

A C# LINQ one-liner to check if exactly one of a set of conditions is met

 devblogs.microsoft.com/oldnewthing/20240226-00

February 26, 2024



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I was writing a tool that needed to check whether exactly one of a list of conditions was true. One way of doing this is to count them manually:

```
bool DoesExactlyOneConditionApply(DataSet data)
{
    int count = 0;
    if (data.Widgets.Count == 1)
    {
        ++count;
    }
    if (data.Gadgets.Count == 1)
    {
        ++count;
    }
    if (data.Doodads.Count > data.Sockets.Count)
    {
        ++count;
    }
    if (data.Approvers.Contains(Approver.Director))
    {
        ++count;
    }
    return count == 1;
}
```

This works and is efficient, but is rather wordy and susceptible to copy/pasta bugs.

Performance was not an issue in this code because most of the time was being spent in calculating the DataSet, not in checking whether conditions apply.

Here's what I came up with:

```
bool DoesExactlyOneConditionApply(DataSet data)
{
    return new[] {
        data.Widgets.Count == 1,
        data.Gadgets.Count == 1,
        data.Doodads.Count > data.Sockets.Count,
        data.Approvers.Contains(Approver.Director),
    }.Count(v => v) == 1;
}
```

This builds a temporary array that holds the results of each test, and we ask LINQ to tell us how many of them are `true`.