TUGAS KONSEP APLIKASI DATA MAINING TENTANG MENGHITUNG TENTANG NAVY BAYES

Nama : Himatus Yulvi A.S

Jurusan :Sistem Infomasi

Nim :17.51.0005

KEMENTRIAN RISET DAN TEKNOLOGI PENDIDIKAN TINGGI
SEKOLAH TINGGI MANAJEMEN INFORMATIKA KOMPUTER
PRADNYA PARAMITA
MALANG
2020

1. Buatlah data set dengan ketentuan sebagai berikut :

a. Terdiri dari 30 record:

b. Dalam keseluruhan record harus memiliki kriteria sebagai berikut:

	DAY-BUY	
No.	DAY	PURCHASE/BUY
1	WEEKDAY	YES
2	WEEKDAY	YES
3	WEEKDAY	NO
4	HOLIDAY	YES
5	WEEKDAY	YES
6	HOLIDAY	NO
7	WEEKEND	YES
8	WEEKDAY	YES
9	WEEKEND	YES
10	HOLIDAY	YES
11	HOLIDAY	YES
12	HOLIDAY	NO
13	WEEKEND	YES
14	HOLIDAY	YES
15	WEEKDAY	NO
16	WEEKEND	NO
17	HOLIDAY	YES
18	WEEKDAY	YES
19	WEEKEND	YES
20	WEEKEND	YES
21	HOLIDAY	YES
22	HOLIDAY	NO
23	WEEKDAY	YES
24	WEEKDAY	YES
25	WEEKEND	YES
26	WEEKEND	YES
27	WEEKDAY	YES
28	WEEKDAY	YES
29	HOLIDAY	YES
30	HOLIDAY	YES

DAY	BUY	
	YES	NO
WEEKDAY	9	2
	YES	No.
WEEKEND	7	1
	YES	NO
HOLIDAY	8	3

	DISCOUNT-BUY	
No.	DISCOUNT	PURCHASE/BUY
1	YES	YES
2	YES	YES
3	NO	NO
4	YES	YES
5	YES	YES
6	NO	NO
7	YES	YES
8	YES	YES
9	YES	YES
10	YES	YES
11	NO	YES
12	NO	NO
13	YES	YES
14	YES	YES
15	YES	NO
16	NO	NO
17	YES	YES
18	YES	YES
19	YES	YES
20	YES	YES
21	YES	YES
22	NO	NO
23	YES	YES
24	YES	YES
25	YES	YES
26	YES	YES
27	NO	YES
28	NO	YES
29	NO	YES
30	NO	YES

FREQUENCRY	DISCOUNT-BUY
	YES-YES
DISCOUNT	19

FREQUENCRY	DISCOUNT-BUY
	NO-YES
DISCOUNT	5

FREQUENCRY	DISCOUNT-BUY
	YES-No.
DISCOUNT	1

FREQUENCRY	DISCOUNT-BUY
	No.-No.
DISCOUNT	5

	FREEDELIVERY-BUY	
No.	FREEDELIVERY	PURCHASE/BUY
1	YES	YES
2	YES	YES
3	NO	NO
4	YES	YES
5	YES	YES
6	NO	NO
7	NO	YES
8	YES	YES
9	YES	YES
10	YES	YES
11	YES	YES
12	NO	NO
13	YES	YES
14	YES	YES
15	YES	NO
16	YES	NO
17	YES	YES
18	YES	YES
19	YES	YES
20	YES	YES
21	YES	YES
22	NO	NO
23	NO	YES
24	YES	YES
25	YES	YES
26	YES	YES
27	NO	YES
28	YES	YES
29	YES	YES
30	YES	YES

FREQUENCRY	FREEDELIVERY-BUY
	YES-YES
FREEDELIVERY	21

FREQUENCRY	FREEDELIVERY-BUY
	NO-YES
FREEDELIVERY	3

FREQUENCRY	FREEDELIVERY-BUY
	YES-No.
FREEDELIVERY	2

FREQUENCRY	FREEDELIVERY-BUY
	NO-No.
FREEDELIVERY	4

JUMLAH 30 RECORD KESELURUHAN

JUMLAH DATA KESELURUHAN				
No.	DAY	DISCOUNT	FREE DELIVERY	PURCHASE/BUY
1	WEEKDAY	YES	YES	YES
2	WEEKDAY	YES	YES	YES
3	WEEKDAY	NO	NO	NO
4	HOLIDAY	YES	YES	YES
5	WEEKDAY	YES	YES	YES
6	HOLIDAY	NO	NO	NO
7	WEEKEND	YES	NO	YES
8	WEEKDAY	YES	YES	YES
9	WEEKEND	YES	YES	YES
10	HOLIDAY	YES	YES	YES
11	HOLIDAY	NO	YES	YES
12	HOLIDAY	NO	NO	NO
13	WEEKEND	YES	YES	YES
14	HOLIDAY	YES	YES	YES
15	WEEKDAY	YES	YES	NO
16	WEEKEND	NO	YES	NO
17	HOLIDAY	YES	YES	YES
18	WEEKDAY	YES	YES	YES
19	WEEKEND	YES	YES	YES
20	WEEKEND	YES	YES	YES
21	HOLIDAY	YES	YES	YES
22	HOLIDAY	NO	NO	NO
23	WEEKDAY	YES	NO	YES
24	WEEKDAY	YES	YES	YES
25	WEEKEND	YES	YES	YES
26	WEEKEND	YES	YES	YES
27	WEEKDAY	NO	NO	YES
28	WEEKDAY	NO	YES	YES
29	HOLIDAY	NO	YES	YES
30	HOLIDAY	NO	YES	YES

2. Hitunglah Probabilitas dari:

a. P (Buy | Day = Weekday, Free Delivery = Yes, Discount = Yes)

b. P (Buy | Day = Weekday, Free Delivery = No, Discount = No)

c. P (Not Buy | Day = Weekday, Free Delivery = Yes, Discount = Yes)

d. P (Not Buy | Day = Weekday, Free Delivery = No, Discount = No)

e. P (Buy | Day = Weekend, Free Delivery = Yes, Discount = Yes)

f. P (Buy | Day = Weekend, Free Delivery = No, Discount = No)

g. P (Not Buy | Day = Weekend, Free Delivery = Yes, Discount = Yes)

h. P (Not Buy | Day = Weekend, Free Delivery = No, Discount = No)

Jawab:

FREQUENCY TABLE		BUY		
		YES	No.	
DISCOUNT	YES	19	1	20
	No.	5	5	10
		24	6	

FREQUENCY TABLE		BUY		
		YES	No.	
DISCOUNT	YES	19/24	1/6	20/30
	No.	5/24	5/6	10/30
		24/30	6/30	

FREQUENCY TABLE		BUY		
		YES	No.	
FREE DELIVERY	YES	21	2	23
	No.	3	4	7
		24	6	

FREQUENCY TABLE		BUY		
		YES	No.	
FREE DELIVERY	YES	21/24	2/6	23/30
	No.	3/24	4/6	7/30
		24/30	6/30	

FREQUENCY TABLE		BUY		
		YES	No.	
DAY	WEEKDAY	9	2	11
	WEEKEND	7	1	8
	HOLIDAY	8	3	11
		24	6	

FREQUENCY TABLE		BUY		
		YES	No.	
DAY	WEEKDAY	9/24	2/6	11/30
	WEEKEND	7/24	1/6	8/30
	HOLIDAY	8/24	3/6	11/30
		24/30	6/30	

a. P (Buy | Day = Weekday, Free Delivery = Yes, Discount = Yes)

Jawab :

Les A= Buy

P (A | B) = P(Yes Buy | Discount = Yes, Free Delevery= Yes, Day= Weekday

$$= \frac{P(\text{Discount=Yes}|\text{Yes}) * P(\text{Free Delivery= Yes}|\text{Yes}) * P(\text{Day= Weekday} | \text{Yes}) * P(\text{Yes Buy})}{P(\text{Discount=Yes}) * P(\text{Free Delivery= Yes}) * P(\text{Day= Weekday})}$$

$$P (A | B) = \frac{(19/24) * (21/24) * (9/24) * (24/30)}{(20/30) * (23/30) * (11/30)}$$

$$= \frac{(0,791) * (0,875) * (0,375) * (0,8)}{(0,667) * (0,767) * (0,367)} = 0,2076375/0,187753163 = 1,1059 \Rightarrow \mathbf{1,106}$$

b. P (Buy | Day = Weekday, Free Delivery = No, Discount = No)

