7.48 | 0.29 | 1.95 | 0.34 | 2.73 | 2.49 | 2.73 | 2.49 | 1.95 | 7.18 | 71.83 |
| HP313300010 | 6.70 | 7.16 | 11.34 | 6.76 | 4.68 | 0.37 | 2.38 | 2.52 | 2.25 | 1.56 | 2.52 | 2.38 | 2.25 | 7.15 | 71.60 |
| HP313300011 | 8.40 | 6.56 | 8.64 | 7.66 | 4.38 | 0.46 | 2.18 | 1.92 | 2.55 | 1.46 | 2.55 | 2.18 | 1.92 | 6.65 | 66.60 |
| HP313300012 | 6.40 | 5.06 | 5.30 | 8.91 | 7.28 | 0.35 | 1.68 | 1.18 | 2.97 | 2.42 | 2.97 | 2.42 | 1.68 | 7.08 | 70.83 |
| HP313300013 | 8.50 | 6.93 | 6.20 | 9.58 | 7.74 | 0.46 | 2.31 | 1.38 | 3.19 | 2.58 | 3.19 | 2.58 | 2.31 | 8.08 | 80.83 |
| HP313300014 | 8.50 | 6.41 | 7.80 | 9.26 | 7.63 | 0.46 | 2.13 | 1.73 | 3.08 | 2.54 | 3.08 | 2.54 | 2.13 | 7.76 | 77.67 |
| HP313300015 | 9.30 | 7.38 | 4.67 | 9.07 | 6.89 | 0.51 | 2.46 | 1.04 | 3.02 | 2.29 | 3.02 | 2.46 | 2.29 | 7.77 | 77.80 |
| HP313300016 | 8.30 | 6.60 | 10.50 | 5.70 | 5.80 | 0.45 | 2.20 | 2.33 | 1.90 | 1.93 | 2.33 | 2.20 | 1.93 | 6.46 | 64.67 |

19. To assign a grade for each student, use the IFS statement and enter the grade for each condition. The full function is

=IFS(P2>=90,"A+",P2>=80,"A",P2>=75,"A-",P2>=70,"B+",P2>=65,"B",P2>=60,"B-",P2>=55,"C+",P2>=50,"C",P2>=45,"C-",P2>=40,"D+",P2>=35,"D",P2>=30,"D-",P2>=0,"E")

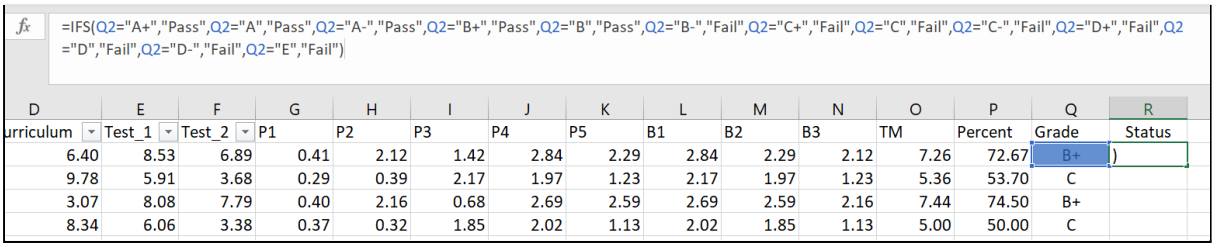



| C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ports | Co-Curriculum | Test_1 | Test_2 | P1 | P2 | P3 | P4 | P5 | B1 | B2 | B3 | TM | Percent | Grade |
| 6.38 | 6.40 | 8.53 | 6.89 | 0.41 | 2.12 | 1.42 | 2.84 | 2.29 | 2.84 | 2.29 | 2.12 | 7.26 | 72.67 | 0,"E") |
| 1.16 | 9.78 | 5.91 | 3.68 | 0.29 | 0.39 | 2.17 | 1.97 | 1.23 | 2.17 | 1.97 | 1.23 | 5.36 | 53.70 | |
| 6.48 | 3.07 | 8.08 | 7.79 | 0.40 | 2.16 | 0.68 | 2.69 | 2.59 | 2.69 | 2.59 | 2.16 | 7.44 | 74.50 | |
| 0.96 | 8.34 | 6.06 | 3.38 | 0.37 | 0.32 | 1.85 | 2.02 | 1.13 | 2.02 | 1.85 | 1.13 | 5.00 | 50.00 | |

