04/03/2024, 14:04 Quiz: Mid-Term Exam

Mid-Term Exam

Started: 4 Mar at 14:02

Quiz instructions

The exam on modules 1, 2, 3, 4, 5, and 6.

The exam will be available on Monday March 04, 2024 from 2:00 PM to 6:00 PM.

You need to answer <u>38 MCQs</u> with 1 point for each + <u>4 Short questions</u> with 3 points for each.

You will have only **75 minutes** to complete your exam in **one sitting**.

••
First Part: MCQs
Question 1 1 pts
Which of the following is not among functionalities (tasks) of data mining?
Clustering
\circ
Classification
\circ
Association
Visualization
Question 2 1 pts
Information is transformed intoto make decisions.
O Data
Data
Information
\cap
File
Knowledge
Question 3 1 pts
Quodilon o 1 pto

Which of the following is not among alternative names of data mining?

Invisible data mining

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resulting data

missing data

testing data

https://unt.instructure.com/courses/102363/quizzes/587511/take

Which of the following is correct formula for accuracy of classifier?

Original dataset

Question 16 1 pts

Accuracy = (FP + FN)/All

Accuracy = (TP + TN)/P	
O Accuracy = (TP + TN)/All	
O Accuracy = N/(TP + TN)	
basic learning methods	
O deductive learning methods	
inductive learning methods	
omprehensive learning methods	
iii Question 18 1 pts	
The F-Measure is equal to zero if all the predictions are	_
The F-Measure is equal to zero if all the predictions are O Partially incorrect	_
\circ	_
O Partially incorrect	
O Partially incorrect O Correct	
Partially incorrect Correct Partially correct Incorrect Question 19 1 pts In data mining, what is the purpose of Interpretation?	
Partially incorrect Correct Partially correct Incorrect Incorrect In data mining, what is the purpose of Interpretation? to express the rules and criteria for easy understanding	
Partially incorrect Correct Partially correct Incorrect Question 19 1 pts In data mining, what is the purpose of Interpretation?	

iii Question 23 1 pts

Which of the following is an advantage of Naïve Bayes classifier?

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Regression

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Question 30 1 pts
All of the following steps are part of Naïve Bayes method except:
Find all the other records where the predictor values are same
Express the probability as the product of p(x1 y) x p(x1 y) p(xn y)
Express the probability as the product of $p(x y) \times p(x y) \dots p(x y)$
Assign that class to the old record D.
Determine what classes they all belong to and which is more prevalent
Question 31 1 pts
Function which is used to bound the probability of x between 0 and 1?
Sigmoid function
○ Sine
Log function
Cosine
Question 32 1 pts
K- Nearest Neighbor Classifier is know as:
Lazy learner
All the three
Instance-based learner
Local classifier
:
Question 33 1 pts
Logistic regression is a regression technique that is used to model data having a

outcome

Linear, numeric

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An instruction to record the data
Question 37 1 pts Why data propressed in a high recommended when using K Negreet Neighbor Classifier?
Why data preprocessing is high recommended when using K-Nearest Neighbor Classifier?
All the three
O To avoid any situation, in which one of the attributes can dominate our distance measure
O To let the classifier handling missing values in both the training and test sets
O Proximity computations normally require the presence of all attributes
iii Question 38 1 pts
Why are K-Nearest neighbor classifiers known as Lazy Learners?
All the three
Oue its characteristics of producing decision boundaries of arbitrary shapes
O Because these classifiers are required to have a data preprocessing
O Since they are modeling the training data until it is needed to classify the test instances
Second Part: Short Questions
Question 39 3 pts
Briefly, describe the steps involved in <i>data mining</i> when viewed as a process of
knowledge discovery.
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12pt \vee Paragraph \vee \mid

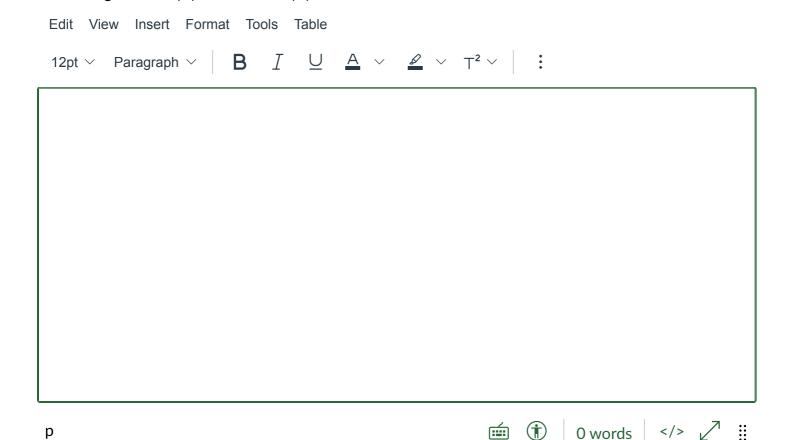
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p

iii

Question 40 3 pts

What do we mean by *pruning* the decision tree? Given a decision tree, you have the option of (a) converting the decision tree to rules and then pruning the resulting rules, or (b) pruning the decision tree and then converting the pruned tree to rules. What advantage does (a) have over (b)?



:: Question 41 3 pts

For the following data set given below, give specific examples of *classification* and *clustering* tasks that can be performed on the data. For each task, state how the *data matrix* should be constructed (i.e., specify the <u>rows</u> and <u>columns</u> of the matrix).

Stock market data, which include the prices and volumes of various stocks on different trading days.

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12pt \vee Paragraph \vee B I $\underline{\cup}$ \underline{A} \vee $\underline{\mathscr{D}}$ \vee \top^2 \vee :

Consider a training set that contains **32 positive** examples and **224 negative** examples. For the of the following candidate rule,

R1: $A \rightarrow +$ (covers 8 positive and 24 negative examples),

Determine its FOIL's information gain.

(Hints: 1) You can type the logarithm of base 2 as Ig.

2)
$$\lg (x/y) = \lg x - \lg y$$
 and $\lg (xy) = \lg x + \lg y$

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