Applying Techniques to Modify Strings

Steve Gordon

.NET Engineer and Microsoft MVP

@stevejgordon www.stevejgordon.co.uk

Overview

Trim whitespace

Handle whitespace using regex

Convert case

Replace character(s)

Remove character(s)

Use regex lookarounds

Demo

Trim leading and trailing whitespace

Convert the case of characters and strings

Trimming

`TrimStart`

Removes all leading occurrences from the current string

`TrimEnd`

Removes all trailing occurrences from the current string

`Trim`

Removes all leading and trailing occurrences from the current string

```
// Definitions:

public string Trim ();
```

Trim

Removes all leading and trailing whitespace characters from the current string.

```
// Definitions:
public string Trim ();
public string Trim (char trimChar);
```

Trim

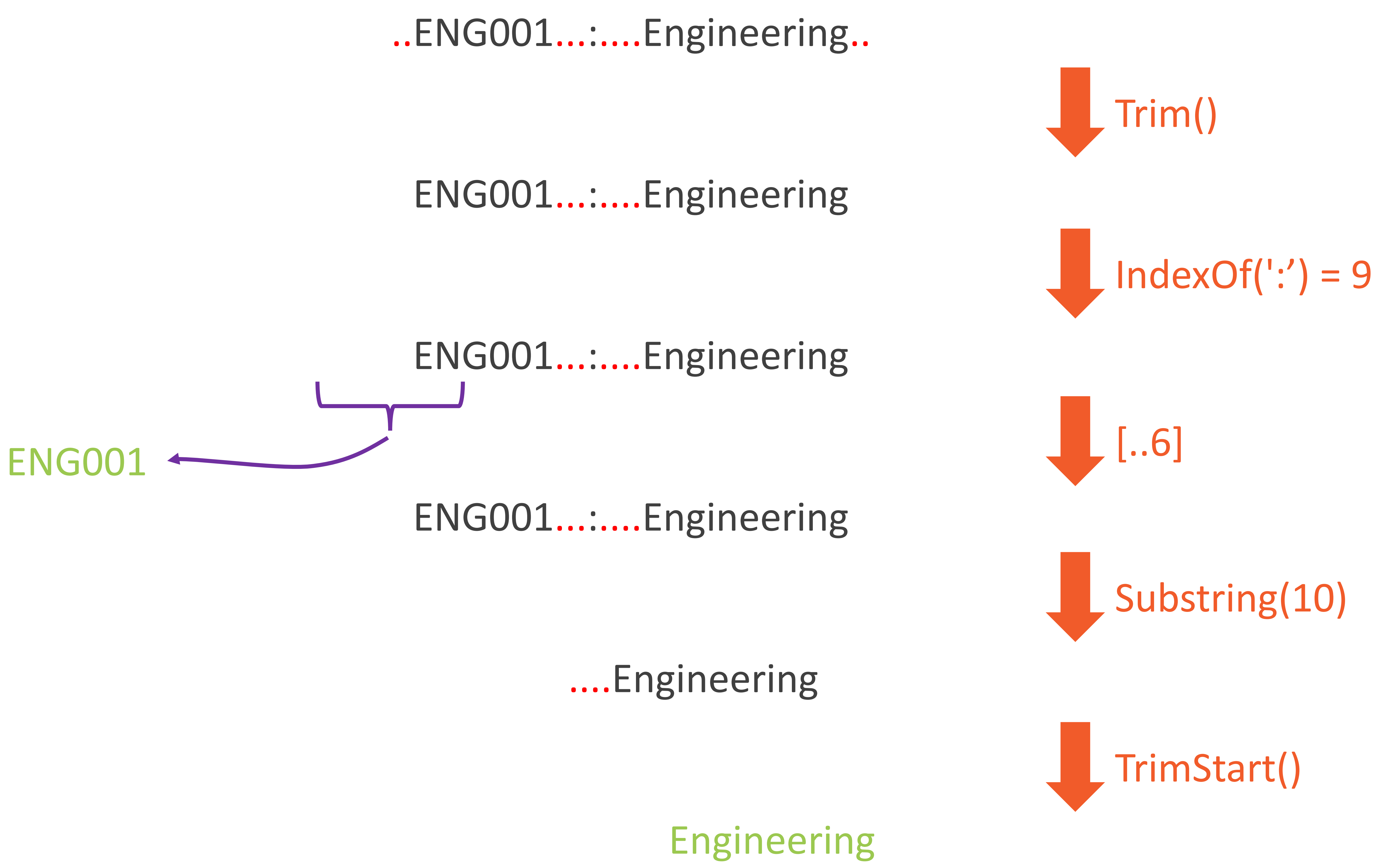
Removes all leading and trailing instances of a character from the current string.

```
// Definitions:
public string Trim ();
public string Trim (char trimChar);
public string Trim (params char[]? trimChars);
```

