What is the range in R and how is it calculated? Can you provide examples?

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April 21, 2024

The range in R refers to the difference between the highest and lowest values in a dataset. It is calculated by subtracting the lowest value from the highest value. For example, if a dataset consists of the numbers 2, 4, 6, 8, and 10, the range would be 10 - 2 = 8. In R, the range can also be calculated using the "range()" function, which returns a vector containing the minimum and maximum values in the dataset. This value is useful for understanding the spread of data and identifying any outliers.

Find the Range in R (With Examples)

The range is the difference between the largest and the smallest value in a dataset.

We can use the following syntax to find the range of a dataset in R:

```
data <- c(1, 3, NA, 5, 16, 18, 22, 25, 29)

#calculate range
max(data, na.rm=TRUE) - min(data, na.rm=TRUE)
```

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And we can use the range() function in base R to display the smallest and largest values in the dataset:

```
data <- c(1, 3, NA, 5, 16, 18, 22, 25, 29)

#calculate range values
```

range(data, na.rm=TRUE)

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This tutorial shows several examples of how to calculate the range of datasets in R.

Measures of Dispersion in Statistics

Example 1: Calculate the Range of a Single Variable

The following code shows how to calculate the range of a single variable in R:

```
#create data frame
df <- data.frame(x=c(1, 3, NA, 5, 16, 18, 22, 25),
y=c(NA, 4, 8, 9, 14, 23, 29, 31),
z=c(2, NA, 9, 4, 13, 17, 22, 24))

#find range of variable x in the data frame
max(df$x, na.rm=TRUE) - min(df$x, na.rm=TRUE)
```

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Example 2: Calculate the Range of Multiple Variables

The following code shows how to calculate the range of

multiple variables in R:

```
#create data frame
df <- data.frame(x=c(1, 3, NA, 5, 16, 18, 22, 25),
y=c(NA, 4, 8, 9, 14, 23, 29, 31),
z=c(2, NA, 9, 4, 13, 17, 22, 24))

#find range of variable x and y in the data frame
sapply(df, function(df) max(df, na.rm=TRUE) - min(df,
na.rm=TRUE))

x y
24 27

#find range of all variables in the data frame
sapply(df, function(df) max(df, na.rm=TRUE) - min(df,
na.rm=TRUE))

x y z
24 27 22
```


Related A Guide to apply(), lapply(), sapply(), and tapply() in R

Example 3: Calculate the Range of Entire Data Frame

The following code shows how to calculate the range of all values in a data frame:

```
#create data frame
df <- data.frame(x=c(1, 3, NA, 5, 16, 18, 22, 25),
y=c(NA, 4, 8, 9, 14, 23, 29, 31),
z=c(2, NA, 9, 4, 13, 17, 22, 24))

#find range of all values in entire data frame
max(df, na.rm=TRUE) - min(df, na.rm=TRUE)

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```