20. Apply the same function for the entire column, then all students should now have a grade, as belows:

| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Id_No | Academic | Sports | Co-Curriculum | Test_1 | Test_2 | P1 | P2 | P3 | P4 | P5 | B1 | B2 | B3 | TM | Percent | Grade |
| HP313300000 | 7.60 | 6.38 | 6.40 | 8.53 | 6.89 | 0.41 | 2.12 | 1.42 | 2.84 | 2.29 | 2.84 | 2.29 | 2.12 | 7.26 | 72.67 | B+ |
| HP313300001 | 5.30 | 1.16 | 9.78 | 5.91 | 3.68 | 0.29 | 0.39 | 2.17 | 1.97 | 1.23 | 2.17 | 1.97 | 1.23 | 5.36 | 53.70 | C |
| HP313300002 | 7.40 | 6.48 | 3.07 | 8.08 | 7.79 | 0.40 | 2.16 | 0.68 | 2.69 | 2.59 | 2.69 | 2.59 | 2.16 | 7.44 | 74.50 | B+ |
| HP313300003 | 6.70 | 0.96 | 8.34 | 6.06 | 3.38 | 0.37 | 0.32 | 1.85 | 2.02 | 1.13 | 2.02 | 1.85 | 1.13 | 5.00 | 50.00 | C |
| HP313300004 | 5.50 | 2.18 | 8.27 | 5.78 | 2.69 | 0.30 | 0.73 | 1.84 | 1.92 | 0.90 | 1.92 | 1.84 | 0.90 | 4.66 | 46.61 | C- |
| HP313300005 | 7.50 | 6.48 | 9.97 | 6.38 | 5.29 | 0.41 | 2.16 | 2.21 | 2.12 | 1.76 | 2.21 | 2.16 | 2.12 | 6.50 | 65.02 | B |
| HP313300006 | 7.80 | 6.90 | 10.50 | 6.30 | 5.40 | 0.43 | 2.30 | 2.33 | 2.10 | 1.80 | 2.33 | 2.30 | 2.10 | 6.73 | 67.33 | B |
| HP313300007 | 9.30 | 0.78 | 6.40 | 5.83 | 4.09 | 0.51 | 0.26 | 1.42 | 1.94 | 1.36 | 1.94 | 1.42 | 1.36 | 4.72 | 47.29 | C- |
| HP313300008 | 7.10 | 6.41 | 3.06 | 8.41 | 7.63 | 0.39 | 2.13 | 0.68 | 2.80 | 2.54 | 2.80 | 2.54 | 2.13 | 7.48 | 74.83 | B+ |
| HP313300009 | 5.40 | 5.86 | 1.54 | 8.21 | 7.48 | 0.29 | 1.95 | 0.34 | 2.73 | 2.49 | 2.73 | 2.49 | 1.95 | 7.18 | 71.83 | B+ |
| HP313300010 | 6.70 | 7.16 | 11.34 | 6.76 | 4.68 | 0.37 | 2.38 | 2.52 | 2.25 | 1.56 | 2.52 | 2.38 | 2.25 | 7.15 | 71.60 | B+ |
| HP313300011 | 8.40 | 6.56 | 8.64 | 7.66 | 4.38 | 0.46 | 2.18 | 1.92 | 2.55 | 1.46 | 2.55 | 2.18 | 1.92 | 6.65 | 66.60 | B |
| HP313300012 | 6.40 | 5.06 | 5.30 | 8.91 | 7.28 | 0.35 | 1.68 | 1.18 | 2.97 | 2.42 | 2.97 | 2.42 | 1.68 | 7.08 | 70.83 | B+ |
| HP313300013 | 8.50 | 6.93 | 6.20 | 9.58 | 7.74 | 0.46 | 2.31 | 1.38 | 3.19 | 2.58 | 3.19 | 2.58 | 2.31 | 8.08 | 80.83 | A |
| HP313300014 | 8.50 | 6.41 | 7.80 | 9.26 | 7.63 | 0.46 | 2.13 | 1.73 | 3.08 | 2.54 | 3.08 | 2.54 | 2.13 | 7.76 | 77.67 | A- |

21. Next, to get the status based on the grade, use another IFS statement as below:
=IFS(Q2="A+","Pass",Q2="A","Pass",Q2="A-","Pass",Q2="B+","Pass",Q2="B","Pass",Q2="B-","Fail",Q2="C+","Fail",Q2="C","Fail",Q2="C-","Fail",Q2="D+","Fail",Q2="D","Fail",Q2="D-","Fail",Q2="E","Fail")



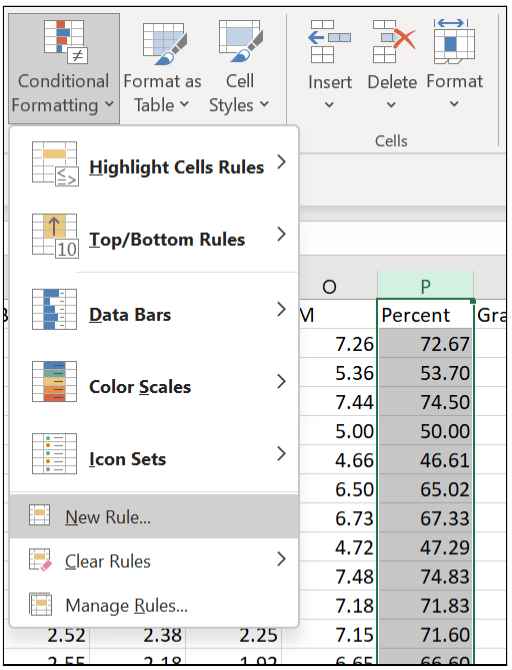
=IFS(Q2="A+","Pass",Q2="A","Pass",Q2="A-","Pass",Q2="B+","Pass",Q2="B","Pass",Q2="B-","Fail",Q2="C+","Fail",Q2="C","Fail",Q2="C-","Fail",Q2="D+","Fail",Q2="D","Fail",Q2="D-","Fail",Q2="E","Fail")

| D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| urriculum | Test_1 | Test_2 | P1 | P2 | P3 | P4 | P5 | B1 | B2 | B3 | TM | Percent | Grade | Status |
| 6.40 | 8.53 | 6.89 | 0.41 | 2.12 | 1.42 | 2.84 | 2.29 | 2.84 | 2.29 | 2.12 | 7.26 | 72.67 | B+ | ) |
| 9.78 | 5.91 | 3.68 | 0.29 | 0.39 | 2.17 | 1.97 | 1.23 | 2.17 | 1.97 | 1.23 | 5.36 | 53.70 | C | |
| 3.07 | 8.08 | 7.79 | 0.40 | 2.16 | 0.68 | 2.69 | 2.59 | 2.69 | 2.59 | 2.16 | 7.44 | 74.50 | B+ | |
| 8.34 | 6.06 | 3.38 | 0.37 | 0.32 | 1.85 | 2.02 | 1.13 | 2.02 | 1.85 | 1.13 | 5.00 | 50.00 | C | |

