Day:_____ Date:_____

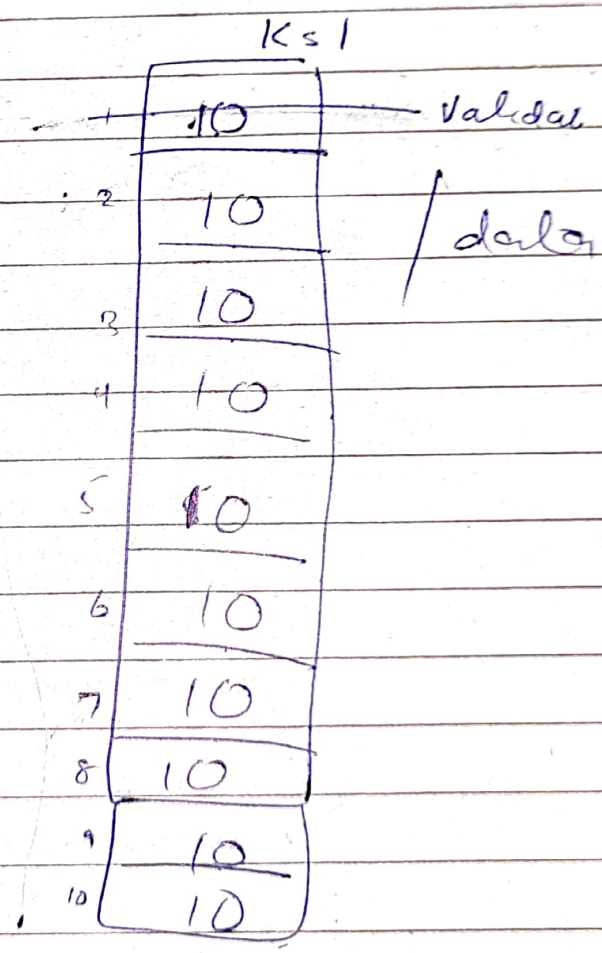
K = 10

Coming example = 100

N1 time error

model : N2

Valid alm set size = N3



N2 = 90

N1 = 10

N3 = 10

C

i - Model

ii - Model 3

iii - Model 2

Day:

$P(\text{Class}-1) = \frac{3}{7}$

$P(\text{Class}-2) = \frac{4}{7}$

$P(T_1/\text{class}1) = \frac{2+1}{19+5(1)} = \frac{3}{24}$

$P(T_2/\text{class}1) = \frac{2+1}{19+5(1)} = \frac{3}{24}$

$P(T_3/\text{class}1) = \frac{10+1}{19+5(1)}$

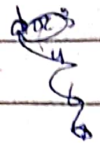
$P(T_4/\text{class}1) = \frac{3+1}{19+5(1)} = \frac{4}{24}$

$P(T_5/\text{class}1) = \frac{0+1}{19+5(1)} = \frac{3}{24}$

$9 + 8 + 2$

$2 + 2 + 4 + 4 + 2 + 3 + 2$

$$P(T_0/\text{Class } 2) = \frac{7+1}{25+5} = \frac{8}{30}$$



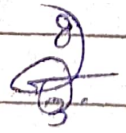
$$P(T_2/\text{Class } 2) = \frac{3+1}{25+5} = \frac{4}{30}$$

$$P(T_3/\text{Class } 2) = \frac{4+1}{25+5} = \frac{5}{30}$$

$$P(T_4/\text{Class } 2) = \frac{11+1}{25+5} = \frac{12}{30}$$

$$P(T_5/\text{class } 2) = \frac{0+1}{25+5} = \frac{1}{30}$$

25 : 5



Day:_____

Date:_____

For doc 8

T1	T2	T3	T4	T5
3	1	0	1	1

$$\text{Class 1} = \left(\frac{3}{7}\right) \times \left(\frac{3}{24}\right)^{3} \times \left(\frac{1}{24}\right)^{0} \times \left(\frac{4}{24}\right)^{1} \times \left(\frac{1}{24}\right)^{1}$$

$$= \frac{3}{7} \times$$

$$= 1.009 \times 10^{-8}$$

$$\text{Class 2} = \left(\frac{4}{7}\right) \times \left(\frac{8}{30}\right)^{3} \times \left(\frac{4}{30}\right) \times \left(\frac{12}{30}\right)^{1} \times \left(\frac{1}{30}\right)^{1}$$

$$= 1.23 \times 10^{-6}$$

Identified

Doc 8 is classified into Class 2

Date:

Now solved through Bernoulli:

$$P(\text{Class 1}) = \frac{3}{7}$$

$$P(\text{Class 2}) = \frac{4}{7}$$

$$P(T1/\text{Class 1}) = \frac{1+1}{3+2} = \frac{2}{5}$$

$$P(T2/\text{Class 1}) = \frac{1+1}{3+2} = \frac{2}{5}$$

$$P(T3/\text{Class 1}) = \frac{3+1}{3+2} = \frac{4}{5}$$

$$P(T4/\text{Class 1}) = \frac{1+1}{3+2} = \frac{2}{5}$$

$$P(T5/\text{Class 1}) = \frac{1+1}{3+2} = \frac{2}{5}$$

Day: _____ Date: _____

(4+2) = 6

$P(T1/Class2) = \frac{3+1}{6} = \frac{4}{6}$

$P(T2/Class2) = \frac{3+1}{6} = \frac{4}{6}$

$P(T3/Class2) = \frac{2+1}{6} = \frac{3}{6}$

$P(T4/Class2) = \frac{4+1}{6} = \frac{5}{6}$

$P(T5/Class2) = \frac{0+1}{6} = \frac{1}{6}$

0.2

$Class1 = \frac{3}{7} \times \frac{2}{5} \times \frac{2}{5} \times \left(1-\frac{4}{5}\right) \times \left(\frac{2}{5}\right) \times \left(\frac{2}{5}\right)$

$= 0.002$ 19 0.5

$Class2 = \frac{4}{7} \times \frac{4}{6} \times \frac{4}{6} \left(1-\frac{3}{6}\right) \times \left(\frac{3}{6}\right) \times \left(\frac{1}{6}\right)$

$= 0.017$ ✓ Class 2

Day:_____ Date:_____

	T1	T2	T3	T4	T5
doc 1	1	0	1	1	0
doc 2	0	1	1	0	1
doc 3	1	0	1	1	0
doc 4	0	1	0	1	0
doc 5	0	0	1	0	0
doc 6	1	1	0	1	0
doc 7	1	1	1	1	0

	T1	T2	T3	T4	T5
doc 8	0	1	0	1	1

KNN hamming distance

Class 1	doc 1	1+1+1+0+1 = 4
~~Class 1~~	~~doc 2~~	0+0+1+1+0 = 2
Class 2	doc 3	1+1+1+0+1 = 4
Class 2	doc 4	0+0+0+0+1 = 1
Class 1	doc 5	0+1+1+1+1 = 4
Class 2	doc 6	1+0+0+0+1 = 2
Class 2	doc 7	1+0+1+0+1 = 3

Class 2