Given:

P(class=1) = 0.4

Lambda = 1

|  |  |  |
| --- | --- | --- |
| Class\Feature | 1 | 2 |
| A=1 | 10/10 | 6/10 |
| B=1 | 3/10 | 1010 |
| C=1 | 4/10 | 5/10 |
| D=1 | 2/10 | 6/10 |

Find: P(class=1 | A=0, B=0, C=1, D=1).

Note: A=0 is just the complement of A=1.. Since performing Naïve Bayes directly will give us an indeterminate answer, we must do lambda smoothing in each class.

Applying… Using the equation na ginhatag ko haim kanina. Since duwa ka classes, d =2.

Xi = numerator of each class. Example at B=1, given 3/10, Xi=3. N = total (denominator) = 10

|  |  |  |
| --- | --- | --- |
| Class\Feature | 1 | 2 |
| A=1 | 10/10  = 11/12 | 6/10  = 7/12 |
| B=1 | 3/10  4/12 | 10/10  11/12 |
| C=1 | 4/10  =5/12 | 5/10  =6/12 |
| D=1 | 2/10  =3/12 | 6/10  =7/12 |

Then, we can perform Naïve Bayes here.

P(class=1) = 0.4 (given)

Answer = = 0.2759