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Supervised Learning - Week 2

Type : Graded Quiz

Attempts : 1/1

Questions : 10

Time : 20m

Due Date : Oct 31, 2021, 11:59 PM

Your Marks : 8/10

Instructions

The Quiz has 10 questions

Time limit - 20 minutes

You have to complete the quiz to get access to the next module.

IMPORTANT:

- 1. Attempt the Quiz only once you are prepared and have enough time on your hand to finish it. This is to be done before the due date.

 No extension will be provided for it once the deadline is passed.
- 2. Once the Quiz is opened, you must complete it. You CAN NOT start the Quiz, leave it for an extended period of time and then come

- back later to finish.
- 3. Ensure there is a proper internet connection while taking up the Quiz. Any breakup in the connection will automatically submit your Quiz.
- 4. Please note that few Questions shall have multiple answers and all options need to be selected correctly for full marks.
- 5. Please note that the questions can be sourced from videos, reading material and reference links provided for study. Few questions can also be sourced from the concepts whare extensions of the concepts explained in videos. Hence please do ensure a thorough understanding of concepts using all the resources provided for the week.
- 6. If a question has all the options as correct and has "All of these" as one of the options, select "All of these" rather than selecting all the options.
- 7. The mark distribution for multiple answer questions (ie for Questions with more than 1 answer) is explained with an example below. There can be questions with 2 or 3 or all 4 correct answers.
 - For example, a question with 2 correct answers marks will be awarded as follows
 - Full Marks only when both answers are correctly selected.
 - Partial Marks (0.5 marks) In case of selecting only 1 correct answer and no wrong answers are select
 - Aggregation and Net Score is "0" In case of selecting 1 correct answer and 1 wrong answer, there shall be aggregation (-0.5) for the wrong answer and the net score for that question will be zero.
 - o For example, a question with 3 correct answers marks will be awarded as follows
 - Full Marks Only when all the 3 answers are correctly selected.
 - Partial Marks (0.33 or 0.66 marks) In case of selecting only 1 correct answer or 2 correct answers and **no wrong answers** are selected.
 - Aggregation and net Score is "0" In case of selecting all wrong answers or selecting 1 correct answer and 1 wrong answer, there shall be an aggregation of scores (ie +0.33 0.33). Please note the -ve score is a result of the wrong answer.
 Therefore the net score for that question will be zero.
- 8. Any other technical issues if faced on Olympus, please share the screenshot so the team so can understand and solve it on priority.

Regards,

Attempt History

Attempt #1

Oct 31, 2021, 11:58 PM

Q No: 1

Actual

Correct Answer

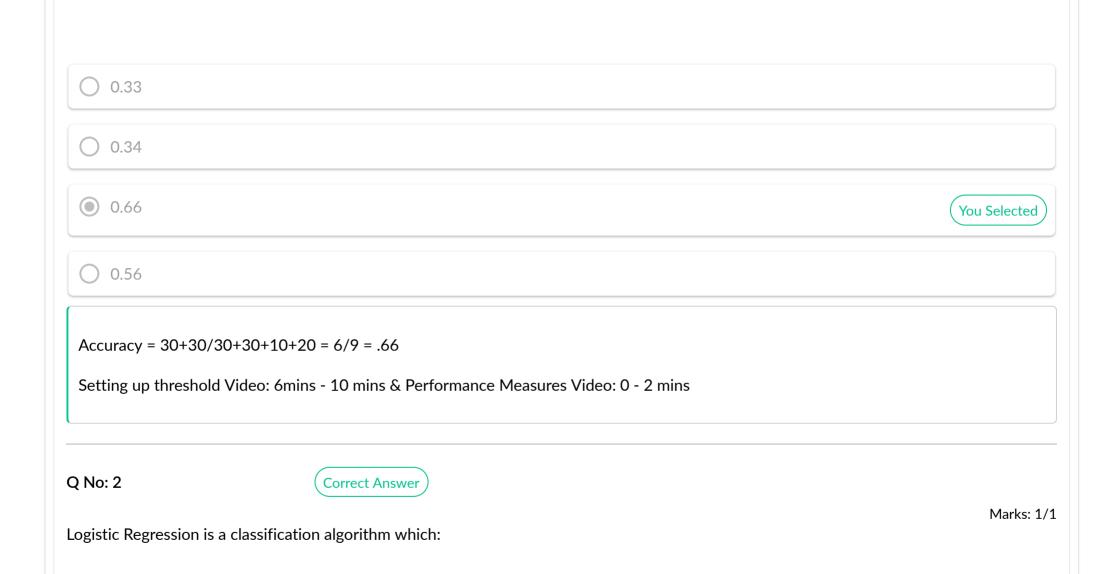
Given the below Confusion Matrix, predict the accuracy