Jawab :

Les A= Buy

P (A | B) = P(Yes Buy | Discount = No, Free Delevery= No, Day= Weekday

$$= \frac{P(Discount=No|Yes) * P(Free\ Delivery= No|Yes) * P(Day= Weekday \mid Yes) * P(Yes\ Buy)}{P(Discount= No) * P(Free\ Delivery= No) * P(Day= Weekday)}$$

$$P (A \mid B) = \frac{(5/24) * (3/24) * (9/24) * (24/30)}{(10/30) * (7/30) * (11/30)}$$

$$= \frac{(0,208) * (0,125) * (0,375) * (0,8)}{(0,333) * (0,233) * (0,367)} = 0,0078 / 0,028475163 = 0,2739 \Rightarrow \mathbf{0,274}$$

c. P (No Buy | Day = Weekday, Free Delivery = Yes, Discount = Yes)

Jawab :

Les A= No Buy

P (A | B) = P(No Buy | Discount = Yes , Free Delevery= Yes, Day= Weekday

$$= \frac{P(Discount=Yes|No) * P(Free\ Delivery= Yes|No) * P(Day= Weekday \mid No) * P(No\ Buy)}{P(Discount= Yes) * P(Free\ Delivery= Yes) * P(Day= Weekday)}$$

$$P (A \mid B) = \frac{(1/6) * (2/6) * (2/6) * (6/30)}{(20/30) * (23/30) * (11/30)}$$

$$= \frac{(0,167) * (0,333) * (0,333) * (0,2)}{(0,667) * (0,767) * (0,367)} = 0,003704 / 0,187753 = 0,0197 \Rightarrow \mathbf{0,020}$$

d. P (Not Buy | Day = Weekday, Free Delivery = No, Discount = No)

Jawab:

Les A= No Buy

P (A | B) = P(No Buy | Discount = No , Free Delevery= No, Day= Weekday

$$= \frac{P(\text{Discount=No}|\text{No}) * P(\text{Free Delivery= No}|\text{No}) * P(\text{Day= Weekday} | \text{No}) * P(\text{No Buy})}{P(\text{Discount= No}) * P(\text{Free Delivery= No}) * P(\text{Day= Weekday})}$$

$$P (A | B) = \frac{(5/6) * (4/6) * (2/6) * (6/30)}{(10/30) * (7/30) * (11/30)}$$

$$= \frac{(0,833) * (0,667) * (0,333) * (0,2)}{(0,333) * (0,233) * (0,367)} = 0,0370037 / 0,028475167 = 1,2995 \Rightarrow \mathbf{1,210}$$

e. P (Buy | Day = Weekend, Free Delivery = Yes, Discount = Yes)

Jawab :

Les A= Buy

P (A | B) = P(Yes Buy | Discount = Yes, Free Delevery= Yes, Day= Weekend

$$= \frac{P(\text{Discount=Yes}|\text{Yes}) * P(\text{Free Delivery= Yes}|\text{Yes}) * P(\text{Day= Weekend} | \text{Yes}) * P(\text{Yes Buy})}{P(\text{Discount=Yes}) * P(\text{Free Delivery= Yes}) * P(\text{Day= Weekend})}$$

$$P (A | B) = \frac{(19/24) * (21/24) * (7/24) * (24/30)}{(20/30) * (23/30) * (8/30)}$$

$$= \frac{(0,791) * (0,875) * (0,291) * (0,8)}{(0,667) * (0,767) * (0,267)} = 0,1611267/0,136594263 = 1,1796 \Rightarrow \mathbf{1,180}$$

f. P (Buy | Day = Weekend, Free Delivery = No, Discount = No)

Jawab :

