How do you use the INDEX Function in SAS (With Examples)?

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The INDEX function in SAS is used to look up a value in an array and return the position (index) or element of the array or data set. It is useful for when you need to find the position of a value in a data set. For example, you can use the INDEX function to find the position of a particular value in a character array. To do this, you would use the syntax: INDEX(array, 'value_to_find'). This would return the index of the value in the array. You can also use the INDEX function to look up the element of an array or data set. To do this syntax, you would use: INDEX(array, index_to_find). This would return the element at the specified index of the array.

You can use the **INDEX** function in SAS to return the position of the first occurrence of a string within another character string.

This function uses the following basic syntax:

INDEX(source, excerpt)

where:

source: The string to analyze
excerpt: The string of characters to search for within *source*

The following example shows how to use this function in practice.

Example: Using the INDEX Function in SAS

Suppose we have the following dataset in SAS that contains a column of names:

```
/*create dataset*/
data original_data;
input name $25.;
datalines;
Andy Lincoln Bernard
Barren Michael Smith
Chad Simpson Arnolds
Derrick Smith Henrys
Eric Millerton Smith
Frank Giovanni Goode
;
run;

/*view dataset*/
proc print data=original_data;
```

Obs	name
1	Andy Lincoln Bernard
2	Barren Michael Smith
3	Chad Simpson Arnolds
4	Derrick Smith Henrys
5	Eric Millerton Smith
6	Frank Giovanni Goode

We can use the **INDEX** function to search for the position of the first occurrence of the string "Smith" in each row:

```
/*find position of first occurrence of 'Smith' in name*/
data new_data;
set original_data;
first_smith = index(name, 'Smith');
run;

/*view results*/
proc print data=new_data;
```

Obs	name	first_smith
1	Andy Lincoln Bernard	0
2	Barren Michael Smith	16
3	Chad Simpson Arnolds	0
4	Derrick Smith Henrys	9
5	Eric Millerton Smith	16
6	Frank Giovanni Goode	0

The new column called **first_smith** displays the position of the first occurrence of the string 'Smith' in the **name** column.

If 'Smith' is not found at all, the **INDEX** function simply returns a value of **0**.

It's important to note that the **INDEX** function is case-sensitive, so if you search for 'smith' instead, the **INDEX** function will return **0** for each string:

```
/*find position of first occurrence of 'smith' in name*/
data new_data;
set original_data;
first_smith = index(name, 'smith');
run;

/*view results*/
proc print data=new_data;
```

Obs	name	first_smith
1	Andy Lincoln Bernard	0
2	Barren Michael Smith	0
3	Chad Simpson Arnolds	0
4	Derrick Smith Henrys	0
5	Eric Millerton Smith	0
6	Frank Giovanni Goode	0

To perform a case-insensitive search, you can use the function to first convert each string to all lowercase and then search for 'smith' as follows:

```
/*find position of first occurrence of 'smith' in name*/
data new_data;
set original_data;
first_smith = index(lowcase(name), 'smith');
run;

/*view results*/
proc print data=new_data;
```

Obs	name	first_smith
1	Andy Lincoln Bernard	0
2	Barren Michael Smith	16
3	Chad Simpson Arnolds	0
4	Derrick Smith Henrys	9
5	Eric Millerton Smith	16
6	Frank Giovanni Goode	0

By first converting each string to all lowercase, we're able to use the **INDEX** function to perform a case-insensitive search.

The following tutorials explain how to use other common functions in SAS: