	Roll no. 2019111019
	SMAI
	For parent note D:
	No. of positive review = 5
	No. " negative " = 5
	Parent entropy = $H(D) = -\sum_{i \in class} P_i \log(P_i)$
1	$= -2 \times 1/2 \times \log(1/2)$
1.4	
	Letter by the second of the se
#	If we divide along smell
	-> For node "woody"
	No. of positive = 2
	" " negative = 3
	P(Di) = (2+3)/10 = 1/2
	$H(Di) = -2 \log(2) - 3 \log(3) = 0.97$ $5 = 5 = 0.97$
	-> For mode "fruity"
	No. of positive = 3
Electric States	No. of negative = 2
	P(Di) = (3+2)/10 = 1/2
	$H(Di) = -3 \log(3) - 2 \log(2) = 0.97$ 5 5 5
72	
	Info gain = $1 - 1 \times 0.97 - 1 \times 0.97 = 0.03$
ETHOLON	

Ir we divide along taste

- For mode 'sweet'

No. of positive = 0

No. of negative = 3

P(Di) = 3/10

 $H(Di) = -3 \log(3) = 0$ 

-) For mode 'sour'

No. of positive = 3

P(Di) = 3/10

 $H(Di) = -3 \log(3) = 0$ 

-> For mode 'salty'

No. of positive = 2

11 11 negative = 2

P(Di) = 4/10

 $H(Di) = 2 \times -2 \log(2) = 1.$ 

Info gain = 1- 4 = 0.6

	Date: Page:							
#	If we divide along postion							
	· For mode 'small'							
	No. of negative = 1							
	No. of positive = 4							
	$P(Di) = \frac{(1+4)}{10} = \frac{1}{2}$							
	$H(Di) = -1 \log(1/5) - 4 \log(4/5) = 0.72$							
Name of	8 7 5							
	· For mode 'large'							
	No. of regative = 4  No. of positive = 1							
-	P(Di) = (4+1)/10 = 1/2							
	$H(Di) = -4 \log(4/5) - 1 \log(1/5) = 0.72$							
	$\frac{10 + 6 \cdot \text{gain}}{2} = 1 - 2 \times 1 \times 0.72 = 0.28$							
M. S. C.	As info gain is maximum for taste, we will split along							
	taste.							
	5 megative							
	5 positive							
	Salky							
	531700							
Di-	3 negative 3 positive 2 negative							
A L	3 negative 3 positive 2 positive							

	Page:	,		Date: ————————————————————————————————————	
	Now if the tas	le is salty	, the table	will be-	
	Review	Smell	Taste	Postion	
7	Negative	Fruity	Salty		
1.6	Negative	Fauity		Large	1
eng = a	Positive	, ,	Salty	Small	
	Positive	Fruity	Salty	Small	
	9817176	- 1010	3210	Smen	
	From the above to feature with pos	itive info	sain and Me		
A. A. A. A.	So the decision to	see obtained	1 is -		
					Hard Street Street
	THEOLOGY				-
		NODE			
				and the same of th	
100		Div	vide taste	Table 1	
	To France	X	E-Postia		
	Si	weet	Sour	. 5 4	
-	Value	Salty			
	Negative		Posi	tive	S. STATE OF THE ST
		NODE			
		HEELE	ACTUAL TO THE PARTY OF THE PART		
		Di-	hostion hige		
		The state of			
		1			50
	N	egative	Positive	Company of the control of the contro	
Pa					ic.
W.				in the second	