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

UE16CS322

DECEMBER 2018: END SEMESTER ASSESSMENT

UE16CS322: Data Analytics(SMP Section)

	Time:	3 Hours (180 I	Minutes)	Ar	nswer All Q	uestions		M	ax Marks: 10	0
		ctions: Only ca		permitt	ed. Please s	how you	r work-outs of	fproblem	clearly.	
1	а	The number o 232, 277, 261, 272. Calculate use this analys	173, 283, 19 skewness an	7, 251, 21 d kurtosis	12, 213, 213, s. What do y	229, 164, ou infer fr	, 219, 196, 186, om these? Hov	, 247, 244, w can the s	269, 216 and hopping mall	6
	b	In the above e	xample, the a	ge detail	s of custome	ers were c	ollected and fo	und to be a	s follows:	4
		0-20 years				500				
		20-40				800		200		
	4	40-60				500				
		>60				200				
	g.	The mall authorstratified sam constructing sa	pling to get	feedbac	k from ped	ple abou	it the Mall. H			
	С	Explain why wi						ecreases wi	th increasing	4
	d	Explain Princip intent and out Number of Inst	come expecte cances: 150 (5	ed. 50 in each	of three cla	sses)	Secretary and the second	below. Jus	t explain the	6
		Number of Att Attribute Infor 1. sepal lengt	mation: h in cm	neric, pre	edictive attri	butes and	the class.	6.6		
		2. sepal width 3. petal length 4. petal width i 5. class: Iris Setosa	in cm	olour	Iris Virgini	ca			a madanaribes	Fee
2	а	Corruption pe	erception Ind	ex and G	ini Index (m	easures i	nequalities) are	e given for	the following	6
		Country	Hongkong	South Korea	China	Italy	Mongolia	Austria	Norway	
		Corruption Index	77	53	40	47	38	75	85	
		Gini	53.7	30.2	46.2	32.7	36.5	27.6	23.5	ŀ
		index of 38. I	Note: Higher inequality. (I	the Corr Hint: b0	uption index	better th	ruption Percephe transparence an of X, b1 =∑	y. Higher t	he Gini Index	

	L .	Polow are three scatter	nlots (A B C)	and hand-drawn d	ecision bound	aries for logistic	6	
	b	Below are three scatter plots (A, B, C) and hand-drawn decision boundaries for logistic regression. Answer the questions that follow:						
		regression. Answer the qu	cociono ener reme	13			1	
1		7 ×	_ ×/		× 3/			
		××	~ 🛪		~ ×/			
		x x \	× × \	>	X	200		
		X X X	× ×/	x x	× ×(×			
		^x x .\v v	× ^××	XXX	X X	XXX		
The state of		X X X X	×s	XXX	$\times \times$	^ ×		
		х.		\mathbf{x}_4	Α,			
		А		В	C			
		i. Which figure is o	ver-fitting the tra	aining data the mos	st and why?			
		ii. In which model is	s the training erro	or maximum and v	/hy?			
		iii. Which model is r	nore robust than	the other two mod	els and why?			
		1				ta didees	1	
	С	Before you apply regression	on model to a da	ita-set what assump	otions do you	need to validate	? 4	
		What kind of data-cleaning	g can one do? Expl	iain		2.77	4	
	d	Explain the following: (i) Difference between reg	ression and corre	lation				
		(ii) It was found that marr	ied men earn mo	re money by analyz	ng data using	regression mode		
		Can we infer that one shou	Id ant moved to	Cyronom Cryon				
			ild get married to	earn money:				
		Can we inter that one shot	ild get married to	earn money?				
	a				w from a fast	food restaurant.	8	
	а	You are given the transa	action data show	n in the Table belo – order:9) and eac	n transaction i	involves 2-4	8	
	а	You are given the transa	action data show	n in the Table belo – order:9) and eac	n transaction i	involves 2-4	8	
	а	You are given the transa There are 9 distinct trans meal items. There are a t items are names M1-M5	action data shows actions (order: l total of 5 meal ite for simplicity	n in the Table belo – order:9) and eac	n transaction i	involves 2-4	8	
	а	You are given the transa There are 9 distinct trans meal items. There are a t items are names M1-M5	action data show actions (order:1 otal of 5 meal ite	n in the Table belo – order:9) and eac	n transaction i	involves 2-4	8	
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	С	Explain with an example how do you choose nodes to do a split in decision trees. What measures can you use?	6				
4	а	With Example, explain ARIMA(p,d,q) modeling.	6				
	b	How do you detect the different time series components (Trend, Cyclic, Seasonal and Irregular components) in time series data? Explain with a rough sketch of the corresponding graphs	6				
	С	Before conducting time series analysis, we need to consider whether the variables are stationary. What is stationarity? How do you determine if your data is stationary or not? How do you deal with non-stationary series?					
	d	Explain exponential smoothing with an example.	4				
5	a	You have written a research paper and looking for a suitable journal to publish. The only information you have is already published papers in these journals. How do you go about choosing the journal?	6				
	b	Explain with examples difference between synonymy and polysemy	4				
	С	Write an algorithm to help break paragraph into sentences. Test it for the following sentence. Yes, Mr. Anurag. You need a D.L. to drive.	6				
	d	What approach can you use to classify customer feedback as positive and negative?	4				