

## Feature Scaling Questions:

### Feature Scaling

#### MCQ Questions

1.

##### Feature Scaling Class Choice

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In which class of Machine Learning problems output should be scaled along with the input features?

##### Options

This problem has only one correct answer

- ☐ Classification problems
- ☐ Regression problems
- ☐ Both of these
- ☒ None of these
- ☒ Hurray! Correct Answer

##### Solution Description

Explanation: In the classification problem, output variables are discrete so there is no need to normalize it. In the regression problem, scaling the output does not have any effect on the shape of the function. So, only input features should be scaled and not the output variable.

Attempts left: **0/2**

2.

##### Min Max Scaling

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What is the result of the following data points after MinMax scaling between (0,1) ?

40 10 100 70 40

Note:

1. Enter space separated numbers.
2. there isn't space after last number.
3. Input Decimal numbers upto two decimal places only and don't round off numbers. E.g. if number is 0.777 then type 0.77.

##### Answer

0.33 0 1 0.66 0.33



Correct Answer

3.

### Ans MinMax Scaling

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What is the result of the following data points after MinMax scaling between (5,20)?

40 10 100 70 40

(Enter space-separated numbers in the blank)

(Round off the output to closest integer value.)

### Answer

10 5 20 15 10



Correct Answer

### Hint:

1. Find the minimum and maximum values in your data set:

- Minimum: 10
- Maximum: 100

2. Use the MinMax scaling formula for each data point (x):

- $\text{scaled\_x} = (x - \text{min}) / (\text{max} - \text{min})$

Let's calculate the scaled values for your data points:

- For 40:

$$\text{scaled\_40} = (40 - 10) / (100 - 10) = 30 / 90 = 1/3$$

Now, you want to scale these values to the range between 5 and 20:

- Scaled 1/3 to the new range:

$$\text{scaled\_value} = (1/3) * (20 - 5) + 5$$

$$\text{scaled\_value} = (1/3) * 15 + 5$$

$$\text{scaled\_value} = 5 + 5 = 10$$

# Feature Scaling in Sklearn

## MCQ Questions

1.

Problem

Result

### Sklearn Feature Scaling

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Which of the following present in sklearn is used for feature scaling?

**Options**

Attempts left: 1/2

This problem has only one correct answer

- ☐ Pipeline
- ☒ Preprocessing
- ☐ Ensemble
- ☐ Preprocessor
- ☒ Hurray! Correct Answer

2.

Problem

Result

### Sklearn Preprocessing Default

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Which of the following does sklearn.preprocessing do by default

**Options**

Attempts left: 1/2

This problem may have one or more correct answers

- ☒ scale the data to unit variance✓
- ☐ inplace scaling
- ☒ center the data before scaling✓
- ☐ None of the above
- ☒ Hurray! Correct Answer

3.

Problem

Result

### Sklearn Output

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What should be the output of the following (in terms of zero or non-zero):

```
1 import numpy as np
2 from sklearn.preprocessing import StandardScaler
3 data = [[0, 3], [9, 4], [2, 7], [1, 1]]
4 scaler = StandardScaler()
5 scaler.fit(data)
6 first = scaler.transform(data)
7 second = scaler.transform([[2, 13], [1, 4], [10, 7], [1, 9]])
8 print(first.sum())
9 print(second.sum())
```

**Options**

Attempts left: 0/2

This problem has only one correct answer

- ☒ 8th line: zero, 9th line: non-zero
- ☐ 8th line: non-zero, 9th line: non-zero
- ☒ 8th line: non-zero, 9th line: zero
- ☐ 8th line: zero, 9th line: zero

The solution to this problem has been viewed