Cat   Documents

Training   =   just   plain   boring
            -   entirely   predictable   and   lacks   energy
            -   no   surprises   and   very   few   laughs
            +   very   powerful
            +   the   most   fun   film   of   the   summer.

Test   ?   predictable   with   no   fun

Question   Find ? i.e the category of the above
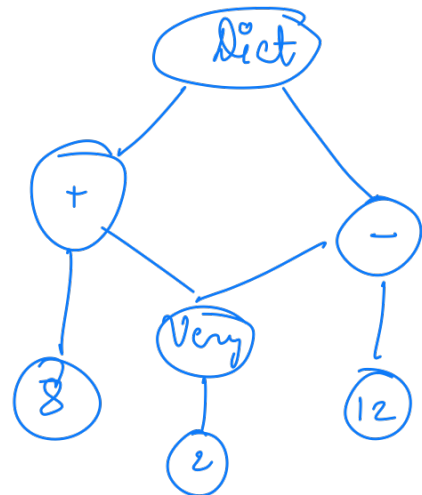   test document.

$P(+) = 2/5$

$P(-) = 3/5$

$P(predictable) = 1/23$

$P(with) = 0$

$P(no) = 1/23$

$P(fun) = 1/23$

$$P(predictable / -) = \frac{1+1}{14+20} = 1/17$$

$$P(predictable / +) = \frac{0+1}{29} = 1/29$$

$$P(no/-) = \frac{1+1}{34} = 1/17$$

$$P(no/+) = \frac{0+1}{29} = 1/29$$

$$P(fun/-) = \frac{1}{34}$$

$$P(fun/+) = 2/29$$

Scoring

$$P(-)\ P(D/-) = 3/5 \times \frac{2 \times 2}{34^3}$$

$$\approx 6 \times 10^{-5}$$

$$P(+)\ P(D/+) = \frac{2}{5} \times \frac{2}{29^3}$$

$$\sim 3.2 \times 10^{-5}$$

As, $\quad P(-)\ P(D/-) > P(+)\ P(D/+)$

$\Rightarrow$ test document belongs to the negative category.