



Python | Pandas DataFrame.isin()



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Python is a great language for doing data analysis, primarily because of the fantastic ecosystem of data-centric python packages. **Pandas** is one of those packages and makes importing and analyzing data much easier.

Pandas `isin()` method is used to filter data frames. `isin()` method helps in selecting rows with having a particular(or Multiple) value in a particular column.

Syntax: `DataFrame.isin(values)`

Parameters:

values: *iterable, Series, List, Tuple, DataFrame or dictionary to check in the caller*

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Return Type: *DataFrame of Boolean of Dimension.*

Example #1: Single Parameter filtering

In the following Example, Rows are checked and a boolean series is returned which is True wherever Gender="Male". Then the series is passed to data frame to see new filtered data frame.

```
# importing pandas package
import pandas as pd

# making data frame from csv file
data = pd.read_csv("employees.csv")

# creating a bool series from isin()
new = data["Gender"].isin(["Male"])

# displaying data with gender = male only
data[new]
```

Output:

As shown in the output image, only Rows having gender = "Male" are returned.

	First Name	Gender	Start Date	Last Login Time	Salary	Bonus %	Senior Management	Team
0	Douglas	Male	8/6/1993	12:42 PM	97308	6.945	True	Marketing
1	Thomas	Male	3/31/1996	6:53 AM	61933	4.170	True	NaN
3	Jerry	Male	3/4/2005	1:00 PM	138705	9.340	True	Finance
4	Larry	Male	1/24/1998	4:47 PM	101004	1.389	True	Client Services
5	Dennis	Male	4/18/1987	1:35 AM	115163	10.125	False	Legal
12	Brandon	Male	12/1/1980	1:08 AM	112807	17.492	True	Human Resources
13	Gary	Male	1/27/2008	11:40 PM	109831	5.831	False	Sales
16	Jeremy	Male	9/21/2010	5:56 AM	90370	7.369	False	Human Resources
17	Shawn	Male	12/7/1986	7:45 PM	111737	6.414	False	Product
21	Matthew	Male	9/5/1995	2:12 AM	100612	13.645	False	Marketing
23	NaN	Male	6/14/2012	4:19 PM	125792	5.042	NaN	NaN
24	John	Male	7/1/1992	10:08 PM	97950	13.873	False	Client Services
25	NaN	Male	10/8/2012	1:12 AM	37076	18.576	NaN	Client Services

Example #2: Multiple parameter Filtering

In the following example, the data frame is filtered on the basis of Gender as well as Team. Rows having Gender="Female" and Team="Engineering", "Distribution" or "Finance" are returned.

```
# importing pandas package
import pandas as pd
```

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```
data = pd.read_csv("employees.csv")

# creating filters of bool series from isin()
filter1 = data["Gender"].isin(["Female"])
filter2 = data["Team"].isin(["Engineering", "Distribution", "Finance" ])

# displaying data with both filter applied and mandatory
data[filter1 & filter2]
```

Output:

As shown in the output image, Rows having Gender="Female" and Team="Engineering", "Distribution" or "Finance" are returned.

	First Name	Gender	Start Date	Last Login Time	Salary	Bonus %	Senior Management	Team
2	Maria	Female	4/23/1993	11:17 AM	130590	11.858	False	Finance
7	NaN	Female	7/20/2015	10:43 AM	45906	11.598	NaN	Finance
8	Angela	Female	11/22/2005	6:29 AM	95570	18.523	True	Engineering
14	Kimberly	Female	1/14/1999	7:13 AM	41426	14.543	True	Finance
30	Christina	Female	8/6/2002	1:19 PM	118780	9.096	True	Engineering
50	Nancy	Female	9/23/2000	8:05 AM	94976	13.830	True	Engineering
54	Sara	Female	8/15/2007	9:23 AM	83677	8.999	False	Engineering
58	Theresa	Female	4/11/2010	7:18 AM	72670	1.481	True	Engineering
59	Irene	Female	5/7/1997	9:32 AM	66851	11.279	False	Engineering
67	Rachel	Female	8/16/1999	6:53 AM	51178	9.735	True	Finance
76	Margaret	Female	9/10/1988	12:42 PM	131604	7.353	True	Distribution
84	Doris	Female	8/20/2004	5:51 AM	83072	7.511	False	Finance

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