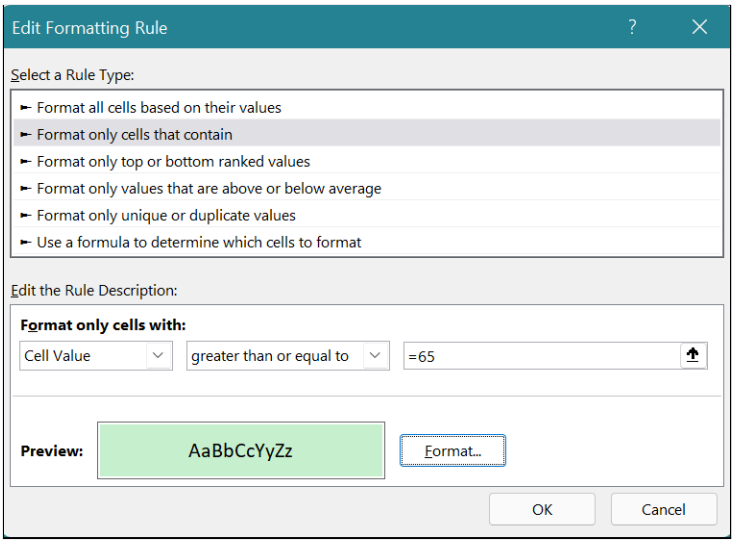
22. Apply the function for the whole column, and the worksheet now looks like this:

| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Id_No | Academic | Sports | Co-Curriculum | Test_1 | Test_2 | P1 | P2 | P3 | P4 | P5 | B1 | B2 | B3 | TM | Percent | Grade | Status |
| HP313300000 | 7.60 | 6.38 | 6.40 | 8.53 | 6.89 | 0.41 | 2.12 | 1.42 | 2.84 | 2.29 | 2.84 | 2.29 | 2.12 | 7.26 | 72.67 | B+ | Pass |
| HP313300001 | 5.30 | 1.16 | 9.78 | 5.91 | 3.68 | 0.29 | 0.39 | 2.17 | 1.97 | 1.23 | 2.17 | 1.97 | 1.23 | 5.36 | 53.70 | C | Fail |
| HP313300002 | 7.40 | 6.48 | 3.07 | 8.08 | 7.79 | 0.40 | 2.16 | 0.68 | 2.69 | 2.59 | 2.69 | 2.59 | 2.16 | 7.44 | 74.50 | B+ | Pass |
| HP313300003 | 6.70 | 0.96 | 8.34 | 6.06 | 3.38 | 0.37 | 0.32 | 1.85 | 2.02 | 1.13 | 2.02 | 1.85 | 1.13 | 5.00 | 50.00 | C | Fail |
| HP313300004 | 5.50 | 2.18 | 8.27 | 5.78 | 2.69 | 0.30 | 0.73 | 1.84 | 1.92 | 0.90 | 1.92 | 1.84 | 0.90 | 4.66 | 46.61 | C- | Fail |
| HP313300005 | 7.50 | 6.48 | 9.97 | 6.38 | 5.29 | 0.41 | 2.16 | 2.21 | 2.12 | 1.76 | 2.21 | 2.16 | 2.12 | 6.50 | 65.02 | B | Pass |
| HP313300006 | 7.80 | 6.90 | 10.50 | 6.30 | 5.40 | 0.43 | 2.30 | 2.33 | 2.10 | 1.80 | 2.33 | 2.30 | 2.10 | 6.73 | 67.33 | B | Pass |
| HP313300007 | 9.30 | 0.78 | 6.40 | 5.83 | 4.09 | 0.51 | 0.26 | 1.42 | 1.94 | 1.36 | 1.94 | 1.42 | 1.36 | 4.72 | 47.29 | C- | Fail |
| HP313300008 | 7.10 | 6.41 | 3.06 | 8.41 | 7.63 | 0.39 | 2.13 | 0.68 | 2.80 | 2.54 | 2.80 | 2.54 | 2.13 | 7.48 | 74.83 | B+ | Pass |
| HP313300009 | 5.40 | 5.86 | 1.54 | 8.21 | 7.48 | 0.29 | 1.95 | 0.34 | 2.73 | 2.49 | 2.73 | 2.49 | 1.95 | 7.18 | 71.83 | B+ | Pass |
| HP313300010 | 6.70 | 7.16 | 11.34 | 6.76 | 4.68 | 0.37 | 2.38 | 2.52 | 2.25 | 1.56 | 2.52 | 2.38 | 2.25 | 7.15 | 71.60 | B+ | Pass |
| HP313300011 | 8.40 | 6.56 | 8.64 | 7.66 | 4.38 | 0.46 | 2.18 | 1.92 | 2.55 | 1.46 | 2.55 | 2.18 | 1.92 | 6.65 | 66.60 | B | Pass |
| HP313300012 | 6.40 | 5.06 | 5.30 | 8.91 | 7.28 | 0.35 | 1.68 | 1.18 | 2.97 | 2.42 | 2.97 | 2.42 | 1.68 | 7.08 | 70.83 | B+ | Pass |
| HP313300013 | 8.50 | 6.93 | 6.20 | 9.58 | 7.74 | 0.46 | 2.31 | 1.38 | 3.19 | 2.58 | 3.19 | 2.58 | 2.31 | 8.08 | 80.83 | A | Pass |
| HP313300014 | 8.50 | 6.41 | 7.80 | 9.26 | 7.63 | 0.46 | 2.13 | 1.73 | 3.08 | 2.54 | 3.08 | 2.54 | 2.13 | 7.76 | 77.67 | A- | Pass |
| HP313300015 | 9.30 | 7.38 | 4.67 | 9.07 | 6.89 | 0.51 | 2.46 | 1.04 | 3.02 | 2.29 | 3.02 | 2.46 | 2.29 | 7.77 | 77.80 | A- | Pass |
| HP313300016 | 8.30 | 6.60 | 10.50 | 5.70 | 5.80 | 0.45 | 2.20 | 2.33 | 1.90 | 1.93 | 2.33 | 2.20 | 1.93 | 6.46 | 64.67 | B- | Fail |

23. In order to highlight the percentage cells that have a status of Pass, click on the Conditional Formatting menu to add a new rule.



