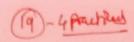


List of Experiments in:

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Date:

S.N.	Title			
_	Title	Page No.	Date	Remarks
1.	Implement and demonstrate the find-5			
	hypothesis based of a given set of training date			
	algo for finding the most specific hypothesis based of a giren set of training date samples. Read the training data from associate.			
2.	Implement			
	Implement and demonstrate the			
	condidate elimination algorithem.			
3.	Implement & demonstrate the sup-			
	ervised machine learning algorithem			
	Decision trees			
4-	Implementation of k-negrest			
	heighbours (KNNS on Synthetic			
	data using python.			
5.	Implementation of simple and			
	multiple linear regression using python.			
1)				

This is to Certify that, the experiments mentioned above were executed within the four walls of Institute by _____

Lecture-in-Charge

Head of Department

Principal



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Experiment No. 1.

Aim: - Implement and demonstrate the FIND-5 algorithem for finding the most specific hypothesis based on a given set of training data samples.

Read the training data from a . Esv file.

Theory :-

Introduction to find-5 algorithem:

The find-5 algorithem is a search

algorithem designed to efficiently search through
a sorted list of data elements to find the

index of a specific target element. The acronym

finds Stonds for "fast Index-based non-recursive

piscrete search." This algorithm works by recursively

dividing the search space into smaller and smaller

subspaces until the target element is found or it is

determined that the element does not exist in the

list.

The finds algorithm is particularly useful when searching through large sorted datasers, where linear search algorithms would be I too slow. This algorithm has a time complexity of O(lagn), which means that it can efficiently search through datasets with millions or even billions of elements in a reasonable amount of time.



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	The FINDS algorithem is widely used in
	computer science and is particularly important
	The fields of databose monagement and inform
	retrival, where efficient search algorithm are
	reterval, where managing and averying large
	essential for managing and querying large
	datasets.
	Dotaset pescription:
	The FINDS algorithem is not a
	dataset, but rather a search algorithem design
	to search through sorted datasets. The algoring
l	works by recursively to dividing the search spec
	into smaller and smaller subspaces until the
	target element is found or it is determined
	the element does not exist in the list.
	To use the FINDS algorithm, you
	would need a sorted dataset to search through
	as it is designed specially for searching through
	sorted list of data elements. The dataset
	is a date date in the sourced, su
	be any type of data that can be sorted, su
0	as numerical data, text data, or any other
	of structured data.
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conclusion: FINDS algorithem is a fost and efficient search algorithem that is designed search through sorted lists of data elements. By dividing the search space into smaller and smaller subspaces, the algorithem can quickly the index of a larget plement, even large datasets, overall, understanding the algorithm can be very beneficial for computer science students and professionals, as it can be used to aptimize and speed up a wide range of search and retrieval tasks.



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Experiment No. 02

Aim: - Implement and demonstrate the decision condiate elimination algorithm.

theory :-

candidate elimination is a process used in machine learning to namow down the set of potential algorithms that can be used to solve a particular problem. It involves evaluating each candidate algorithm against a set of criteria, and eliminating that se that do not meet the criteria. The criteria used for candidate elimination may vary depending on the specific problem being addressed, but typically include factors such as the algorithems! accuracy, computational officiency, scalability, interpretability, and ease of implementation. These factors are often primitized based on the specific requirements of the publican and the available data.

a set of potential algorithms is identified based on their ability to solve similar problems on their suitability for the appeific problem being addressed, each algorithem is then evaluated against the criteria, and those do not meet the criteria are eliminated from consideration.



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The remaining candidate algorithems further evaluated and compared using per nce metrices such as accuracy, paecision, reco and f2 gove. the algorithm with the best performance on the training and testing day then chosen as the final model. condidate elimination is on impos step in the machine learning process as helps to nomow down the set of patential algorithms and identify the most suitable of for a particular problem. By carefully and and comparing the available aptions, it is a to choose an algorithem that can offeotively The problem at hand. pataset pescription: - Variate and I A dataset is a collection of data is u

for analysis, modelling, and machine learning nechine learning, a data set typically consi of a set of input features and a corresspo forget vonable, which is the variable that the

algorithem is trying to predict.



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		I Wallet
	conclusion: - condidate elimination is an	en
	essential step in the marking loaming	noncess
	essential step in the machine learning. 95 it helps to norrow down the set of pot	or tial
	al con them = and identify	n II a
	for a particular problem.	le aption
	Tor a paracular problem.	
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Experiment No. 3

Aim: - Implement and demonstrate the supervised machine learning algorithm

pecision - trees.

theory: - pecision tree is a Supervised

learning technique that can be used for both

classification and Regression problems, but mostly

it is preffered for solving classification problems

but mostly it is preferred for solving classification problems. It is a tree structured classification problems.

The pecision tree, there are two nades, which are the pecision nade and leaf node. Decision nodes are used to make any decision and have multiple branches, whereas leaf nodes are the output of those decisions and do not contain any further branches.

The decisions or the test are the performed on the basis of features of the given dataset.



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Data

getting all the possible solutions to a see decision based on given conditions.

It is called a decision tree because similar to a tree it storts with the node, which expands on further branche constructs a tree-like structure

In order to build a tree, we uso (ART algorithem, which stands for classic and pegression tree algorithem.

A decision tree simply asks a question based on the answer (yes/NO), it further the tree into subtrees.

Entrophy :-

Entrophy is nothing but the uncertains our detaset or measure of disorder. Let try to explain this with the help of an eron suppose you have a group of friends decides which movie they can watch together on sunday. there are 2 choices for movies is "Lucy" and the second is "titanic" and he everyone has to tell their choice. After every gives their onswer we see that "Lucy" gets votes and "titanic" gets 5 votes.



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	Lille's hard
	which movie do we watch now ? ishl+ it hard
	to choose & I movie now ? because the votes
	for both the movies are somewhat equal.
	This is exactly what we call disorderness,
	Here is an equal number of votes for
	mormories, and we cont really decide which
	movie we should watch it would have been much
_	easier if the votes for "Lucy" were 8 and for
_	"ITITIONIC" It was 2. Here we could easily say that
	the majority of votes are for "Lucy" hence
	everyone will be watching this movie.
	The state of the s
	Information gain measures the
	reduction of uncertainty given some features
	and it is 'also a deciding factor for which
	attribute should be selected as a decision node
	or root node.



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Date :	
conclusion.	
elen Implemented and demonstrated the	
Machine la and demonstrated the	1
Machine learning algorithm decision tree.	