Les A= Buy

P (A | B) = P(Yes Buy | Discount = No, Free Delevery= No, Day= Weekend

$$= \frac{P(\text{Discount=No}|\text{Yes}) * P(\text{Free Delivery= No}|\text{Yes}) * P(\text{Day= Weekend} | \text{Yes}) * P(\text{Yes Buy})}{P(\text{Discount= No}) * P(\text{Free Delivery= No}) * P(\text{Day= Weekend})}$$

$$P (A | B) = \frac{(5/24) * (3/24) * (7/24) * (24/30)}{(10/30) * (7/30) * (8/30)}$$

$$= \frac{(0,208) * (0,125) * (0,291) * (0,8)}{(0,333) * (0,233) * (0,267)} = 0,0060528 / 0,020716263 = 0,2921 \Rightarrow \mathbf{0,292}$$

g. P (Not Buy | Day = Weekend, Free Delivery = Yes, Discount = Yes)

Jawab :

Les A= No Buy

P (A | B) = P(No Buy | Discount = Yes , Free Delevery= Yes, Day= Weekend

$$= \frac{P(\text{Discount=Yes}|\text{No}) * P(\text{Free Delivery= Yes}|\text{No}) * P(\text{Day= Weekend} | \text{No}) * P(\text{No Buy})}{P(\text{Discount= Yes}) * P(\text{Free Delivery= Yes}) * P(\text{Day= Weekend})}$$

$$P (A | B) = \frac{(1/6) * (2/6) * (1/6) * (6/30)}{(20/30) * (23/30) * (8/30)}$$

$$= \frac{(0,167) * (0,333) * (0,167) * (0,2)}{(0,667) * (0,767) * (0,267)} = 0,001857 / 0,136594263 = 0,0135 \Rightarrow \mathbf{0,014}$$

h. P (Not Buy | Day = Weekend, Free Delivery = No, Discount = No)

Jawab:

Les A= No Buy

P (A | B) = P(No Buy | Discount = No , Free Delevery= No, Day= Weekend

$$= \frac{P(\text{Discount=No}|\text{No}) * P(\text{Free Delivery= No}|\text{No}) * P(\text{Day= Weekend} | \text{No}) * P(\text{No Buy})}{P(\text{Discount= No}) * P(\text{Free Delivery= No}) * P(\text{Day= Weekend})}$$

$$P (A | B) = \frac{(5/6) * (4/6) * (1/6) * (6/30)}{(10/30) * (7/30) * (8/30)}$$

$$= \frac{(0,833) * (0,667) * (0,167) * (0,2)}{(0,333) * (0,233) * (0,267)} = 0,0185574 / 0,0207163 = 0,8957 \Rightarrow \mathbf{0,896}$$

Jadi:

A. PURBABILYTI OF PURCHASE = **1,106**
   PURBABILYTI OF NO PURCHASE= **0,020**
   JUMLAH = 1,126

   LIKELIHOOD OF **PURCASHE** = 1,106/ 1,126 = 0,9822%
   LIKELIHOOD OF **NO PURCASHE** = 0,020/ 1,126=0,0177%

B. PURBABILYTI OF PURCHASE = **0,274**
   PURBABILYTI OF NO PURCHASE= **1,210**
   JUMLAH = 1,484

   LIKELIHOOD OF **PURCASHE** = 0,274/ 1,484 = 0,1172%
   LIKELIHOOD OF **NO PURCASHE** = 1,210/ 1,484=0,8154%

C. PURBABILYTI OF PURCHASE = **1,180**
   PURBABILYTI OF NO PURCHASE= **0,014**
   JUMLAH = 1,12

   LIKELIHOOD OF **PURCASHE** = 1,180/ 1,12 = 1,0536%
   LIKELIHOOD OF **NO PURCASHE** = 0,014/ 1,12=0,0125%

D. PURBABILYTI OF PURCHASE = **0,292**
PURBABILYTI OF NO PURCHASE= **0,896**
JUMLAH = 1,188

LIKELIHOOD OF **PURCASHE** = 0,292/ 1,188 = 0,2458%
LIKELIHOOD OF **NO PURCASHE** = 0,896/ 1,188=0,7542%