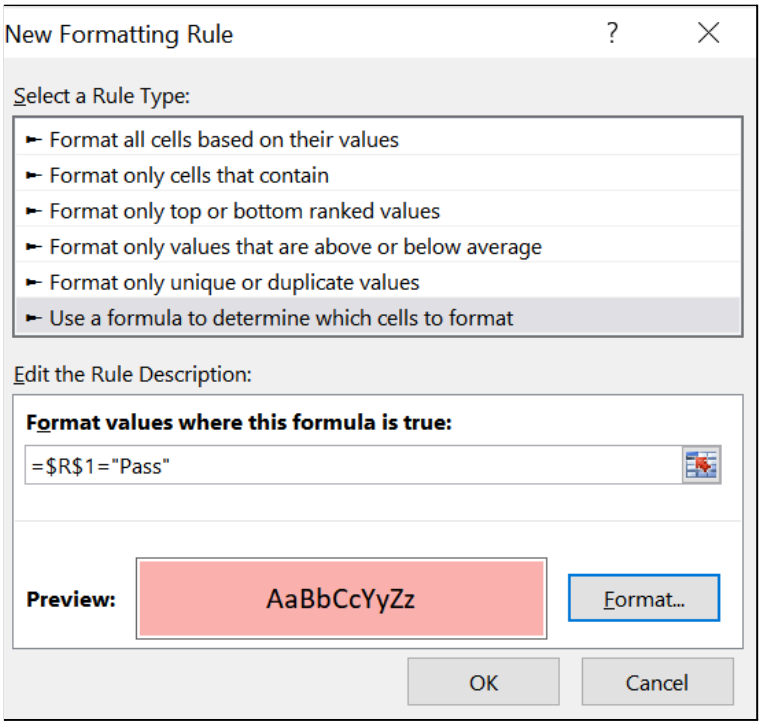
24. Because the minimum passing mark is 65, we will only format the cells in the Percent column that have a value equal to or greater than 65. The colour of the cells that matches the condition will be light green.




25. The updated Percent column now looks like this:

| L | M | N | O | P |
|---|---|---|---|---|
| B1 | B2 | B3 | TM | Percent |
| 2.84 | 2.29 | 2.12 | 7.26 | 72.67 |
| 2.17 | 1.97 | 1.23 | 5.36 | 53.70 |
| 2.69 | 2.59 | 2.16 | 7.44 | 74.50 |
| 2.02 | 1.85 | 1.13 | 5.00 | 50.00 |
| 1.92 | 1.84 | 0.90 | 4.66 | 46.61 |
| 2.21 | 2.16 | 2.12 | 6.50 | 65.02 |
| 2.33 | 2.30 | 2.10 | 6.73 | 67.33 |
| 1.94 | 1.42 | 1.36 | 4.72 | 47.29 |
| 2.80 | 2.54 | 2.13 | 7.48 | 74.83 |
| 2.73 | 2.49 | 1.95 | 7.18 | 71.83 |
| 2.52 | 2.38 | 2.25 | 7.15 | 71.60 |
| 2.55 | 2.18 | 1.92 | 6.65 | 66.60 |
| 2.97 | 2.42 | 1.68 | 7.08 | 70.83 |
| 3.19 | 2.58 | 2.31 | 8.08 | 80.83 |
| 3.08 | 2.54 | 2.13 | 7.76 | 77.67 |
| 3.02 | 2.46 | 2.29 | 7.77 | 77.80 |
| 2.33 | 2.20 | 1.93 | 6.46 | 64.67 |
| 2.25 | 2.02 | 1.93 | 6.20 | 62.10 |

26. To highlight the rows of data of students who pass, we add another rule in the conditional formatting configuration. This time, the row that has a status of Pass will be highlighted in light red.