Trim

Removes all leading and trailing occurrences of a set of characters specified in an array from the current string.

Strings are immutable, so trimming creates a new string instance with the characters trimmed from the start and/or end.


..ENG001...:....Engineering..
Trim()
ENG001...:....Engineering
IndexOf(':') = 9
ENG001...:....Engineering
[..6]
ENG001
ENG001...:....Engineering
Substring(10)
....Engineering
TrimStart()
Engineering

ToLower and ToLowerInvariant can be used to convert characters in a string from upper to lower case.

```
// Definitions:
public string ToUpper ();
public string ToUpper (CultureInfo info);
```

Trim

Returns a copy of a string converted to uppercase.

```
// Definitions:

public string ToUpperInvariant ();
```

Trim

Returns a copy of a string converted to uppercase using the casing rules of the invariant culture.

Demo

Handling whitespace using regex

- Implement Category.TryParseUsingRegex
- Account for optional whitespace

Demo

Replace character(s) of a string

Remove part of a string

Remember that strings are immutable!

Requirements

- Ensure a consistent UK English spelling for product names
  - e.g. Color -> Colour

Requirements

- Allow colons as well as hyphens to separate the sales code and SKU in the product information.
- Support more complex formats for the product information.
- Ensure that only numeric digits are used for sales codes.

Alternative Product Information Format

123-b#AC65(BBA)

Alternative Product Information Format

123-b#AC65(BBA)

Alternative Product Information Format

123-b#AC65(BBA)

Alternative Product Information Format

123-b#AC65(BBA)

Alternative Product Information Format

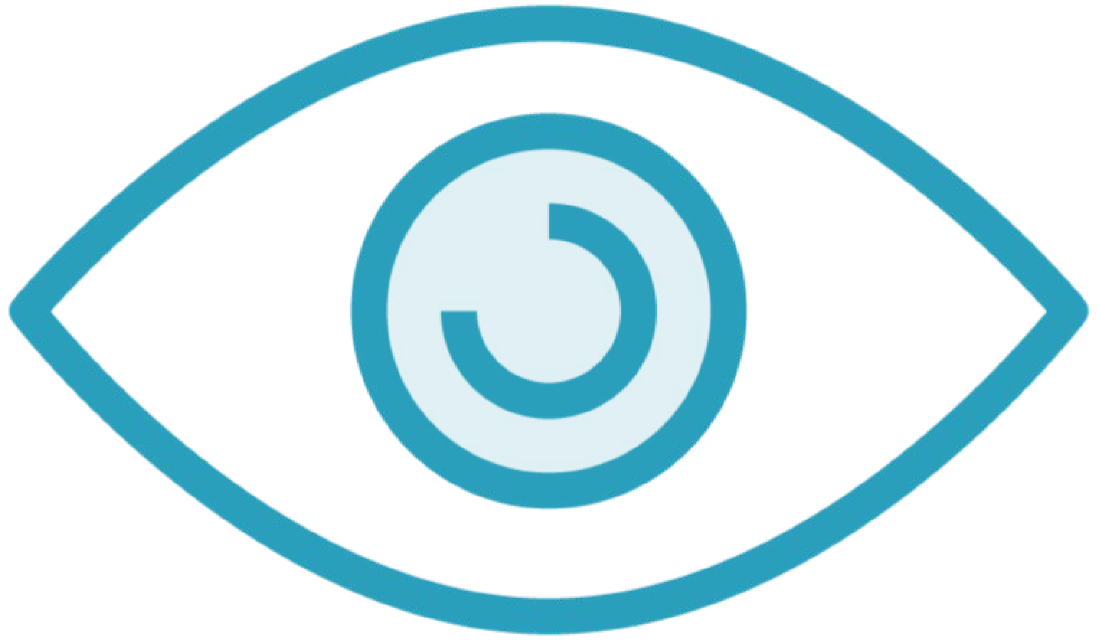
$$\underbrace{\text{123}}_{\text{Sales Code}}\text{-b\#}\underbrace{\text{AC65}}_{\text{SKU}}\text{(BBA)}$$

