

Started on	Monday, 1 July 2024, 3:20 PM
State	Finished
Completed on	Monday, 1 July 2024, 3:27 PM
Time taken	7 mins 9 secs
Grade	9.50 out of 10.00 (95%)

Question **1**

Complete

Mark 1.00 out of 1.00

In what applications can we use Machine Learning? Select all that are correct.

- ☒ Application to find out if an image contains a Cat or a Dog from a collection of images of Cats and Dogs
- ☒ Finding out which post should be shown to a particular customer on Facebook
- ☒ Recognizing characters
- ☒ In predicting the weather for tomorrow

Question **2**

Complete

Mark 1.00 out of 1.00

We can get Machine to Learn to accomplish (do) a task by giving it sample data about the task.

Select one:

- ☒ True
- ☐ False

Question **3**

Complete

Mark 0.50 out of 1.00

Why do we need Machine Learning? Select all answers that are correct.

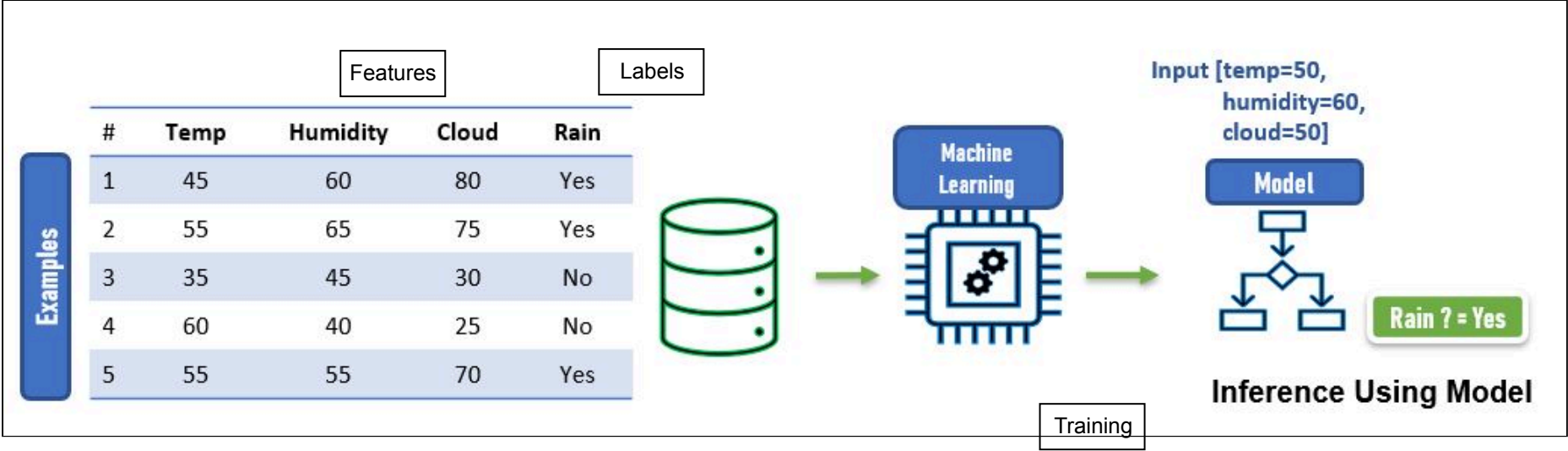
- ☒ Because we do not have data available about certain events.
- ☒ In certain cases it is very hard and tedious and nearly impossible to find a set of rules or a logic to separate images.
- ☐ Because programmers are lazy to write code
- ☒ In certain cases even if we write a logic and code to separate a set of objects a slightly different object may not be identifiable from our logic.

Question 4

Complete

Mark 1.00 out of 1.00

Drag and drop the labels to complete the diagram regarding the terms and definitions used in Machine Learning.

