

PES University, Bengaluru (Established under Karnataka Act No. 16 of 2013)

UE15CS353/UE17CS303

DECEMBER 2020: END SEMESTER ASSESSMENT (ESA) B TECH SEMESTER $\mathbf{5}^{\text{th}}$

UE15CS353/UE17CS303 -Machine Learning

b) Day D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 D11 D12 D13 D14 Given abov 1. Find Info 2. Construc c) Mention the a) Perfom KN Attriubte1 7 7 7 3 1 b)			Answer	All Qu	estions			Max	Mark	s: 10	0	
D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 D11 D12 D13 D14 Given abov 1. Find Info 2. Construc c) Mention the a) Perfom KN Attriubte1 7 7 3 1 b) x ₁ x ₂ x ₃ Initial In x ₁ x ₂	Differenti	ate Classification	Versus Predict	ion with ar	Example.							(
D2 D3 D4 D5 D6 D7 D8 D9 D10 D11 D12 D13 D14 Given abov 1. Find Info 2. Construc c) Mention the a) Perfom KN Attriubte1 7 7 3 1 b) x ₁ x ₂ 2 x ₃ 3 Initial In x ₁ x ₂ x ₃	Day	Outlook	Tempe	erature	Humi	dity	Wind	P	layTo	ennis		
D3 D4 D5 D6 D7 D8 D9 D10 D11 D12 D13 D14 Given abov 1. Find Info 2. Construc c) Mention the a) Perfom KN Attriubte1 7 7 3 1 b) x ₁ x ₂ x ₃ Initial In x ₁ x ₂	D1	Sunny		ot.	Hig		Weak		No		7	1
D4 D5 D6 D7 D8 D9 D10 D11 D12 D13 D14 Given abov 1. Find Info 2. Construc c) Mention the a) Perfom KN Attriubte 1 7 7 3 1 b) x ₁ x ₂ x ₃ Initial In x ₁ x ₂	23355530	Sunny		ot	Hig		Strong	2'	No)		1
D5 D6 D7 D8 D9 D10 D11 D12 D13 D14 Given abov 1. Find Info 2. Construc C) Mention the a) Perform KN Attriubte	D3	Overcast	H	ot	Hig		Weak		Ye			
D6 D7 D8 D9 D10 D11 D12 D13 D14 Given abov	D4	Rain	M	ild	IIig		Weak		Yes	s		
D7 D8 D9 D10 D11 D12 D13 D14 Given abov 1. Find Info 2. Construce Mention the a) Perfom KN Attriubte1 7 7 3 1 b) x ₁ x ₂ 2 x ₃ 3 Initial Inj x ₁ x ₂	33333333	Rain		ool	Norr		Weak		Yes			
D8 D9 D10 D11 D12 D13 D14 Given abov 1. Find Info 2. Construc c) Mention the a) Perfom KN Attriubte I 7 7 3 1 b) x_1 x_2 x_3 x_3 Initial Inj x_1 x_2	D6	Rain	Co	ool	Norr	nal	Strong	2	No)		- 1
D9 D10 D11 D12 D13 D14 Given abov 1. Find Infe 2. Construc c) Mention the a) Perfom KN Attriubte1 7 7 3 1 b) x ₁ x ₂ 2 x ₃ 3 Initial In x ₁ x ₂	D7	Overcast		ool	Norr	nal	Strong		Yes	s		
D10 D11 D12 D13 D14 Given abov I. Find Info 2. Construc c) Mention the a) Perfom KN Attriubte1 7 7 3 1 b) x_1 x_2 x_3 Initial In x_1 x_2	D8	Sunny	Mi	ild	Hig		Weak		No	,		- 1
D11 D12 D13 D14 Given abov 1. Find Info 2. Construct c) Mention the a) Perfom KN Attriubte1 7 7 3 1 b) x_1 x_2 x_3 x_4 Initial In x_1 x_2	D9	Sunny	Ce	ool	Norr	nal	Weak		Yes	s		
D12 D13 D14 Given abov 1. Find Info 2. Construc c) Mention the a) Perfom KN Attriubte I 7 7 3 1 b) x_1 x_2 x_3 Initial In x_1 x_2	D10	Rain	Mi	ild	Norr	nal	Weak		Yes	4		- 1
D13 D14 Given abov 1. Find Info 2. Construc c) Mention the a) Perform KN Attriubte 1 7 7 3 1 b) x_1 x_2 x_3 x_4 Initial In x_1 x_2	D11	Sunny	Mi		Norr		Strong	2	Yes	s		
D13 D14 Given abov 1. Find Info 2. Construc c) Mention the a) Perfom KN Attriubte 1 7 7 3 1 b) x_1 x_2 x_3 x_4 Initial In x_1 x_2	D12	Overcast			Hig		Strong		Yes	s		
Given abov 1. Find Info 2. Construct c) Mention the a) Perform KN Attriubte 1 7 7 3 1 b) x_1 x_2 x_3 Initial Inj x_1 x_2	D13	Overcast			Nort		Weak		Yes	5		
Given abov 1. Find Info 2. Construct c) Mention the a) Perform KN Attriubte 1 7 7 3 1 b) x ₁ x ₂ 2 x ₃ 3 Initial Inj x ₁ x ₂ x ₃	5352 52 25	Rain	Mi		Hig		Strong		No			
1. Find Info 2. Construct c) Mention the a) Perfom KN Attriubte I 7 7 3 1 b) x ₁ x ₂ 2 Initial In x ₁ x ₂		ve dataset do the f										
c) Mention the a) Perfom KN Attriubte I 7 7 3 1 b) x ₁ (1) x ₂ (2) Initial In x ₁ x ₂ (2)	2-1 1-995 G-30- N	ormation Gain for		tes.								
a) Perfom KN Attriubte1 7 7 3 1 b) x ₁ x ₂ 2 Initial In x ₁ x ₂	2. Constru	Construct Decision Tree for the above Dataset.										
Attriubte 1 7 7 7 3 1 b) x_1 x_2 x_3 x_4 Initial In x_1 x_2	Mention th	e drawbacks of II	D3 Algorithm(I	Decision To	rees).							4
b) $x_1 = \begin{bmatrix} 7 \\ 7 \\ 3 \\ 1 \end{bmatrix}$ $x_2 = \begin{bmatrix} 2 \\ x_3 \\ 3 \end{bmatrix}$ Initial Injury at 1 x2	Perfom K	NN Classification	n on following	dataset a	ind predict o	lass for x	(Altribute	1=3, Ati	ribute2	=7) wi	nere k=3.	7
b) $x_1 = \begin{bmatrix} 7 \\ 7 \\ 3 \\ 1 \end{bmatrix}$ $x_2 = \begin{bmatrix} 2 \\ x_3 \\ 3 \end{bmatrix}$ Initial Injury and the second se	A ttuiukta 1	A seed	Luta?	alasa								
b) $x_{1} = \begin{bmatrix} 7 & 3 & 1 & 1 \\ 1 & 1 & 1 & 1 \end{bmatrix}$ $x_{2} = \begin{bmatrix} 2 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 \\ \hline x_{1} & x_{2} & 1 & 1 \end{bmatrix}$ Initial In		Attri	bute2	class								
b) $x_1 = \frac{3}{1}$ $x_2 = \frac{3}{2}$ $x_3 = \frac{3}{3}$ Initial Injury and Injury	1000	7		False								
b) $x_1 = x_2$ $x_2 = x_3 = x_3$ Initial In $x_1 = x_2$	7	4		False								
b) $x_{1} = \begin{bmatrix} x_{1} & x_{2} \\ x_{3} & x_{3} \end{bmatrix}$ Initial In	3	4		True								
$x_1 = x_2 = x_3 = x_3 = x_1 = x_2 = x_1 = x_2 = x_2 = x_3 = x_3 = x_3 = x_1 = x_2 = x_2 = x_3 $	1	4		True								
-	x3(1 w ₁₅ w ₁₄ w ₁₅ w ₂₄ w ₂₅ w ₃₄ aput, Weight, a		-	6)→							
1 0		x3 w14 H	V15 W24	W25 W	V34 W35	11/46	1156	θ_4	θ_5	θ_6		
	x_1 x_2	1 0.2 -	-0.3 0.4	0.1 -	-0.5 0.2	-0.3	-0.2	-0.4	0.2	0.1		
D626 0000000 15 12 12 15 15 15 15 15 15 15 15 15 15 15 15 15												
c) List 3 Activa	1 0 Given abov				nput, Weight	, Bias Val	ues. Calcu	alate the	error a	t each	node i.e node 6,node	

	a)		1	C	To 11:	Temporari					
	500	age	Income	Student	Credit rating	buys_computer					
- 1		<=30	high	n	f	n					
		<=30	high	n	e	n					
		3140	high	n	f	у					
-		>40	medium	n	f	у					
1		>40	low	у	f	у					
1		>40	low	У	е	n					
1		3140	low	у	е	у					
1		<=30	medium	n	f	n					
		<=30	low	у	f	k					
١		>40	medium	у	f	У					
١		<=30	medium0	У	e	у					
ı		3140	medium	n	e	у					
ı		3140	high	у	f	у					
ı		>40	medium	n	e	n					
		Compute P(X C) Classification T X = (age <=30)	echnique.				pelow belongs to yes or no class using Bayesian				
b)	Define Boosting and Bagging briefly? How they can improve the performance?									
a	1)	A database has 5 transactions. Let min sup = 60% and min confidence = 80%.									
		TID iter	ne hought								
		TID items bought									
1				T100 {M, O, N, K, E, Y} T200 {D, O, N, K, E, Y} T300 {M, A, K, E} T400 {M, U, C, K, Y} T500 {C, O, O, K, I, E}							
		T200 {D, T300 {M, T400 {M,	O, N, K, E, Y A, K, E} U, C, K, Y}	' }							
		T200 {D, T300 {M, T400 {M, T500 {C,	O, N, K, E, Y A, K, E} U, C, K, Y} O, O, K, I, E	' }	nd FP-growth	respectively Co	nnare the efficiency of the two mining processes				
b))	T200 {D, T300 {M, T400 {M, T500 {C,	O, N, K, E, Y A, K, E} U, C, K, Y} O, O, K, I, E	/ } ng Apriori a		1 200	npare the efficiency of the two mining processes. ables on each of seven subjects in the range 1 to 7.	8			
b)	T200 {D, T300 {M, T400 {M, T500 {C, Find all frequent	O, N, K, E, Y A, K, E} U, C, K, Y} O, O, K, I, E item sets usin	ng Apriori a		1 200		8			
b))	T200 {D, T300 {M, T400 {M, T500 {C,	O, N, K, E, Y A, K, E} U, C, K, Y} O, O, K, I, E item sets usin	/ } ng Apriori a		1 200		8			
b))	T200 {D, T300 {M, T400 {M, T500 {C, Find all frequent Consider the fo Subject 1	O, N, K, E, Y A, K, E} U, C, K, Y} O, O, K, I, E item sets usin llowing data	ng Apriori a set consis		1 200		8			
b))	T200 {D, T300 {M, T400 {M, T500 {C, Find all frequent Consider the fo Subject 1 2	O, N, K, E, Y A, K, E} U, C, K, Y} O, O, K, I, E item sets usin llowing data A 1.0	ng Apriori a set consis B 1.0 2.0		1 200		8			
ь)	T200 {D, T300 {M, T400 {M, T500 {C, Find all frequent Consider the fo Subject 1 2 3	O, N, K, E, Y A, K, E} U, C, K, Y} O, O, K, I, E item sets usin llowing data A 1.0 1.5 3.0	set consis B 1.0 2.0 4.0		1 200		3			
b)	>	T200 {D, T300 {M, T400 {M, T500 {C, Find all frequent}} Consider the fo	O, N, K, E, Y A, K, E} U, C, K, Y} O, O, K, I, E item sets usin llowing data A 1.0 1.5 3.0 5.0	set consis B 1.0 2.0 4.0		1 200		8			
b)		T200 {D, T300 {M, T400 {M, T500 {C, Find all frequent}} } Consider the fo	O, N, K, E, Y A, K, E} U, C, K, Y} O, O, K, I, E item sets usin llowing data A 1.0 1.5 3.0 5.0 3.5	set consis B 1.0 2.0 4.0 7.0 5.0		1 200		3			
ь)		T200 {D, T300 {M, T400 {M, T500 {C, Find all frequent Consider the fo Subject 1 2 3 4 5 6 6	O, N, K, E, Y A, K, E} U, C, K, Y} O, O, K, I, E item sets usin llowing data A 1.0 1.5 3.0 5.0 3.5 4.5	mg Apriori a set consis B 1.0 2.0 4.0 7.0 5.0		1 200		3			
b)		T200 {D, T300 {M, T400 {M, T500 {C, Find all frequent}} } Consider the fo	O, N, K, E, Y A, K, E} U, C, K, Y} O, O, K, I, E item sets usin llowing data A 1.0 1.5 3.0 5.0 3.5 4.5	set consis B 1.0 2.0 4.0 7.0 5.0		1 200					
b)		T200 {D, T300 {M, T400 {M, T400 {M, T500 {C, Find all frequent}}} }	O, N, K, E, Y A, K, E} U, C, K, Y} O, O, K, I, E item sets usin llowing data A 1.0 1.5 3.0 5.0 3.5 4.5 3.5	ng Apriori a set consis B 1.0 2.0 4.0 7.0 5.0 4.5	ting of the sco	ores of two varia		8			
		T200 {D, T300 {M, T400 {M, T400 {M, T500 {C, Find all frequent Consider the fo Subject 1 2 3 4 5 6 7 This data set is	O, N, K, E, Y A, K, E} U, C, K, Y} O, O, K, I, E item sets usin llowing data A 1.0 1.5 3.0 5.0 3.5 4.5 3.5 to be groupe ate the initia	set consis B 1.0 2.0 4.0 7.0 5.0 4.5 ed into two	ting of the sco	ores of two varia	ables on each of seven subjects in the range 1 to 7.	8			
b)		T200 {D, T300 {M, T400 {M, T500 {C, Find all frequent Consider the fo Subject 1 2 3 4 5 6 7 This data set is algorithm genera	O, N, K, E, Y A, K, E} U, C, K, Y} O, O, K, I, E item sets usin llowing data A 1.0 1.5 3.0 5.0 3.5 4.5 3.5 to be groupe ate the initia	set consis B 1.0 2.0 4.0 7.0 5.0 5.0 4.5 ed into two land final of	clusters. As	a first step 1 ar	ables on each of seven subjects in the range 1 to 7.				