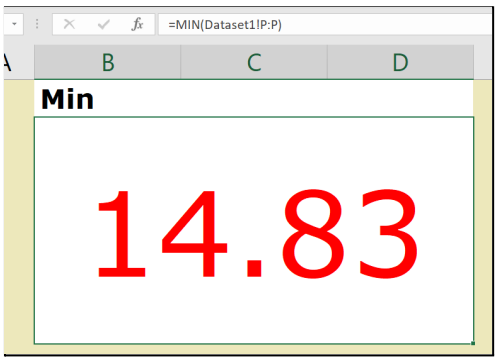



27. The worksheet now looks like the figure below. Now that the data is complete, we can then create a dashboard.

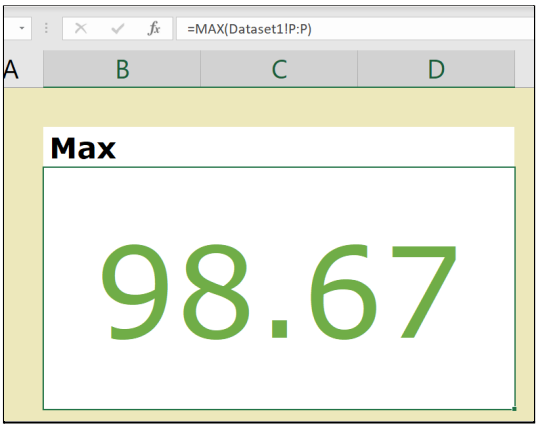
| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Id_No | Academic | Sports | Co-Curriculum | Test_1 | Test_2 | P1 | P2 | P3 | P4 | P5 | B1 | B2 | B3 | TM | Percent | Grade | Status |
| HP313300000 | 7.60 | 6.38 | 6.40 | 8.53 | 6.89 | 0.41 | 2.12 | 1.42 | 2.84 | 2.29 | 2.84 | 2.29 | 2.12 | 7.26 | 72.67 | B+ | Pass |
| HP313300001 | 5.30 | 1.16 | 9.78 | 5.91 | 3.68 | 0.29 | 0.39 | 2.17 | 1.97 | 1.23 | 2.17 | 1.97 | 1.23 | 5.36 | 53.70 | C | Fail |
| HP313300002 | 7.40 | 6.48 | 3.07 | 8.08 | 7.79 | 0.40 | 2.16 | 0.68 | 2.69 | 2.59 | 2.69 | 2.59 | 2.16 | 7.44 | 74.50 | B+ | Pass |
| HP313300003 | 6.70 | 0.96 | 8.34 | 6.06 | 3.38 | 0.37 | 0.32 | 1.85 | 2.02 | 1.13 | 2.02 | 1.85 | 1.13 | 5.00 | 50.00 | C | Fail |
| HP313300004 | 5.50 | 2.18 | 8.27 | 5.78 | 2.69 | 0.30 | 0.73 | 1.84 | 1.92 | 0.90 | 1.92 | 1.84 | 0.90 | 4.66 | 46.61 | C- | Fail |
| HP313300005 | 7.50 | 6.48 | 9.97 | 6.38 | 5.29 | 0.41 | 2.16 | 2.21 | 2.12 | 1.76 | 2.21 | 2.16 | 2.12 | 6.50 | 65.02 | B | Pass |
| HP313300006 | 7.80 | 6.90 | 10.50 | 6.30 | 5.40 | 0.43 | 2.30 | 2.33 | 2.10 | 1.80 | 2.33 | 2.30 | 2.10 | 6.73 | 67.33 | B | Pass |
| HP313300007 | 9.30 | 0.78 | 6.40 | 5.83 | 4.09 | 0.51 | 0.26 | 1.42 | 1.94 | 1.36 | 1.94 | 1.42 | 1.36 | 4.72 | 47.29 | C- | Fail |
| HP313300008 | 7.10 | 6.41 | 3.06 | 8.41 | 7.63 | 0.39 | 2.13 | 0.68 | 2.80 | 2.54 | 2.80 | 2.54 | 2.13 | 7.48 | 74.83 | B+ | Pass |
| HP313300009 | 5.40 | 5.86 | 1.54 | 8.21 | 7.48 | 0.29 | 1.95 | 0.34 | 2.73 | 2.49 | 2.73 | 2.49 | 1.95 | 7.18 | 71.83 | B+ | Pass |
| HP313300010 | 6.70 | 7.16 | 11.34 | 6.76 | 4.68 | 0.37 | 2.38 | 2.52 | 2.25 | 1.56 | 2.52 | 2.38 | 2.25 | 7.15 | 71.60 | B+ | Pass |
| HP313300011 | 8.40 | 6.56 | 8.64 | 7.66 | 4.38 | 0.46 | 2.18 | 1.92 | 2.55 | 1.46 | 2.55 | 2.18 | 1.92 | 6.65 | 66.60 | B | Pass |
| HP313300012 | 6.40 | 5.06 | 5.30 | 8.91 | 7.28 | 0.35 | 1.68 | 1.18 | 2.97 | 2.42 | 2.97 | 2.42 | 1.68 | 7.08 | 70.83 | B+ | Pass |
| HP313300013 | 8.50 | 6.93 | 6.20 | 9.58 | 7.74 | 0.46 | 2.31 | 1.38 | 3.19 | 2.58 | 3.19 | 2.58 | 2.31 | 8.08 | 80.83 | A | Pass |
| HP313300014 | 8.50 | 6.41 | 7.80 | 9.26 | 7.63 | 0.46 | 2.13 | 1.73 | 3.08 | 2.54 | 3.08 | 2.54 | 2.13 | 7.76 | 77.67 | A- | Pass |
| HP313300015 | 9.30 | 7.38 | 4.67 | 9.07 | 6.89 | 0.51 | 2.46 | 1.04 | 3.02 | 2.29 | 3.02 | 2.46 | 2.29 | 7.77 | 77.80 | A- | Pass |

## Creating a Dashboard

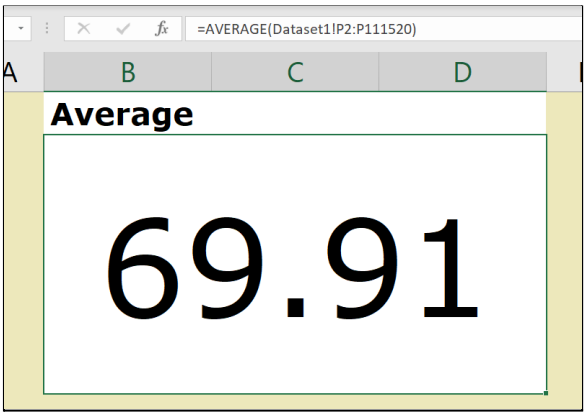
1. Firstly, to get the minimum of the overall marks, we use the formula =MIN(Dataset1!P:P) where P:P is the Percent column obtained from the previous steps. Min refers to the lowest percentage mark achieved among the students.