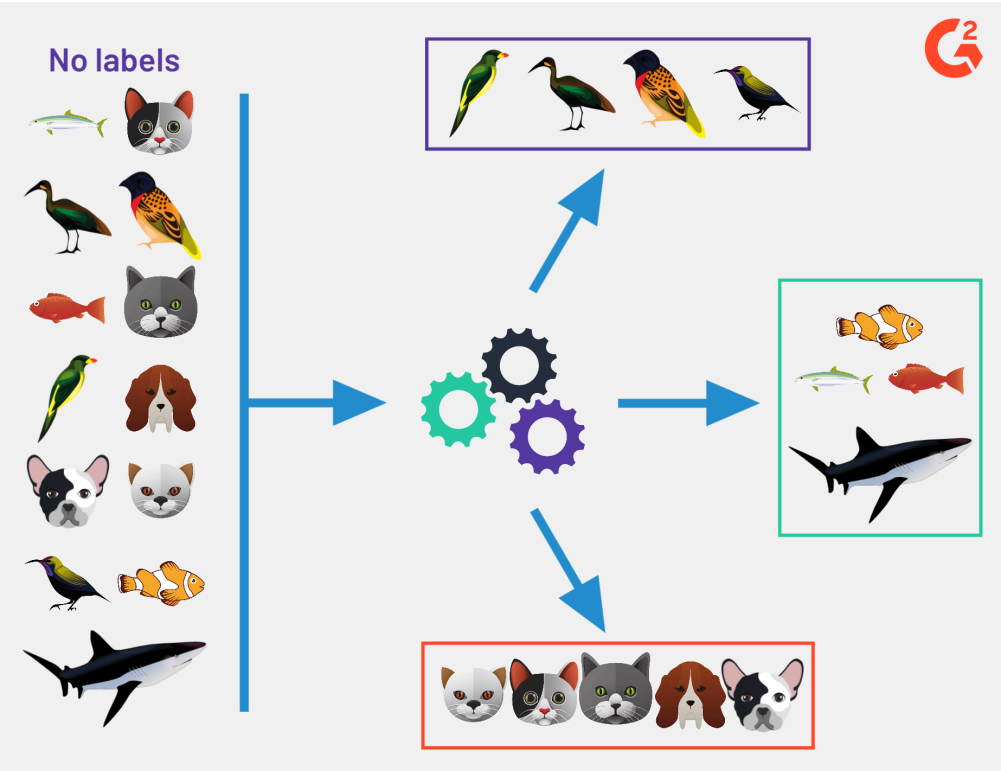


Question 5

Complete

Mark 1.00 out of 1.00

If a Machine Learning Algorithm is separating a group of unlabelled animals into 3 separate groups as shown in the diagram,



what type of learning is taking place?

- ☐ Supervised Learning
- ☒ Un-supervised Learning
- ☐ Classification Learning
- ☐ Transfer Learning
- ☐ Reinforcement Learning

Question **6**

Complete

Mark 1.00 out of 1.00

What types of Machine Learning activities are supported by Python libraries that are available?

- ☒ Computing Statistics
- ☒ Building Machine Learning Models
- ☒ Data Visualizing
- ☒ Data Loading

Question **7**

Complete

Mark 1.00 out of 1.00

Match the Machine Learning activity with the most suitable Python Librarary

Drawing a line graph to show the variation of temperature

matplotlib

Loading the temperature, humidity, and cloud cover data into a multi-dimentional array.

NumPy

Building a Machine Learning model to forecast the weather.

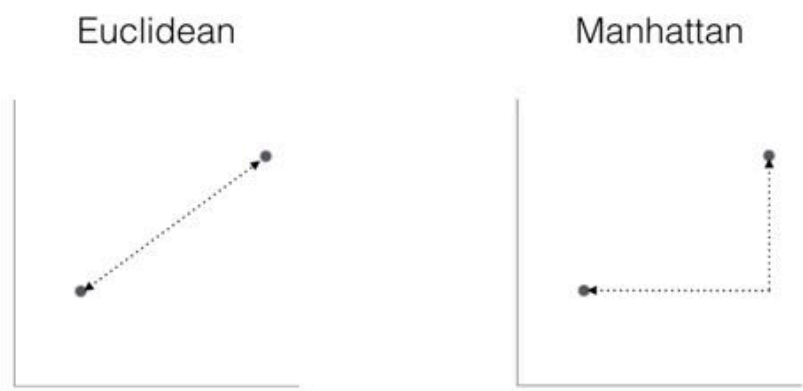
SciKit Learn

Question 8

Correct

Mark 3.00 out of 3.00

Modify the given code to label an unknown pair of new temperature and humidity values to whether it is going to rain or not based on the training examples given. The code given is using a simple distance calculation named Manhattan distance to find out how close it is to each group. You need to improve the code to use Euclidean distance as discussed in the course notes to pass all the test cases in this exercise.



For example:

Input	Result
30 30	NO RAIN
75 75	RAIN

Answer: (penalty regime: 0 %)

Reset answer

```
1 import math
2
3 # Unknown new data point that needs to be labeled for rain or no rain
4 new_data_rain = int(input())
5 new_data_humidity = int(input())
6
7 # Training Data Examples for rain and no_rain
8 rain_temp, rain_humidity = [45,55,55], [60,65,55]
9 no_rain_temp, no_rain_humidity = [35,50,40], [45,30,35]
10
11 # Euclidean distance based approach to label the unknown new data point
12 rain = 0
13 no_rain = 0
14 sz = len(rain_temp)
15
16 for i in range(sz):
17     rain += math.sqrt((rain_temp[i] - new_data_rain)**2 + (rain_humidity[i] - new_data_humidity)**2)
18     no_rain += math.sqrt((no_rain_temp[i] - new_data_rain)**2 + (no_rain_humidity[i] - new_data_humidity)**2)
19
20 # Print the label of unknown new data point based on the total distance to each group
21 if rain < no_rain:
22     print("RAIN")
23 else:
24     print("NO RAIN")
```

	Input	Expected	Got	
✓	50 50	RAIN	RAIN	✓
✓	45 45	NO RAIN	NO RAIN	✓

	Input	Expected	Got	
✓	30 30	NO RAIN	NO RAIN	✓
✓	75 75	RAIN	RAIN	✓
✓	51 46	RAIN	RAIN	✓
✓	50 75	RAIN	RAIN	✓
✓	50 47	RAIN	RAIN	✓

Passed all tests! ✓

Correct

Marks for this submission: 3.00/3.00.

◀ 5.1 Intro to Machine Learning

Jump to...

5.2 Your First ML Project - Part 1 (Data Exploration) ▶

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