Demo

Use regex to match and extract the sales code and product SKU

- Learn about lookarounds
- Use a negative lookahead in the pattern
- Use the regex101 website to craft a pattern

Lookarounds



We can use a lookahead or a lookbehind in a pattern, collectively referred to as lookarounds

A lookahead is used to check a condition ahead of the current position

A lookbehind is used to check a condition behind the current position

Lookarounds can be positive or negative

- Positive lookarounds expect to find a match
- Negative lookarounds expect not to find a match

Lookarounds

`(?=)`	`(?!)`	`(?<=)`	`(?<!)`
Positive Lookahead	**Negative Lookahead**	**Positive Lookbehind**	**Negative Lookbehind**

Like the start and end anchor metacharacters, lookarounds are zero-width assertions and do not consume characters so the position within the input is not incremented.

Lookahead Examples

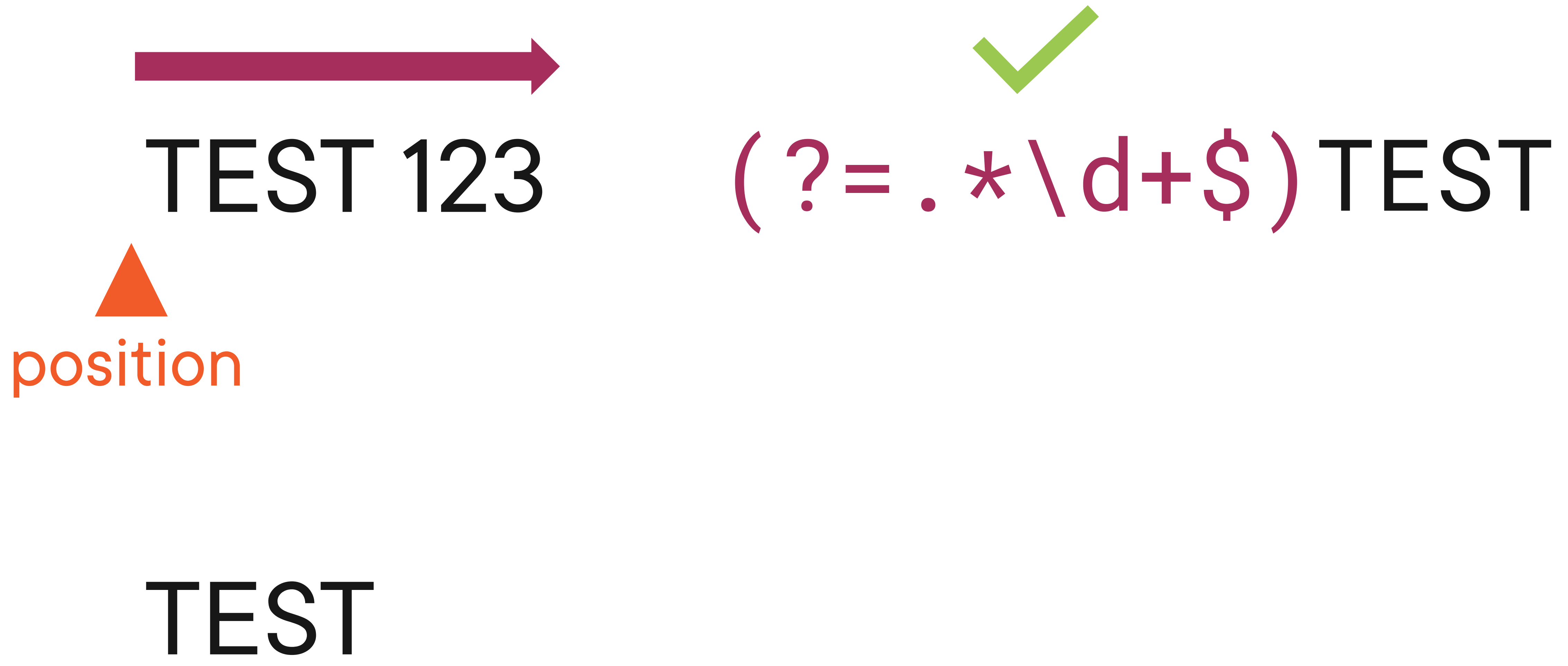
TEST 123

```
(?=.*\d+$)TEST
```

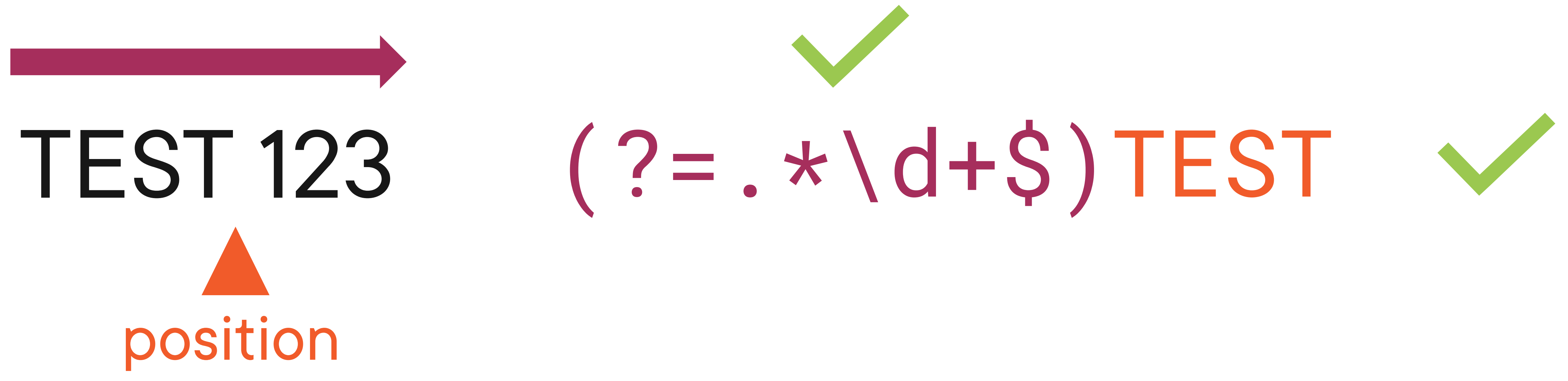
▲
position

TEST

Lookahead Examples



Lookahead Examples



TEST

Lookahead Examples

TEST 123	`(?=.*\d+$)TEST`	✓
TEST	`(?=.*\d+$)TEST`	

position

Lookahead Examples

TEST 123 `(?=.*\d+$)TEST` ✓

✗

TEST `(?=.*\d+$)TEST` ✗

position

Up Next:

Applying Techniques to Combine and Format Strings