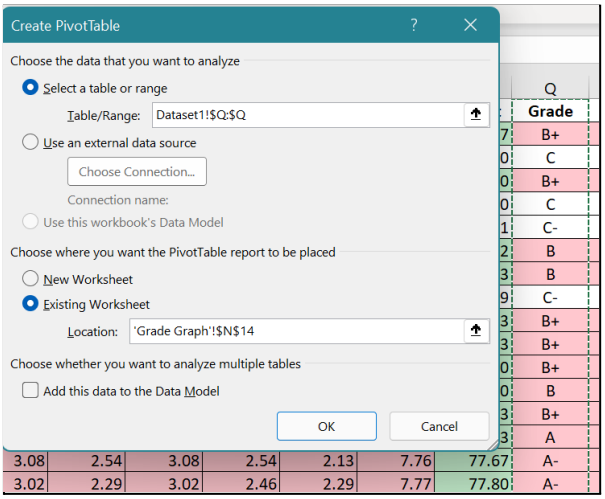

2. Next, to get the maximum value of percentage, or in other words, the highest percentage among all the students, we used the function =MAX(Dataset1!P:P)



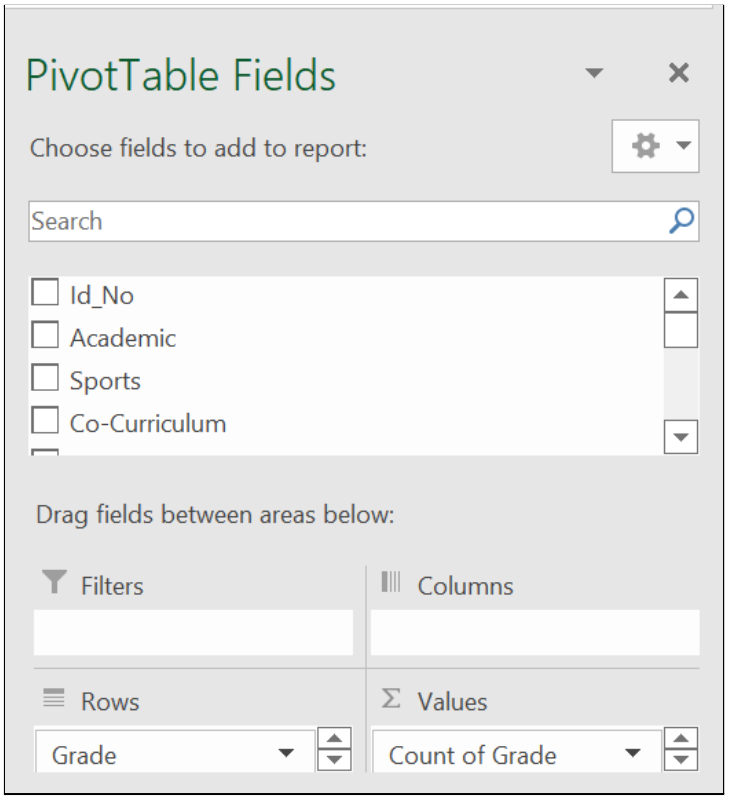

3. Then, use the function =AVERAGE(Dataset1!P2:P111520) to get the average percentage among the students



4. In order to create a bar chart for the grading result, we first need to create a pivot table. To do this, go to the Insert menu, then click on Pivot Table. Select Column Q as the range to be analysed. The table will be created in a new sheet.



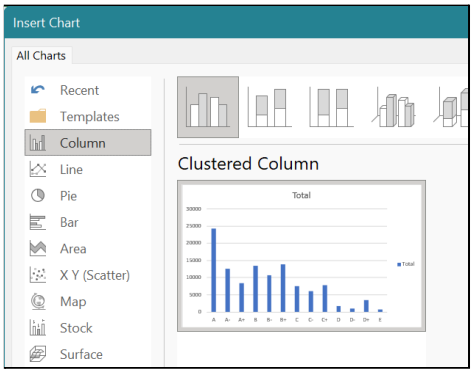

5. In the Pivot Table Fields tab, we set the Rows as Grade, and the Values as the Count of Grade. This will display the total count of students for every grade.

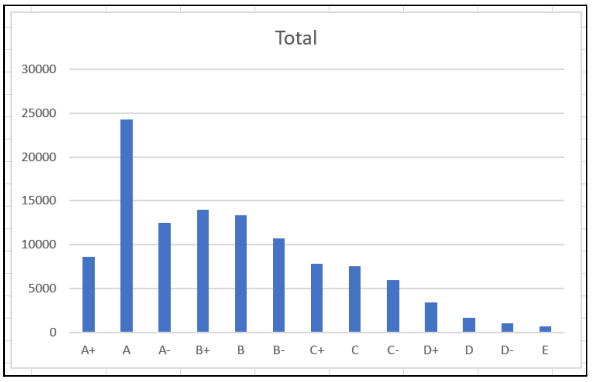


6. The Pivot Table will then be created, as follows:

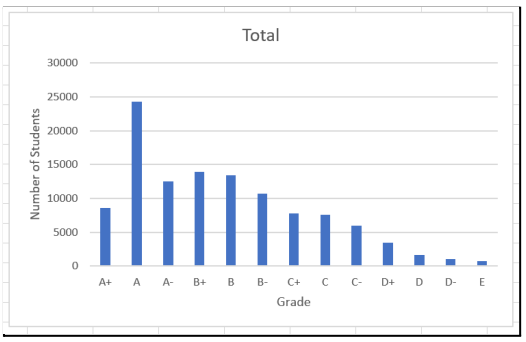
| Grade | Count of Grade |
|---|---|
| A+ | 8588 |
| A | 24264 |
| A- | 12464 |
| B+ | 13956 |
| B | 13392 |
| B- | 10677 |
| C+ | 7803 |
| C | 7566 |
| C- | 5982 |
| D+ | 3436 |
| D | 1664 |
| D- | 1019 |
| E | 708 |
| **Grand Total** | **111519** |

7. Next, highlight the data values in the Pivot Table, go to the Insert menu, then click on Pivot Chart and select Clustered Column in the Column menu to create a bar chart for the grade result data.

