Application/Point System

Introduction

- Problem Statement
  - Quantify applicants' aptitude through form answers
- Proposal
  - A function `Points` with range $P \in [0, 100]$
  - Correctness is **not** the major focus
  - Quantifies
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Factor	Quantified by	Importance
Tendency to self-learn	Number of attempted questions	Primary
Ability to simplify concepts	Average Answer Length	Secondary
Attention to detail	Capitalization of letters in ID	Tertiary

    - The ability to simplify concepts can be learnt over time

Function

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$$\begin{aligned} P &\propto \text{Number of Attempted Questions} \\ &\propto \frac{1}{\text{Average Answer Length}} \\ &\propto \text{Number of Capital Letters in ID} \end{aligned}$$

- Let $P(Q, L, C) = \left\lceil w_Q Q - w_L L + w_C C \right\rceil_2$
  - The result is rounded-off to 2 decimal places for simplicity
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Term	Meaning
Q	Number of attempted questions
L	Average answer length (number of characters)
C	Number of capital Letters
w_Q	Positive weight of attempting questions
$-w_L$	Negative weight of long answers
w_C	Positive weight of capital letters

  - Attention to detail is important for Thahir, but the other two factors are more important for the 'self-learning' idea that Priyank sir proposes
- After trial and error (could be improved)
  -
$$P(Q, L, C) = \left\lceil 30Q - 0.05L + 2C \right\rceil_2$$

Verification

- Testing Upper and Lower Bounds
- This is quite similar to Digital Design Truth Tables (MSB-LSB concept)
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Points	Attempted Questions	Average Answer Length	Caps Points
96.8	3	24	4
88.8	3	24	0
78	3	400	4
70	3	400	0
66.8	2	24	4
58.8	2	24	0
48	2	400	4
40	2	400	0
36.8	1	24	4
28.8	1	24	0
18	1	400	4
10	1	400	0
8	0	0	4
0	0	0	0

Implementation

- Attempted Questions
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```mysql
=ARRAYFORMULA( IF(ISBLANK(G3:G), "",
    COUNTA(G3)
) )
```
- Average Length
  -
```mysql
=ARRAYFORMULA( IF(ISBLANK(G3:G), "",
    LEN(G3)/D3
) )
```
- Points
  -
```mysql
=ARRAYFORMULA( IF(ISBLANK(E3:E), "",
    round( 30*B3:B - 0.05*D3:D + 2*C3:C , 2)
) )
```