

Sheet 5

① a) you can use it on the last classif.



b) 98K...50K W

20K...30K N

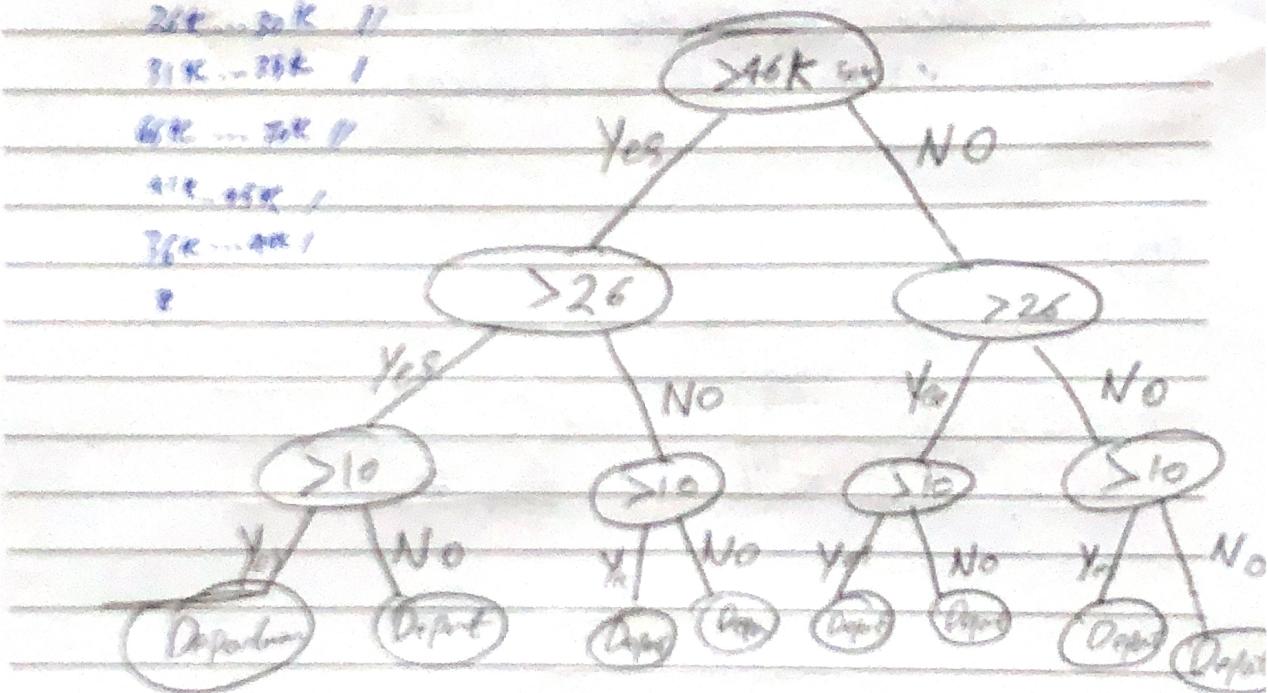
31K...33K I

68K...70K P

41K...45K L

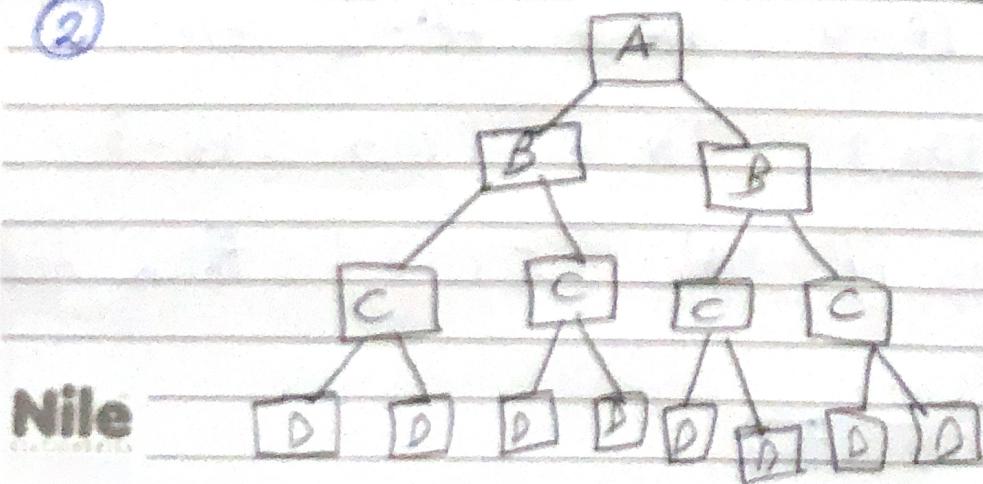
76K...80K R

*



c) Junior.

②



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(3)

$$G(D) = 1 - \sum_{i=1}^k p(C_i | D)$$

$$G(D_y, D_N) = \frac{n_y}{n} G(D_y) + \frac{n_N}{n} G(D_N)$$

(4) The more nodes the more specific the model is which causes the model to overfit then worse results in training.

(5)

Predicted			Predicted		
	C ₁	!C ₁		C ₂	!
actual C ₁	5	3 FN	actual C ₂	3	3
!C ₁	FP 2	17 TN	!	5	16

Predicted

	C ₃	!
C ₃	11	2
!	1	13

C₁: TP = 5 , TN = 17 , FP = 2 , FN = 3

C₂: TP = 3 , TN = 16 , FP = 5 , FN = 3

C₃: TP = 11 , TN = 13 , FP = 1 , FN = 2

$$F_1 = \frac{2TP}{2TP+FP+FN}$$

$$F-C1 = \frac{2}{3} = 0.667$$

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$$F-C2 = \frac{3}{7} = 0.429$$

$$F-C3 = \frac{22}{23} = 0.88$$

⑥

	X	y	class	a)
P1	-1	1	+	
P2	-0.7	1	+	
P3	-0.4	1	+	
P4	-0.1	1	-	
P5	0.2	1	-	
P6	0.5	1	-	
P7	0.9	1	+	