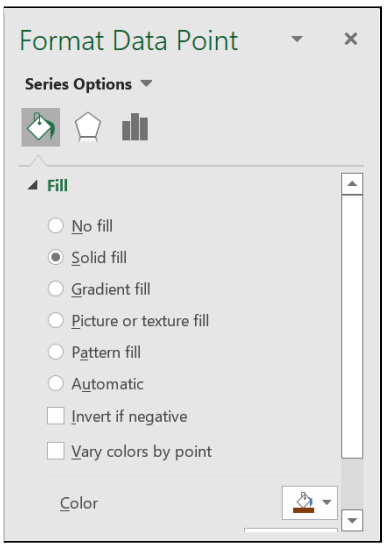


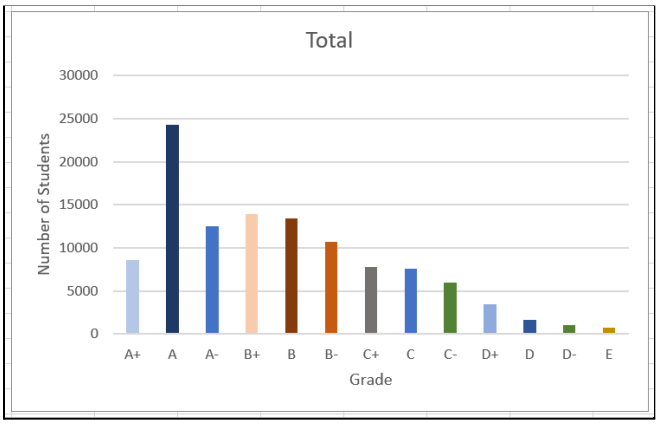




8. To change the style of the chart, double click on the chart, then add the elements that are needed. Edit the labels and titles appropriately.

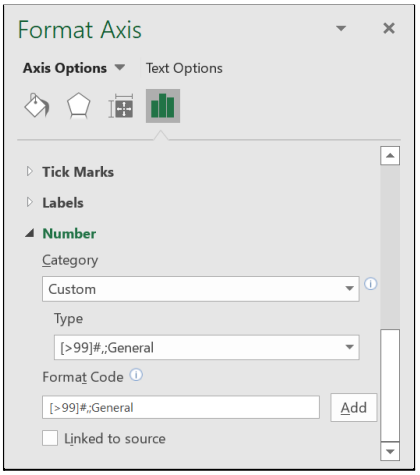


9. We can also change the colour of each bar, by double clicking on it and changing the fill colour in the Format Data Point tab.

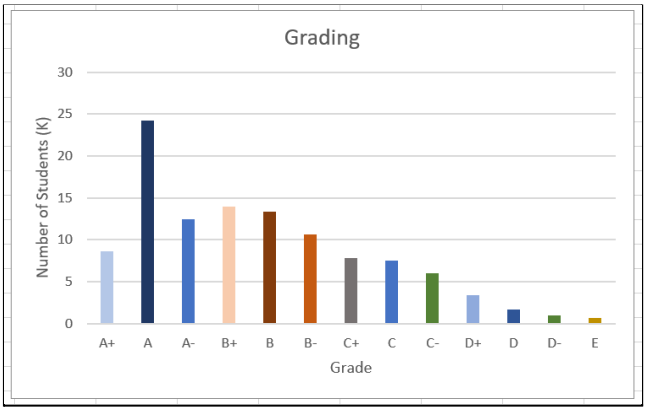


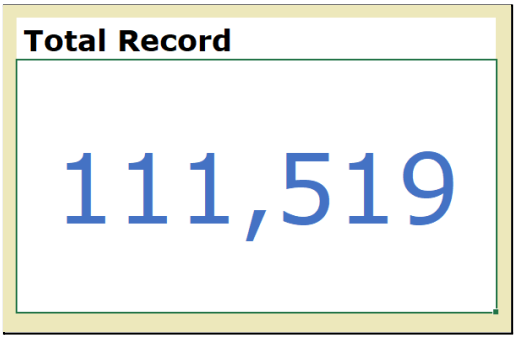

10. As the data values are too big, we format the axis so that the numbers will be in thousands (K). The format code is [>99]#,;General

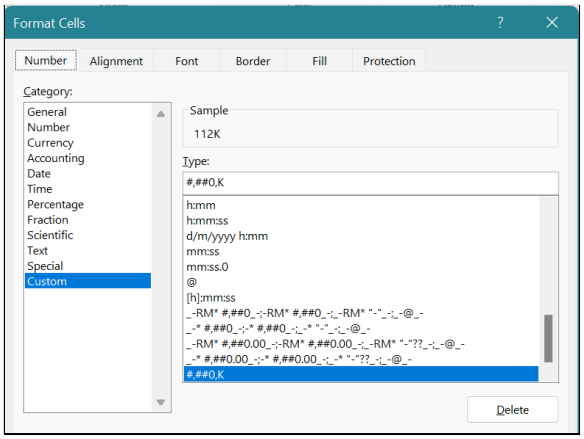



11. The updated bar chart will look like this:



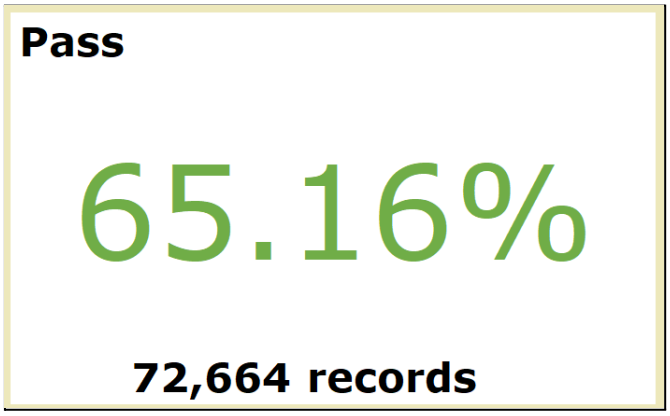
12. To get the total number of records, we use the function =COUNT(Dataset1!P:P). Then, format the cell so that it will display the number in thousands.



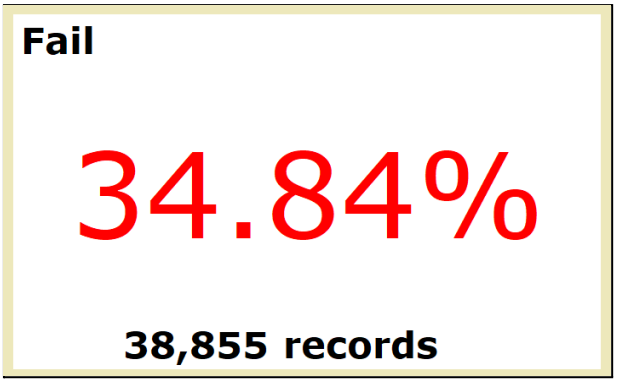





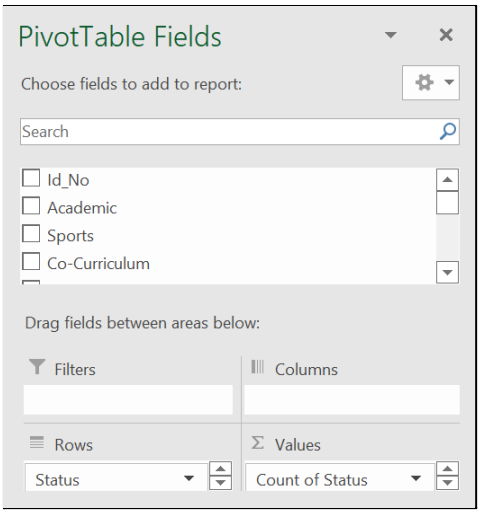
13. To get the percentage of Pass, we used the function =(COUNTIF(Dataset1!R1:R111520,"=Pass")/S3) where S3 is the cell of the total record that we obtained in step 12. Then, to calculate the total count of students who pass, we used the formula =COUNTIF(Dataset1!R1:R111520,"=Pass"), where the range is the column Status in the data table.



14. Similarly, to get the percentage of Fail students, we used the function =(COUNTIF(Dataset1!R1:R111520,"=Fail")/S3) where S3 is the total number of records, and to obtain the total number of students who failed, we used =COUNTIF(Dataset1!R1:R111520,"=Fail") to calculate the number of records of Fail in the column Status.



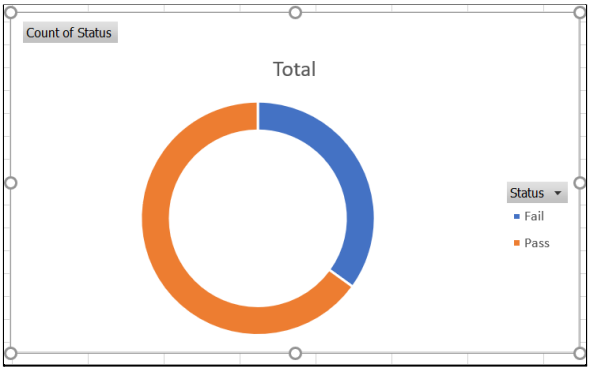

15. Next, create another Pivot Table for the status results. This time, the rows will represent the Status, and the values are the total count of students for each status.



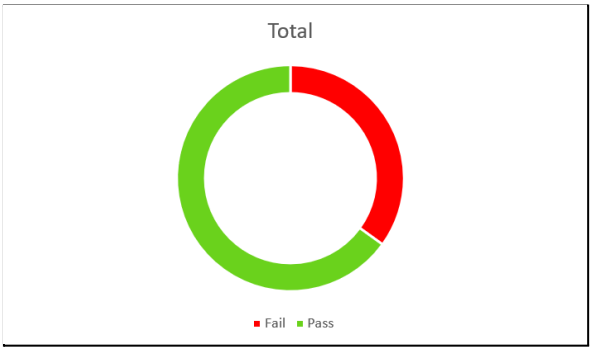

16. The pivot table is as follows:

| Status | Count of Status |
|---|---|
| Fail | 38855 |
| Pass | 72664 |
| Grand Total | 111519 |

17. Highlight the data in the pivot table, then click on Doughnut Chart to visualise the status results.




18. Stylize the chart by double click on the chart, and select the needed chart elements. We can also change the colour of each data area. Now, the chart will look like this:




19. In a new sheet, we copy all the charts and tables that we have created in the previous steps, and design the sheet to make it as a dashboard. The final look of the dashboard is as below: