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Zero Lab.

Introduction of machine learning :→

Machine Learning is a subnet of artificial learning where computer learn from data to make prediction or decision without explict programming, improve their perfarmance with experience.

Types of Machine Learning :

(i) Superwise Learning :→ learning from labell data.

(ii) Unsuperwise learning :→ discover pattern in unlabel data.

(iii) Rainforest learning :→ learning through trial and ~~over~~ error where an agent receiver a reward for positive action and penentilies for negative actions. In Machine learning lab we will gain practical experience in data preparation model building, evaluation and interpreting result.

package required to run the program :→

math, numpy, pandas, matplotlib, sklearn

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Software :- Googlecollab , anaconda.

Python libraries :- In python programming language, we will use python standard like numpy, scipy, pandas, etc.

A python library is a reusable block of code that we may want to include in our programs. library. is a collection of module. They can be use by importing them at the begning of a script.

To use mathematical function we import math library mathematical function like :- factorial, floor, exponential, square etc.

Numpy :- Numpy is an open source library availiable in python that use in mathematical, scientific, engineering, data science. It work perfectly for multi dimen-sional array and matrix multiplication.

Pandas :- The primary two components of pandas are

(i) series
(ii) data farm

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a series is essentially a column and a dataset is a multidimensional table made a perfect series collection.

Output :-

array([['?', 'Sunny', '?', 'Yes', '?', '?'], dtype=obj

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Experiment -1

- Objective :- Implement and demostrate the find S algo for finding the most specific hypothesis based on a given dataset of training data sample.
- Code :-

```
impart numpy as np
impart pandas as pd

df = pd.read excel ('/content/ finds_algo.xlsx')
df.head(5)

d = np.array [df] [:, :-1]
d
target = np.array [df] [:, -1]
target

dif train [c, t]:
for i, val in enumerate (t):
  if val == "Yes":
specific hypo = c [i].copy()
break;
for i, val in enumerate (c):
if (t [i] == "Yes"):
for x in range (len (specific_hypo)):
if [val [x] != specific_hypo [x]):
Specific hypo [x] = '?'
```

```
else :
pass
return specific hypo

s = train (d, target)
s
```

Output :

array.[[107.6]]

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Experiment - 2

- Objective - Implement a linear regression mode that predict fahrenheit Temperature based on centigrade temperature.
- Code :-

```
import numpy as np
import pandas as pd
from sklearn.model_selection import
train_test_split
from sklearn.~~tree~~ linear_model import
LinearRegression

#Data preparation
data = {'Centigrate': [0, 24, 10, 19, 56, 32, 46, 28,
30, 51], 'fahrenheit': [32, 75.2, 50, 66.2, 132.8,
89.6, 114.8, 82.4, 86, 123.8]}
df = pd.DataFrame(data)
X = df[['Centigrate']]
Y = df[['fahrenheit']]

#Model Training
X_train, X_test, Y_train, Y_test = train_test_split(X,
                    Y, test_size = 0.2, random_state = 123)
lin = LinearRegression() #Define the linear regression
model
linfit = lin.fit(X_train, Y_train)# Train the model
```

```
# Prediction
prediction = lin.predict([[42]]) # Now 'lin' is
defined and trained
print(prediction).
```

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Evaluation Report

Name of the Laboratory: Machine Learning Lab

Code: 6CC84-22

To be filled by the student						To be filled by the faculty			
S.No.	Name of the experiment	Pg. No.	Date of Allotment	Date of Performance	Attendance (2)	Record* (3)	Performance** (5)	Total (10)	Signature of Faculty With Date
1.	Zero Lab		16-1-25	16-1-25.					
2.	Experiment - 1 Implement Find S		16-1-25	16-1-25					
3.	Experiment - 2 Linear Regression		16-1-25	16-1-25					
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18.									
19.									
20.									

* Preparation & Lab record

** Overall Quality of Performance, Knowledge about application of experiment, Technical details of equipments, Process & Theory involved in practical & Viva-voce

Max. Marks :.....Marks Obtained.....Average.....