⟹ Calculation of TF-IDF of the term Health.

① TF:

$$TF(\text{"health"}, Doc1) = 1/21 = 0.04$$

$$TF(\text{"health"}, Doc2) = 1/21 = 0.04$$

$$TF(\text{"health"}, Doc3) = 1/28 = 0.03$$

② DF & IDF:

$$IDF(t) = \log\left(\frac{N}{DF(t)}\right)$$

$$DF(\text{"health"}) = 3$$

$$N = 3$$

$$IDF(\text{"health"}) = \log(3/3) = \log(1) = 0$$

③ TF-IDF Calculation

$$TF_1 = \frac{1}{16} = 0.0625$$

$$TF_2 = \frac{0}{18} = 0$$

$$TF_3 = \frac{0}{19} = 0$$

$$TF\text{-}IDF_1 = TF_1 \times IDF = 0.029$$

$$TF\text{-}IDF_2 = TF_2 \times IDF = 0$$

$$TF\text{-}IDF_3 = TF_3 \times IDF = 0$$

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