

Ethics Preamble

The following survey is being conducted by Luca Davies as a student of Lancaster University in pursuit of completion of module SCC.421: Fourth Year Project.

The data you provide will be collected and handled in line with GDPR and will be used for the lawful purpose of research in accordance with safeguards. For more information, please see the university website [here](#).

If you have any question regarding the research itself, please email l.davies7@lancaster.ac.uk.

Preamble

This survey is aimed at gathering the thoughts and opinions of programmers and software developers on certain more "advanced" constructs and patterns available for use in some programming languages such as C#, JavaScript, and Java. A knowledge of all three of these languages is *not* necessary for participation.

The constructs being examined are:

- In-line If / Ternary Statements
`a ? b : c`
- Lambda Expressions
`(a) => {...}`
- Null-coalesce and Null-conditional Operators
`a ?? b`
`a?.b`
- Foreach loops
`foreach (obj a in b) {...}`
`for (obj a : b) {...}`
- Unary Increment Operators
`a++`

- a --
- Compound assignment Operators
- a += 5
- a -= 8
- etc...

Experience

How many years of programming experience do you have?

- < 1
- 1 - 4
- 5 - 9
- 10 - 14
- 15 - 19
- > 20

Awareness and Usage

Which of the following constructs are you aware of? Select all that apply.

- In-line if / ternary statements
- Lambda expressions
- Null-coalesce operator (??)
- Null-conditional operator (?.)
- Foreach loop
- Unary increment operators (++ , --)
- Compound assignment operators (+ = , - = , etc...)
- I am not familiar with any of these

In places where they can be used, how often do you use each of these constructs in your code?

	Never	Rarely	Sometimes	Frequently	Always
In-line if / ternary statements	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lambda expressions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Never	Rarely	Sometimes	Frequently	Always
Null-coalesce operator (??)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Null-conditional operator (?.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Foreach loop	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unary increment operators (++ , --)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Compound assignment operators (+=, -=, etc...)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use

When you choose **to use** these constructs, for what reason do you use them? Select all that apply.

	It is company style	It makes code clearer	It makes code simpler	It makes code run faster	None of these
In-line if / ternary statements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lambda expressions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Null-coalesce operator (??)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Null-conditional operator (?.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Foreach loop	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unary increment operators (++ , --)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Compound assignment operators (+=, -=, etc...)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

You selected "None of these" at least once in the previous question. Please briefly describe the reasons you use the construct(s) for which you selected this option.

Not Use

When you choose **to not use** these constructs, for what reasons do you not use them?
Select all that apply.

	It is company style	It would make code less clear	It would make code more complex	It would make code run slower	None of these
In-line if / ternary statements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lambda expressions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Null-coalesce operator (??)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Null-conditional operator (?.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Foreach loop	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unary increment operators (++ , --)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Compound assignment operators (+=, -=, etc...)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

You selected "None of these" at least once in the previous question. Please briefly describe the reasons you choose not to use the construct(s) for which you selected this option.

Efficiency

What effect do you think these constructs have on code performance?

	Decreased Performance	No change	Increased Performance	Don't know
In-line if / ternary statements	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lambda expressions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Null-coalesce operator (??)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Decreased Performance	No change	Increased Performance	Don't know
Null-conditional operator (?.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Foreach loop	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unary increment operators (++ , --)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Compound assignment operators (+=, -=, etc...)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Construct Frequency

Considering the wider programming and software development industry, how often do you think **in-line / ternary if statements** are used in these languages?

	Below average	Average	Above average	Don't know
C#	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
JavaScript	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Java	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Considering the wider programming and software development industry, how frequently do you think **lambda expressions** are used in these languages?

	Below average	Average	Above average	Don't know
C#	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
JavaScript	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Java	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Considering the wider programming and software development industry, how frequently do you think **null-coalesce operators** are used in these languages?

	Below average	Average	Above average	Don't know
C#	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Java	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Considering the wider programming and software development industry, how often do you think **null-conditional operators** are used in these languages?

	Below average	Average	Above average	Don't know
C#	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
JavaScript	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Considering the wider programming and software development industry, how often do you think **foreach loops** are used in these languages?

	Below average	Average	Above average	Don't know
C#	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
JavaScript	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Java	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Considering the wider programming and software development industry, how often do you think **unary increment operators** are used in these languages?

	Below average	Average	Above average	Don't know
C#	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
JavaScript	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Java	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Considering the wider programming and software development industry, how often do you think **compound assignment operators** are used in these languages?

	Below average	Average	Above average	Don't know
C#	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
JavaScript	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Java	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Closing

Do you have any further comments on/around the usage of the mentioned constructs?