CASE STUDY 1: Examination Results

1. You will work with a dataset called dataset1.txt. This dataset has five columns that contain information about *Id_No*, *Academic*, *Sports*, *Co-Curriculum*, *Test_1* and *Test_2*. Table 1 shows the full marks for the data.

Table 1

Columns	**Full Marks**
Academic	61
Sports	10
Co-Curriculum	15
Test_1	10
Test_2	10

2. This dataset must be entered into Google Sheets. Figure 1 shows an example of data that has been entered into Google Sheets.

	A	B	C	D	E	F
1	Id_No	Academic	Sports	Co-Curriculum	Test_1	Test_2
2	HP313300000	7.6	6.38	6.4	8.53	6.89
3	HP313300001	5.3	1.16	9.78	5.91	3.68
4	HP313300002	7.4	6.48	3.07	8.08	7.79
5	HP313300003	6.7	0.96	8.34	6.06	3.38
6	HP313300004	5.5	2.18	8.27	5.78	2.69
7	HP313300005	7.5	6.48	9.97	6.38	5.29
8	HP313300006	7.8	6.9	10.5	6.3	5.4
9	HP313300007	9.3	0.78	6.4	5.83	4.09
10	HP313300008	7.1	6.41	3.06	8.41	7.63
11	HP313300009	5.4	5.86	1.54	8.21	7.48
12	HP313300010	6.7	7.16	11.34	6.76	4.68
13	HP313300011	8.4	6.56	8.64	7.66	4.38

Figure 1

3. Perform the following data processing steps:
   i. Convert the *Academic*, *Sports*, *Co-Curriculum*, *Test_1* and *Test_2* data values to two decimal places.
   ii. Please provide a new value for columns B (Academic) through F (Test 2), with the new maximum value of 3.33 for each column. Please update the values in columns G (P1) to K (P5) (refer to Table 2 and Figure 2). Values are displayed to two decimal places.

Table 2

Existing column	**New column**	**Column name**
B	G	P1
C	H	P2
D	I	P3
E	J	P4
F	K	P5

F	G	H	I	J	K
Test_2	P1	P2	P3	P4	P5
6.89	B	C	D	E	F
3.68	B	C	D	E	F
7.79	B	C	D	E	F
3.38	B	C	D	E	F
2.69	B	C	D	E	F
5.29	B	C	D	E	F

Figure 2

iii. Determine the top three values based on the values in columns G to K. Fill in the highest value in column L (B1), the second highest value in column M (B2), and the third highest value in column N (B3) (please refer Figure 3).

L	M	N
B1	B2	B3
H1	H2	H3
H1	H2	H3
H1	H2	H3
H1	H2	H3
H1	H2	H3
H1	H2	H3
H1	H2	H3
H1	H2	H3

Figure 3

iv. Compute total points by combining the data from columns L to N. The total mark value is entered in column O (TM).

v. Please calculate the percentage value for the data in column O. (TM). In column P, enter a percentage value (Percent). Check that the percentage value is within two decimal places.

vi. Based on Table 3, assign a grade. Column Q is for grade, and column R is for status.

vii. If the status is Pass, please colour column P with green. You should also colour the Pass line with a light red.

Table 3

Marks	**Grade**	**Status**
90-100	A+	Pass
80 -89	A	Pass
75 - 79	A-	Pass
70 – 74	B+	Pass
65 – 69	B	Pass
60 – 64	B-	Fail
55 – 59	C+	Fail
50 – 54	C	Fail
45 – 49	C-	Fail
40 – 44	D+	Fail
35 – 39	D	Fail
30 – 34	D-	Fail
0 – 29	E	Fail

viii. Figure 4 shows a calculation for columns G through R. In addition, the coloured cells are displayed.

G	H	I	J	K	L	M	N	O	P	Q	R
P1	P2	P3	P4	P5	B1	B2	B3	TM	Percent	Grade	Status
0.41	2.12	1.42	2.81	2.27	2.81	2.27	2.12	7.21	72.13	B+	Pass
0.29	0.39	2.17	1.95	1.21	2.17	1.95	1.21	5.34	53.36	C	Fail
3.06	2.16	0.68	2.67	2.57	3.06	2.67	2.57	8.29	82.94	A	Pass
2.46	0.32	1.85	2.00	1.12	2.46	2.00	1.85	6.31	63.08	B-	Fail
1.75	0.73	1.84	1.91	0.89	1.91	1.84	1.75	5.49	54.90	C	Fail
0.41	2.16	2.21	2.11	1.75	2.21	2.16	2.11	6.48	64.77	B-	Fail
3.28	2.66	2.33	2.08	1.78	3.28	2.66	2.33	8.27	82.70	A	Pass
0.51	0.26	1.42	1.92	1.35	1.92	1.42	1.35	4.69	46.94	C-	Fail
0.39	2.13	0.68	0.99	0.99	2.13	0.99	0.99	4.11	41.15	D+	Fail
3.00	1.95	0.34	2.97	2.97	3.00	2.97	2.97	8.94	89.42	A	Pass
1.26	2.38	2.52	2.23	1.54	2.52	2.38	2.23	7.13	71.33	B+	Pass
0.46	2.18	1.92	2.53	1.45	2.53	2.18	1.92	6.63	66.30	B	Fail
0.35	1.68	1.18	2.94	2.40	2.94	2.40	1.68	7.03	70.28	B+	Pass
0.44	2.31	1.38	1.98	2.55	2.55	2.31	1.98	6.84	68.42	B	Fail
0.46	2.13	1.73	3.06	2.52	3.06	2.52	2.13	7.71	77.08	A-	Pass
0.51	2.46	1.04	1.32	2.27	2.46	2.27	1.32	6.05	60.51	B-	Fail
3.00	2.20	2.33	1.88	1.91	3.00	2.33	2.20	7.53	75.31	A-	Pass
0.46	2.02	1.11	1.92	1.71	2.02	1.92	1.71	5.64	56.45	C+	Fail

Figure 4

4. Please create a new sheet and label it *Dashboard*. Carry out the data visualisation as follows (see Figure 5):
   i. Determine the mean, maximum, and average values.
   ii. Display grading results as charts and tables.
   iii. Show the total number of records. Please display Pass and Fail in the form of a percentage and the number of records.
   iv. Create Pass and Fail views in the form of pie charts as well.

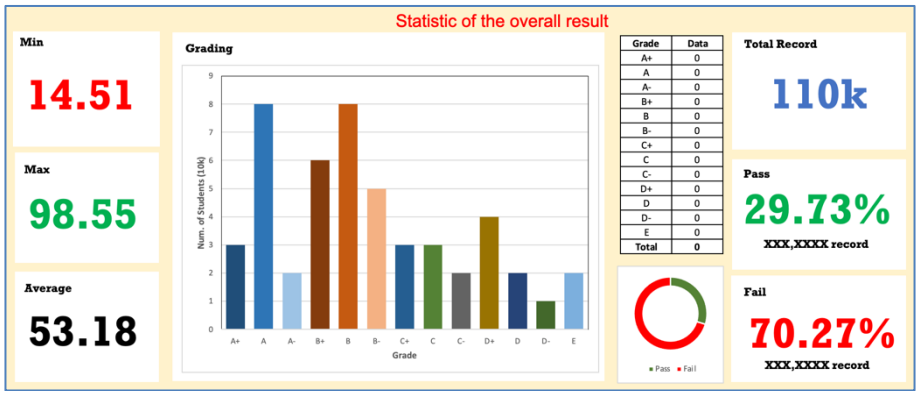

Figure 5