Predicted

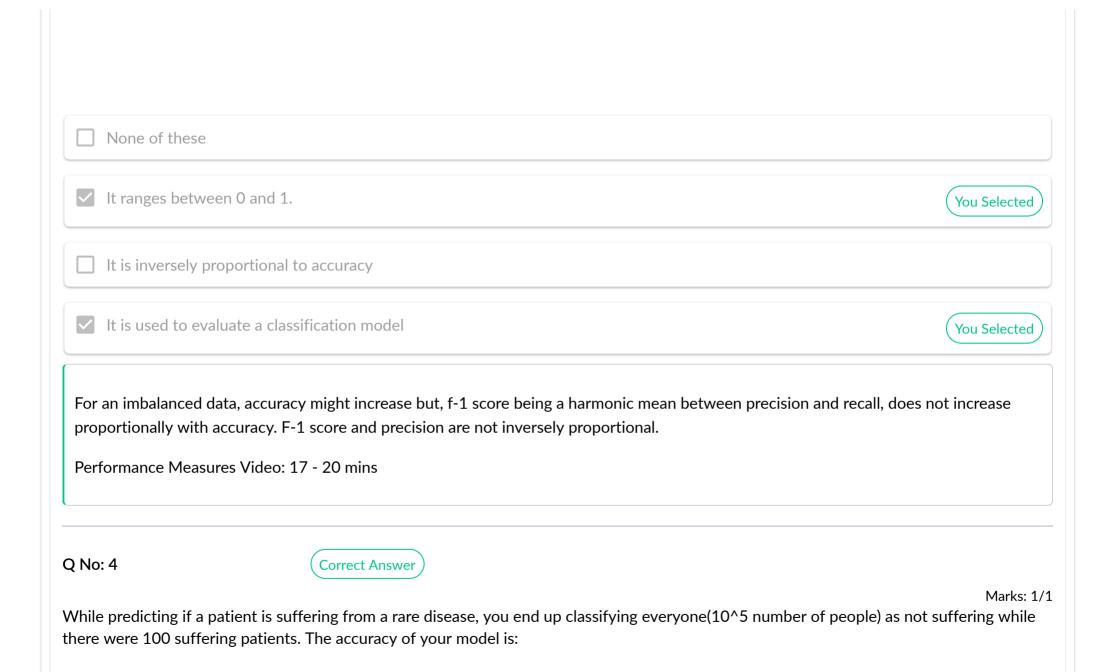
Class	1	0
1	30	10
0	20	30

Marks: 8

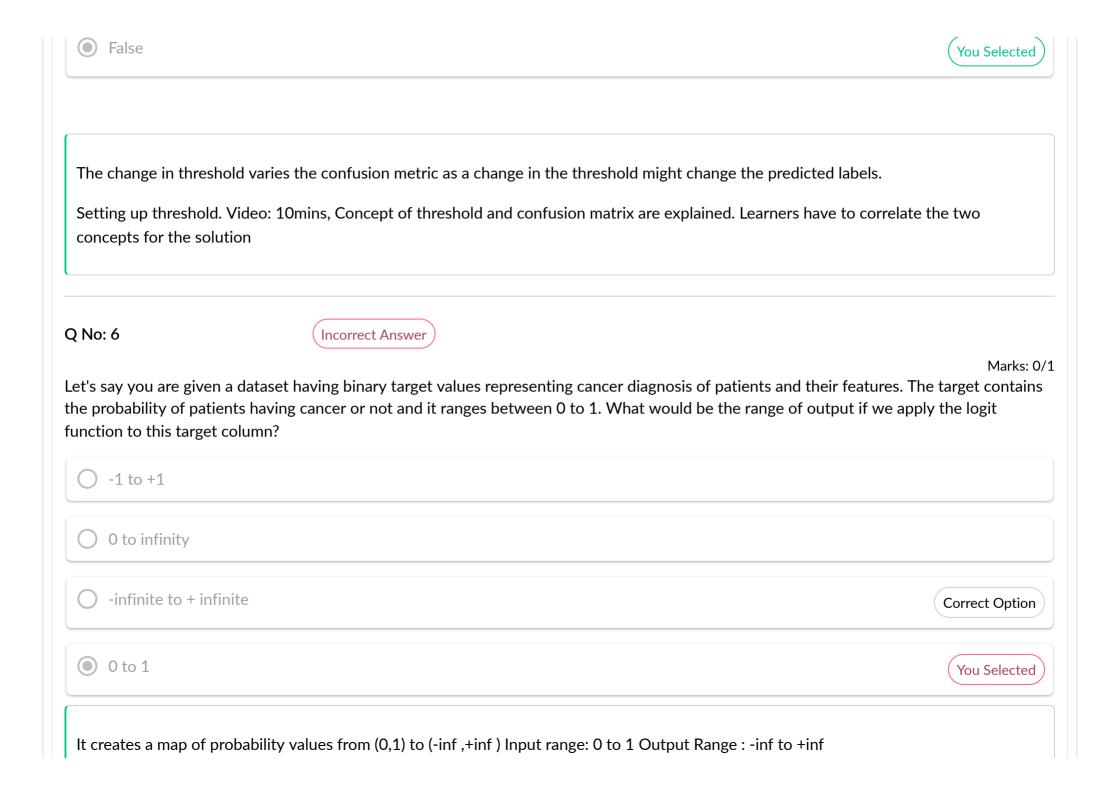
Marks: 1/1

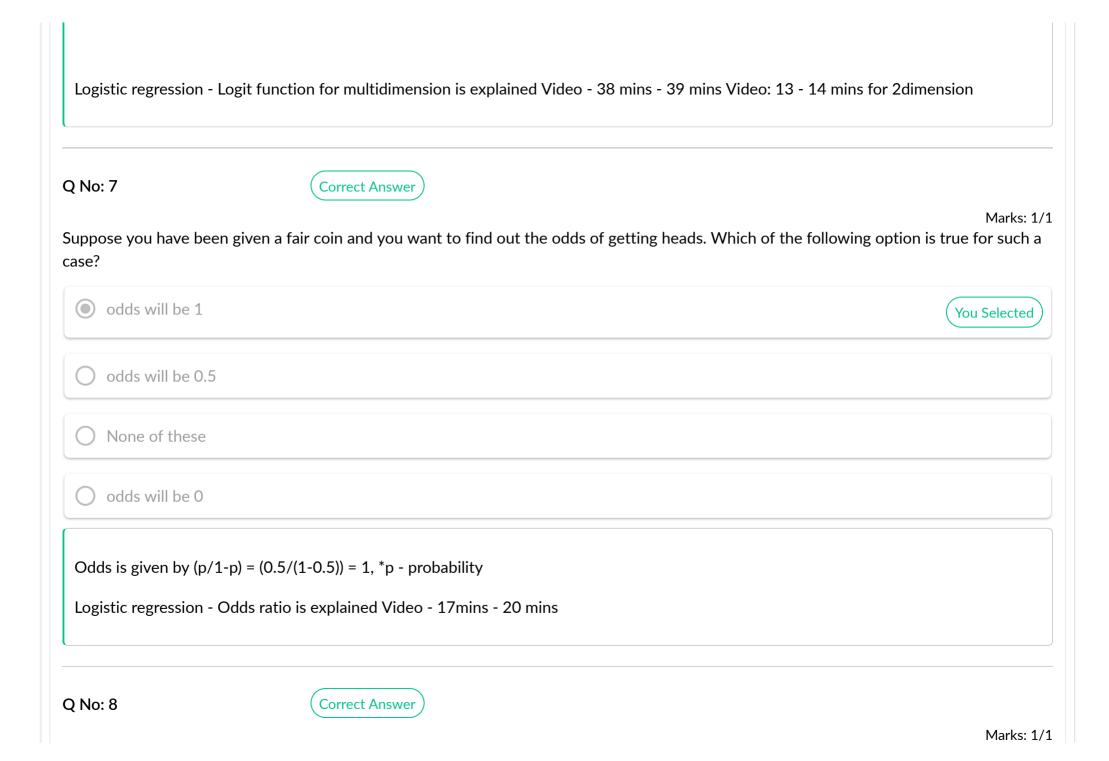


O Directly calculates the labels of the target variable without calculating the probability.
Calculates probabilities using a sigmoid function for the target variable and converts into labels based on a threshold. You Selected
O None of these
Calculates probabilities for the target variable using the equation of a line and converts into labels based on a threshold.
We use logit function in logistic regression and not a straight line, to retrieve probabilities. Logistic Regression Video: 10 mins - 15mins
Q No: 3 Correct Answer Marks: 1/1
Which of the following is true with respect to F-1 score of a model.
Select all that apply



~90%					
~0%					
~50%					
~ 99%					You Selected
Ans: The accuracy is the ratio population(10^5-10, since it is while evaluating your model. Performance Measures Video:	a rare disease), you have v	-			
Q No: 5	Correct Answer				
Increasing the threshold does no	ot change the values in the	confusion matrix of	a model for a given dat	taset.	Marks: 1/1
O True					





Keeping the value of threshold to be very low, say (0.05), what will be the value of True Positive rate(TPR), Fals specificity?	se Positive Rate(FPR) and
O High TPR, Low Specificity	
O High TPR, High Specificity	
High TPR, High FPR, Low Specificity	You Selected
O Low TPR, High Specificity	
For low value of threshold, TPR and FPR will be high & Specificity = 1- TPR, So it will be low Evaluation of models, Video: 15 - 20 mins	
Q No: 9 Correct Answer Which of the following statement about model evaluation metric is NOT True ?	Marks: 1/1

O Precision is the ratio of correctly predicted positive observations to the total predicted positive observations. Performance Measures Video: 0 - 19mins & Evaluation of Models Video - 5: 15mins	
O Procision is the ratio of correctly predicted positive observations to the total predicted positive observations	
Precision is the ratio of correctly predicted positive observations to the total actual positive observations.	You Selected
O Sensitivity is a measure of the proportion of actual positive cases that got predicted as positive	
Specificity is defined as the proportion of actual negatives, which got predicted as the negative	

cancer user ? (Hint: Consider Sigmoid function)

0.087 **Correct Option** 0.97 You Selected 0.25 0.13 Explanation: As given in the question, the function to classify the cancer patient is 0.2 + 0.25*tumor_dia + 1.1*tumor_coarseness In logitstic regression, The probability of a patient with tumour dia 5.5 and tumour coarseness of 0.7 to be a cancer patient is = $1/(1 + e^{-1})$ $(0.2+0.25*5.5+1.1*0.7) = 1/(1+e^{-2.345}) = 1/1.0958 = 0.91257$ As we are asked to find the probability of the patient to be a non-cancer user, it becomes 1- the probability of cancer user therefore, the answer becomes 1-0.91257 = 0.0874 = 0.087 Concept is explained along with the formulas

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